Build Guide - Pickup Upgrade for Model 5

Accessory for:
“Model 5: Landy 4×4 Wagon”

www.3D Sets.com
3D Sets Facebook

Version 1.1

Pickup Upgrade for Model 5 – version 1.1 technical specs.

- Dimensions: 54 cm length, 24.5 cm width (including mirrors), 22.5 cm height
- Model weights roughly 4 kg (including battery)
- Permanent 4 wheel drive, all differentials are in the locked state
- Remote- controlled steering and speed control
- Suspension with real springs and dampers for good off-road capabilities
- Reduction gearbox with 1:40 gear ratio for slow motion and high torque
- Doors, hood, and trunk can be manually opened
- Please do not combine new axles with the old ones – we switched the direction of rotation for better motor efficiency!

Are you printing complete new model, or re-building the existing one?

You can use this Pickup Upgrade in two possible ways:

If you want to build a new model Landy 4x4 Pickup Wagon:

- Jump to page 4 and follow instructions

If you want to upgrade your existing model to Landy 4x4 Pickup Wagon

- Jump to page 6 and follow instructions

Important! If you want all new features (Axles/Differentials, rear track bar), please update your “Model 5” to the version 1.1! To make this, just re-download Model 5 files from your 3dsets.com account again.

Print all parts except these “body” Wagon parts:

Print all parts except these “interior” Wagon parts:

“Pickup Upgrade for Model 5” shares these parts with “Model 5: Landy 4x4 Wagon”:

Before you start

- Get ready all the tools.
- Buy necessary parts that cannot be printed (screws, bearings, motor, etc.), these parts are listed on the next page.
- Make sure that your printer is calibrated well – print our “calibration part” to ensure that you can fit bearings on shafts properly! Calibration part is located on “Print Plate 0”.
- Use higher printing temperatures – use about 210-215°C for PLA to have firm layer adhesion!

- The Build guide is divided on steps and subassemblies. The Subassembly is a sequence, where you will make some independent sub-part like gearbox, axles, etc. Later you will install subassembly in the car.

- Model 4: Landy 4x4 Wagon includes 2 different wheel designs. Both designs share the same tire dimension, so feel free to choose the right design for you:

- For “Wheel C”, print plates with “Wheel C” in name.

- For “Wheel D”, print plates with “Wheel D” in name.

Are you new to the Radio Controlled models?

Don't worry, Radio Controlled (RC) models are not as complicated as they can look! However, it's a good to know some basics before you will start buying parts.
Most mechanical parts in our products will be 3d printed on your own printer, so we will focus here on RC electronics.

On-line begginers guides:

- Steemit.com – a basic introduction to RC car models
- Instructables.com – another beginners guide, general (not focused on car models)
- Youtube – a nice video showing RC electronic basics

If you have any questions regarding our models, feel free to ask us (or other 3dsets builders) on our Facebook discussion group, available here: Facebook – 3D Sets

Pickup Upgrade for Model 5 – version 1.1: What do you need?

- **NEW! ➡ list of all required non-printed parts is here (will be continuously updated): click for non-printed parts spreadsheet**

- Print Filament: To print this model you will need around 3000 g of print filament in total. We print our models from PLA material. If you will use the geared gearbox with 540DC motor, you should use **ASA/Prusament PC Blend filament for Motor Pulley, Motor Frame**, as it has better temperature resistance. **For the differential gears its recommended to use Prusament PC Blend**. You can use variable color for chassis and body. Tested and recommended filament: Fillamentum PLA Extrafill or Prusament PLA.
- Gearboxes choices (more info about gearboxes is on page 17):
    - **BeltDrive 4x4 gearbox** (recommended option):
        - Model is driven by brushless motor **3530** - size
        - **Timing belts**: **HTD 144-3M-06 (HTD profile, 144 mm long, 3 mm teeth distance, 6 mm wide) – 4 pcs**
        - All parts can be printed from PLA or other filaments
    - **Geared Gearbox** (older design):
        - Model is driven by 540 DC motor (27 T)
        - All gears and shaft are 3D printed. Don't use PETG, ASA or ABS for gears!
- Steering servo in standard size (39x19,5x38,5mm) – minimum torque: 10kg, optimum 20kg
- Speed controller (ESC) max size 40x30x25mm
- Ball Bearing 10x15x4 mm - 6700RS: 38 pcs. (or less depending on gearbox type and axles configuration)
- Shock -Coil springs, inner diameter max 18mm, length 75-90mm: 4 pcs.
- Rubber tires - Outer Diameter: 90-100mm, Inner Diameter: 46-48mm
- 7.2V (2S) Battery with dimensions max 138x48x26mm
- Electric connectors: 2 pairs (battery connectors, motor <–> ESC connectors)
- Twin cable & soldering equipment
- Clear Binding Covers, or any transparent foil up to 0,5 mm thick – material for "Glass".
- Grease and Thread Locker for securing fasteners on moving parts

Pickup Upgrade for Model 5 – version 1.1: Required hardware

Screws and nuts (in metric size):

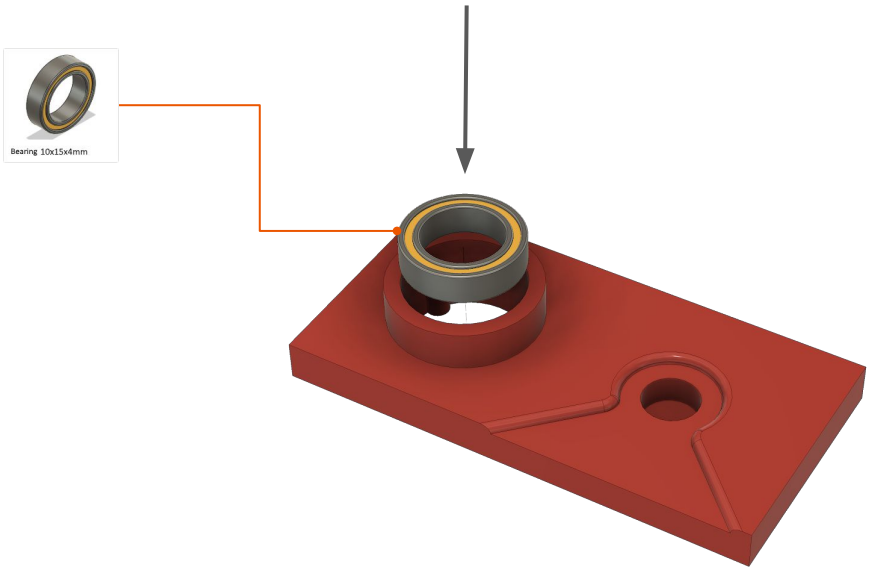
- M2x6: 128 pcs.
- M2x8: 6 pcs.
- M2x10: 40 pcs.
- M2x12: 4 pcs.
- M2x14: 2 pcs.
- M2x16: 3 pcs.
- M3x6: 11 pcs.
- M3x8: 15 pcs.
- M3x10: 67 pcs.
- M3x12: 36 pcs
- M3x16: 47 pcs.
- M3x20: 11 pcs.
- M3x25: 12 pcs.
- M3 nuts: 42 pcs.
- M3 locknuts: 22 pcs.
- M3x6 Set Screw : 2 pcs.
- M3x6 Socket(!) Head : 6 pcs.

with wheels C: + 20 pcs.

with wheels D: + 20 pcs.

Check 3d printer calibration!

Please at first test whether the bearing can be inserted into the calibration part. If you have problems or the bearing fits too loose, please make sure that the printer is properly calibrated. Dimensions of the printed parts should match dimensions of the 3d model.



Pickup Upgrade for Model 5 – chassis

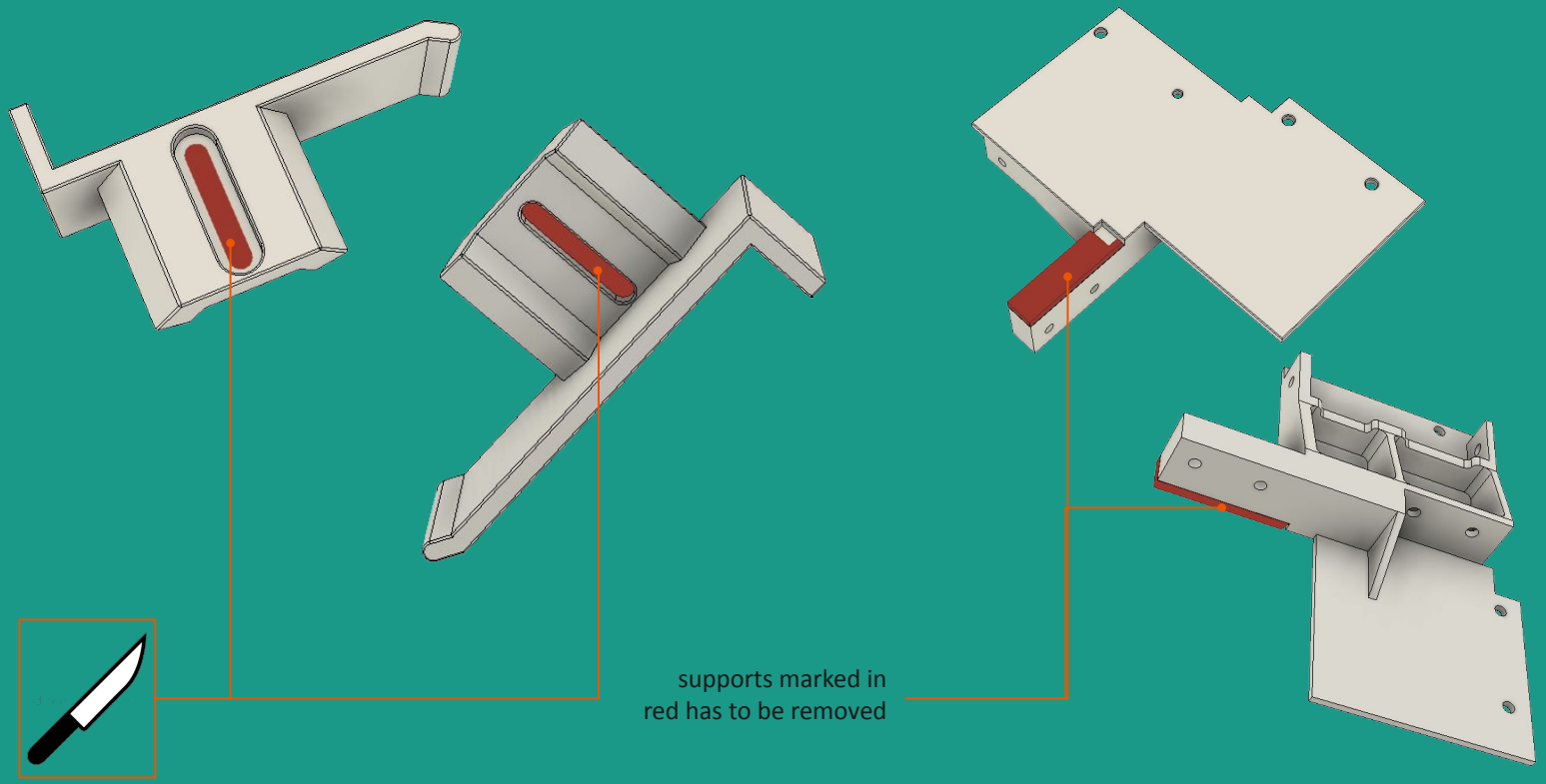
In this 3 - step procedure you will assemble chassis of the car and front panel.

Non-printed parts:

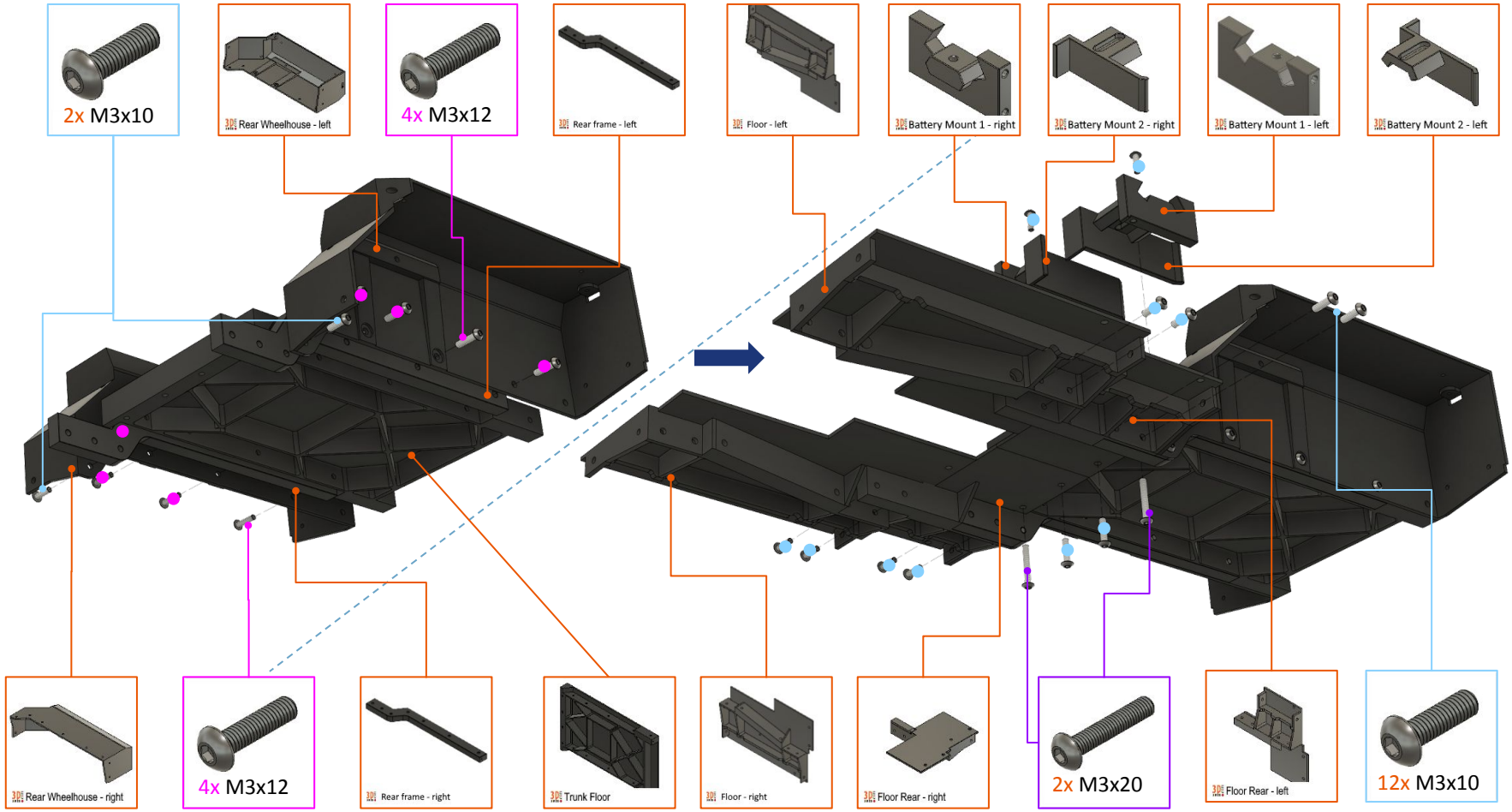
- Screw M3x10: 24 pcs.
- Screw M3x12: 14 pcs.
- Screw M3x20: 2 pcs.
- M3 locknuts: 4 pcs.

Chassis – postprocessing

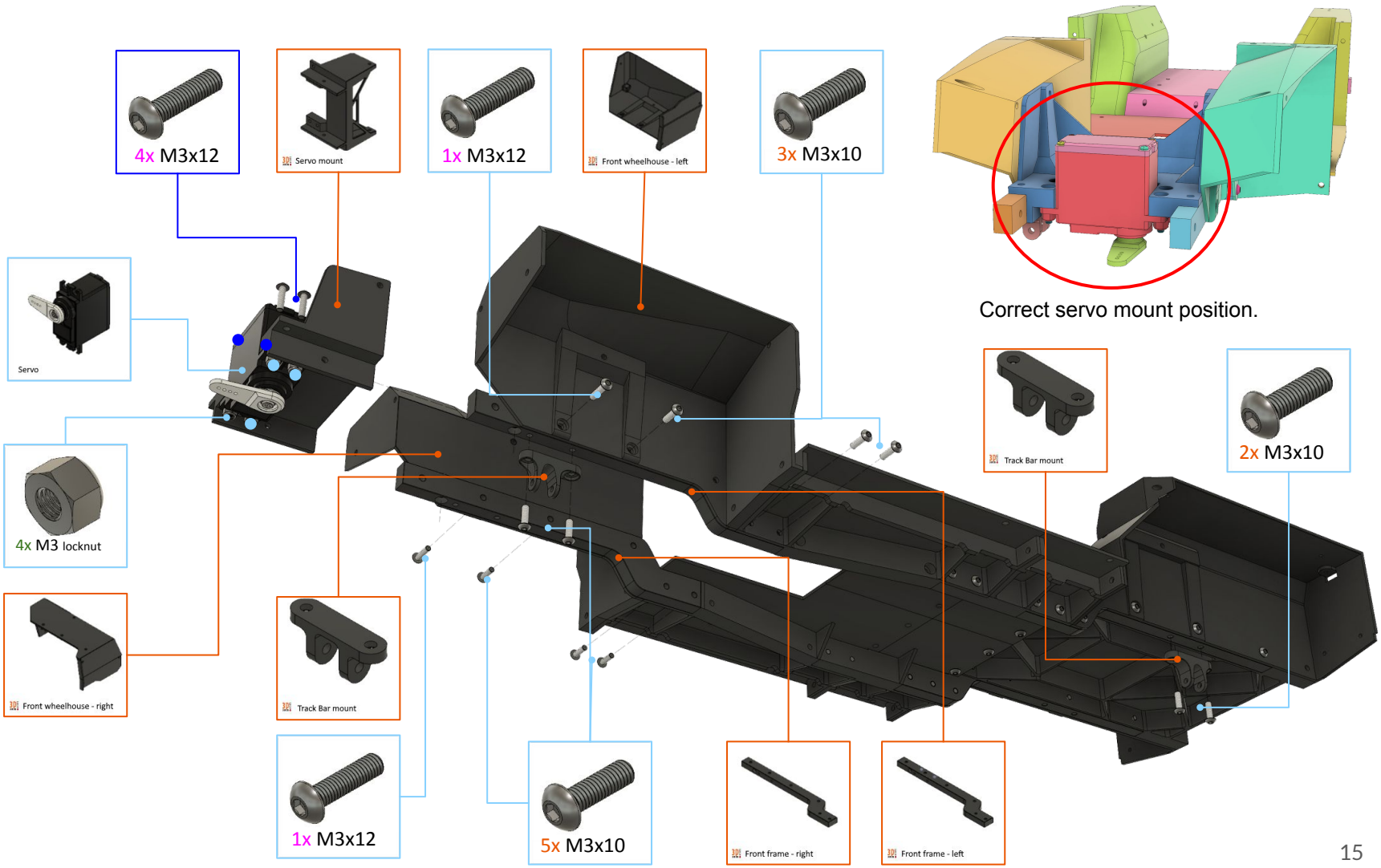
Before you start building Chassis, carefully remove printing supports (marked red) integrated into specific parts rendered below. You can use pliers and a sharp knife to make the procedure easier. Be very careful as you can harm yourself!



Pickup Upgrade for Model 5: Chassis - step 1-2/3



Pickup Upgrade for Model 5: Chassis - step 3/3



Pickup Upgrade for Model 5 – body

In this step procedure you will assemble chassis of the car and front panel.

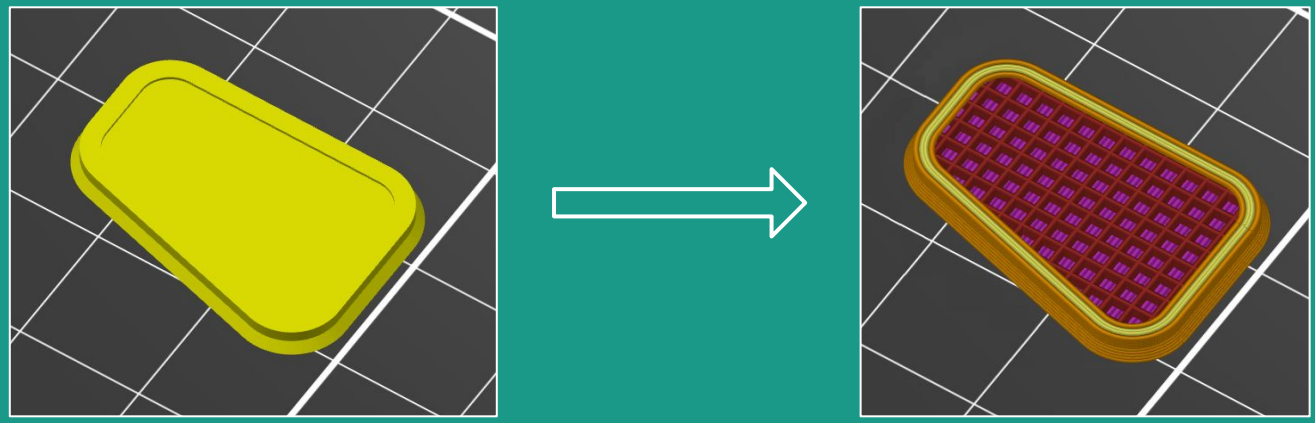
Non-printed parts:

- Screw M2x6: 11 pcs.
- Screw M3x6: 2 pcs.
- Screw M3x10: 8 pcs.
- Screw M3x20: 2 pcs.

Pickup Upgrade for Model 5: Fender grill

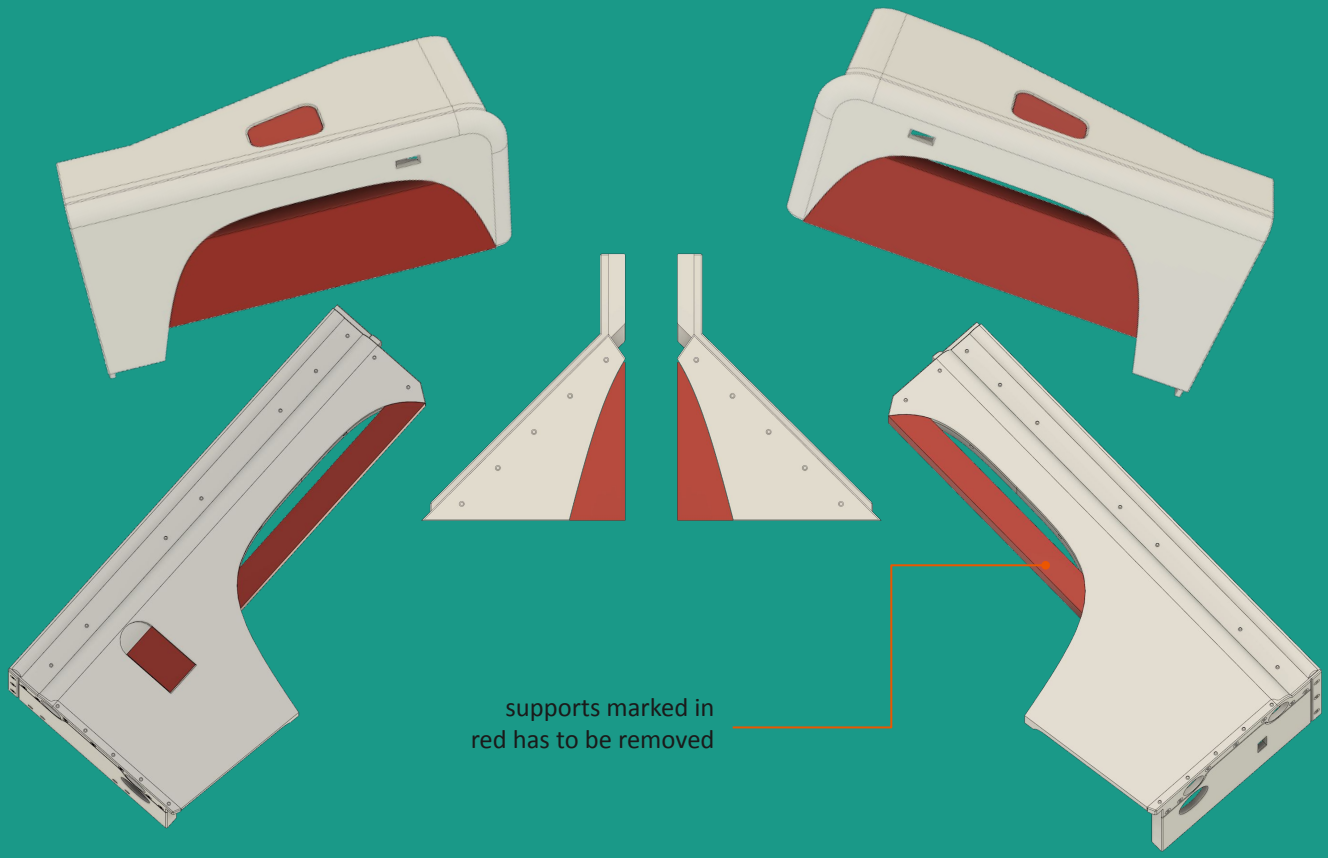
If you will print the part “Fender Grill” from the .stl file instead of printing from provided gcode, please use following slicer setup:

- No top infill (0 top layers)
- Infill density: 50%
- Infill type: grid



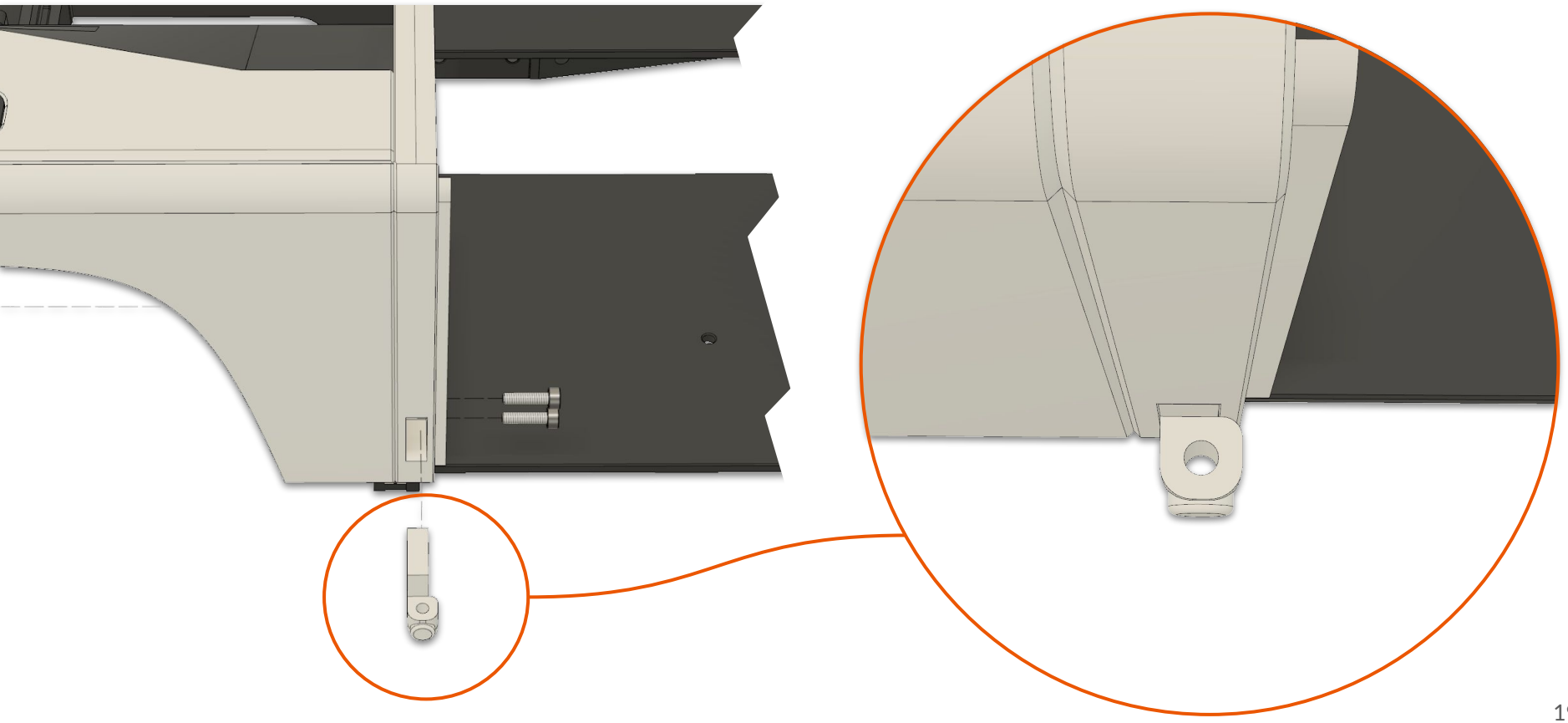
Bodywork – postprocessing

Before you start building Bodywork, carefully remove printing supports (marked red) integrated into specific parts rendered below. You can use pliers and a sharp knife to make the procedure easier. Be very careful as you can harm yourself!



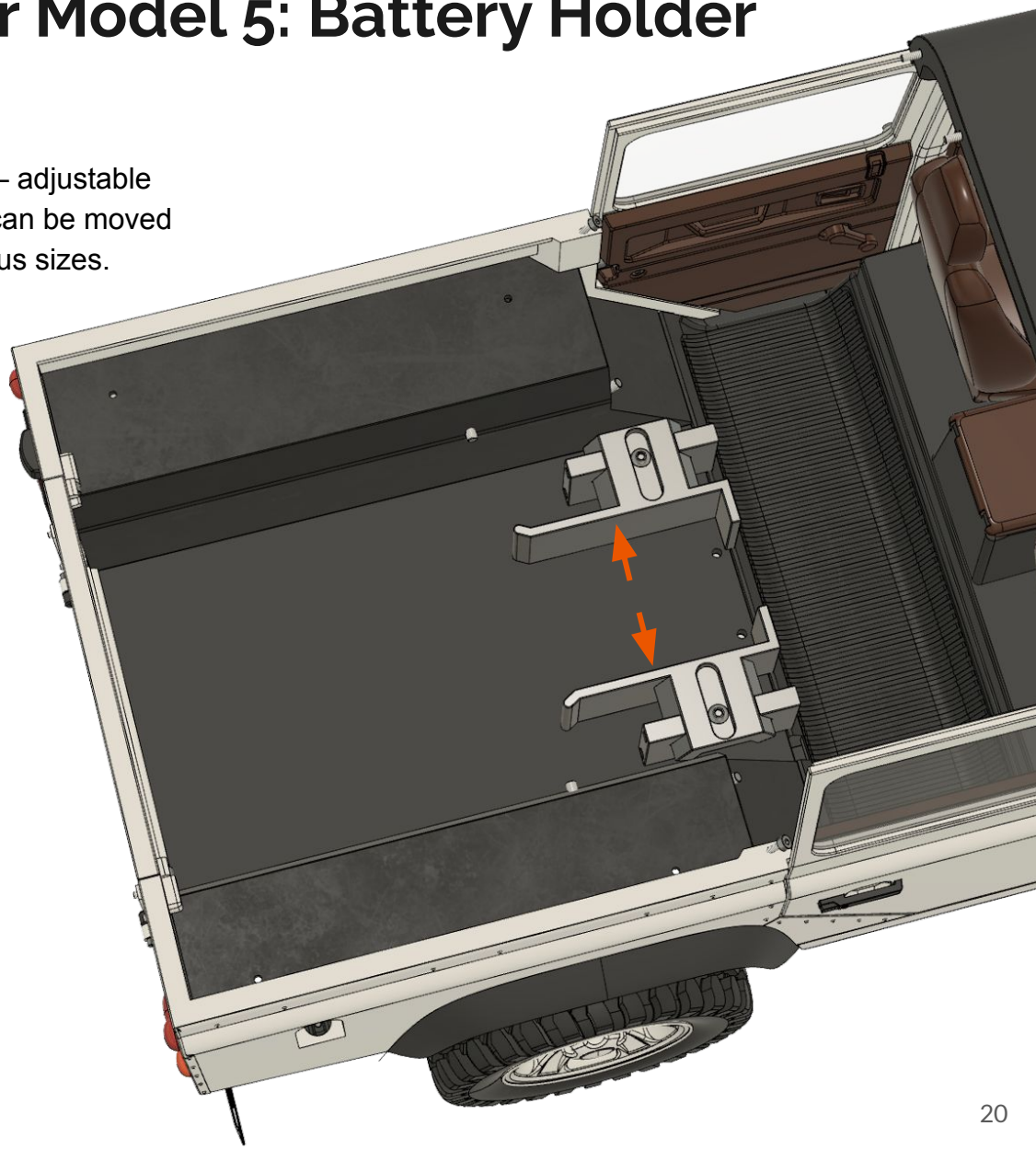
Pickup Upgrade for Model 5: Body

In next step you will assemble body panels and attach the door hinges. Please note that door hinges must be placed in correct orientation (they are NOT symmetrical). See picture below showing the correct orientation of the hinge.

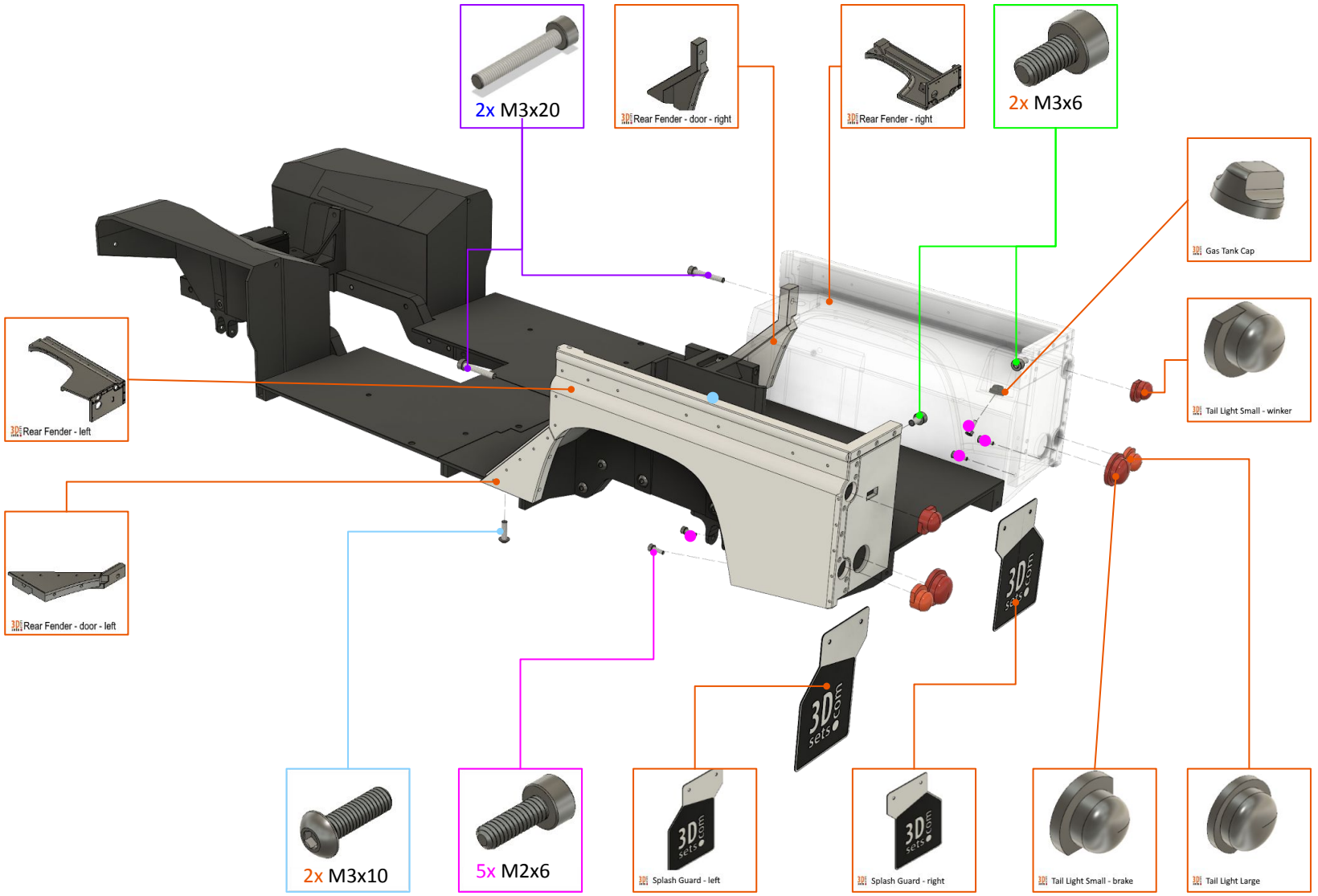


Pickup Upgrade for Model 5: Battery Holder

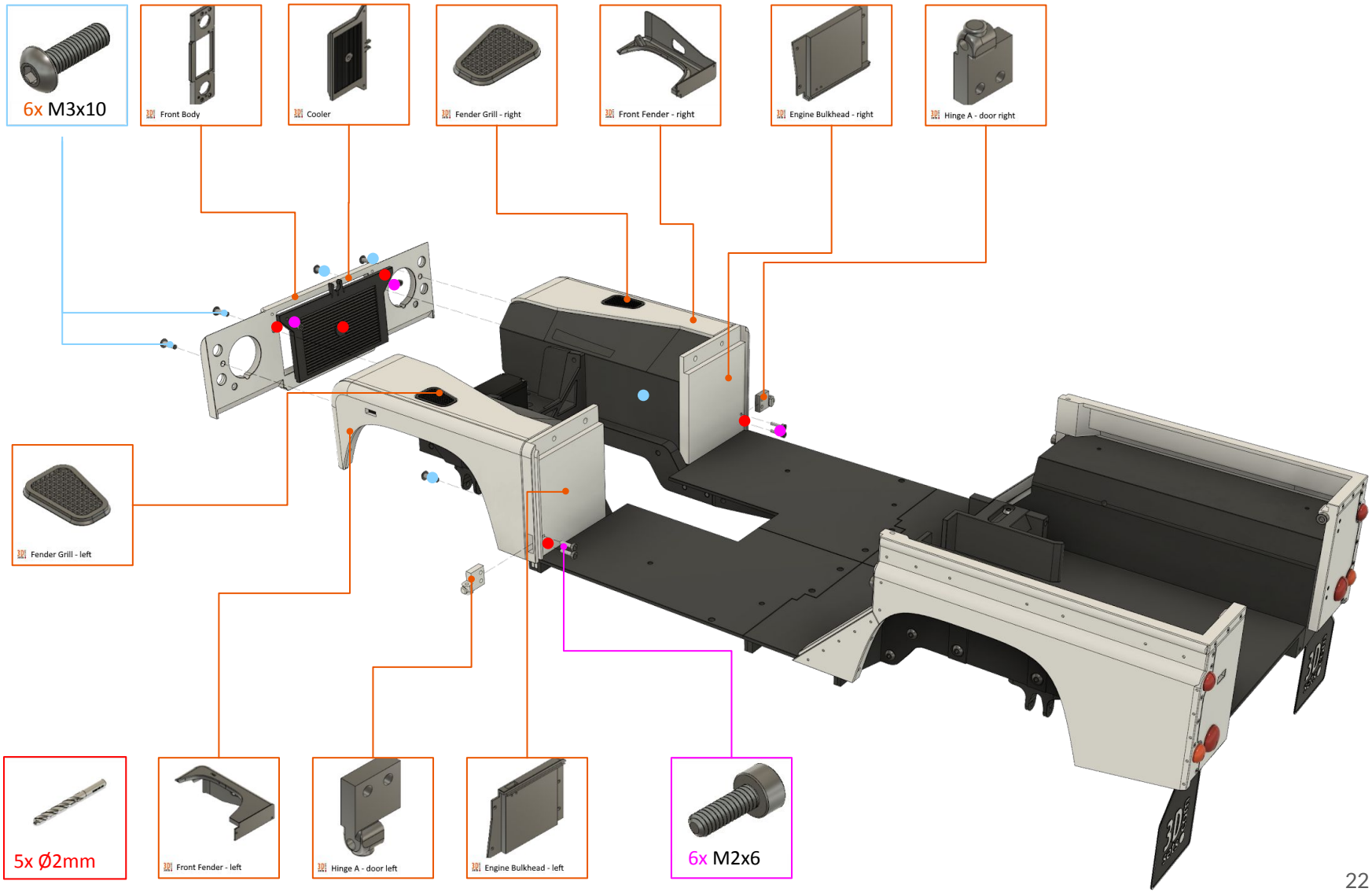
This Upgrade is equipped with new feature – adjustable battery holder. The side parts of the holder can be moved so that they fit perfectly on batteries of various sizes.



Pickup Upgrade for Model 5: Body - step 1/2



Pickup Upgrade for Model 5: Body - step 2/2



Landy 4x4 – Gearbox choice

There are two different gearboxes available for Landy 4x4:

new *BeltDrive 4x4*
classic *Geared Gearbox*

New *BeltDrive 4x4* features:

- silent running
- brushless 3530 motor compatible
- requires timing belts HTD 144-3M-06
- easy to print
- 2S-3S battery compatible
- slightly faster than geared gearbox
- can be printed from various filaments

New *BeltDrive 4x4* is **recommended choice**. It can handle more power (up to 3S battery) and is very silent. It is compatible with all 3D Sets 4x4 models.

For BeltDrive 4x4, proceed to next page (28).

Classic *Geared Gearbox* features:

- noisier than *BeltDrive4x4*
- 540-size DC 27T motor compatible
- uses 3D printed gears
- requires more 3D printing experience
- 2S battery compatible
- slower than *BeltDrive 4x4* gearbox
- requires high-quality PLA or high-strength filament (PC Blend, Nylon..)

Classic *Geared Gearbox* is good choice if you have previous experience with and if you require 540 DC 27T motor and maximum precision of throttle response.

For Geared Gearbox, proceed to page 44.

BeltDrive 4x4 Gearbox

In this 8-step procedure you will assemble belted gearbox with the motor. The whole gearbox can be printed from PLA, unless you will drive in some extreme conditions or in very hot environment. To complete this task, get the following parts ready:

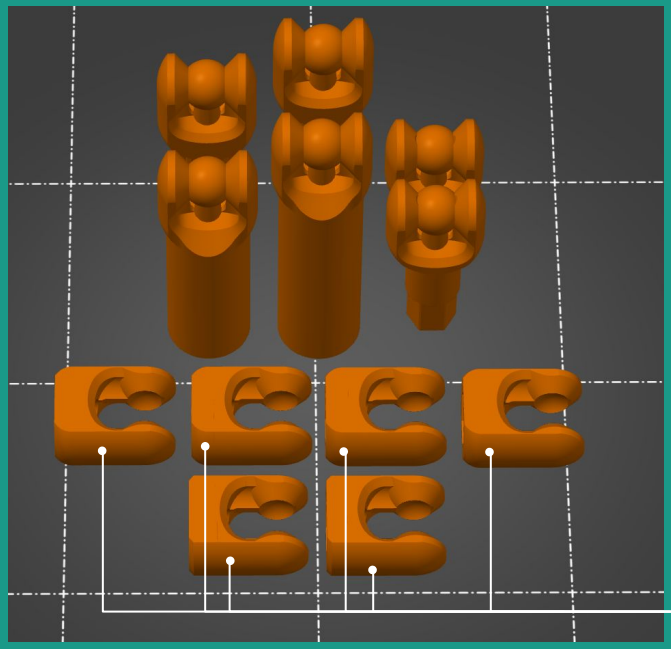
Non-printed parts:

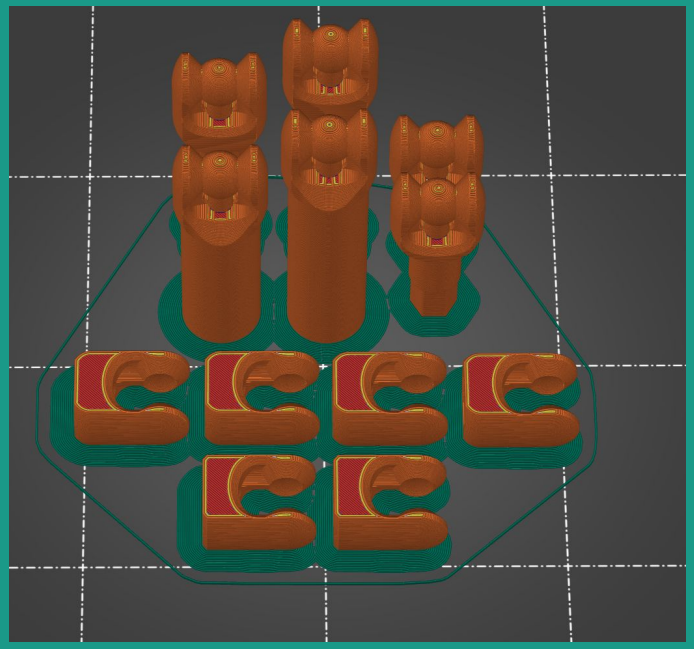
- Screw M3x6: 3 pcs.
- Screw M3x8: 9 pcs.
- Screw M3x10: 2 pcs.
- Screw M3x12: 8 pcs.
- Screw M3x16: 8 pcs.
- Screw M3x25: 6 pcs.
- M3 nuts: 22 pcs.
- Electric motor: 1 pc.
- Bearings: 10 pcs.
- Timing Belt: 4 pcs.

Shafts

If you will print the part “Shafts” from the .stl file instead of printing from provided gcode, please use following slicer setup:

- Infill density: 100%
- Infill type: Rectilinear
- Perimeters: 3

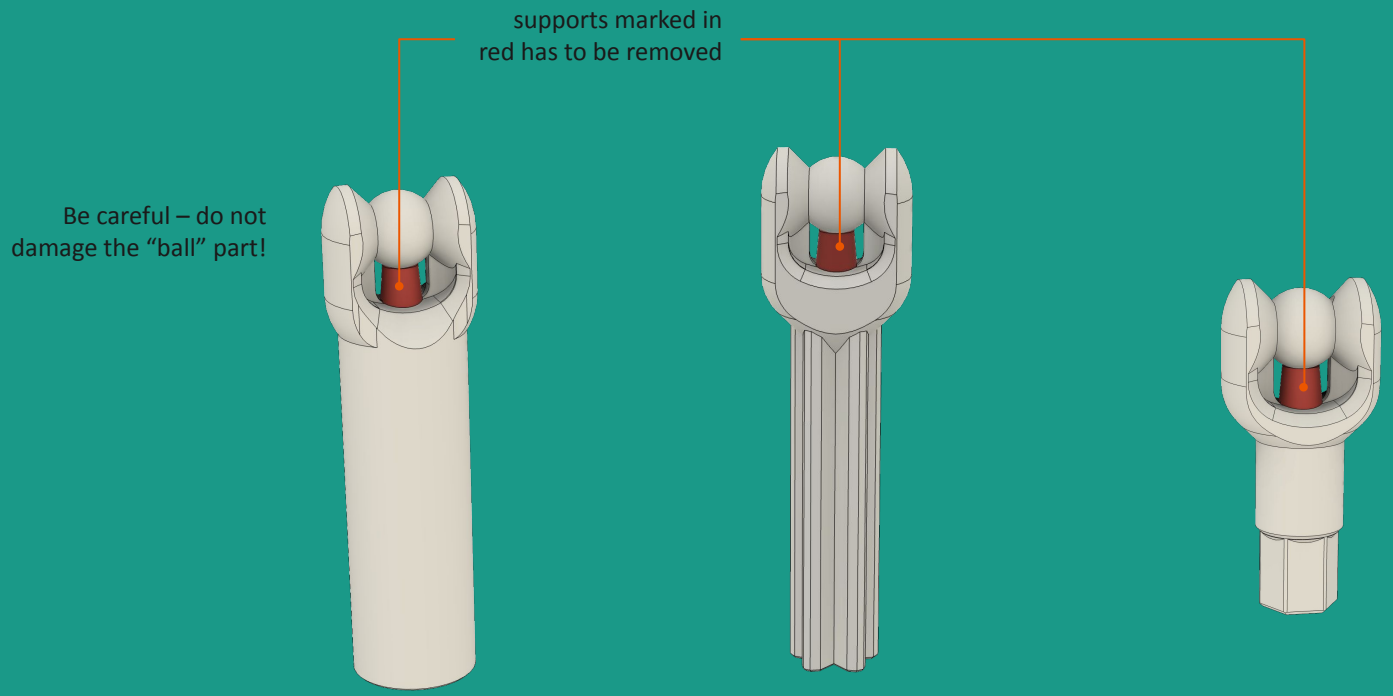




correct printing bed orientation of the Drive Shaft - Cardan and Front Wheel Shaft – **marked part MUST LAY FLAT** on the bed!

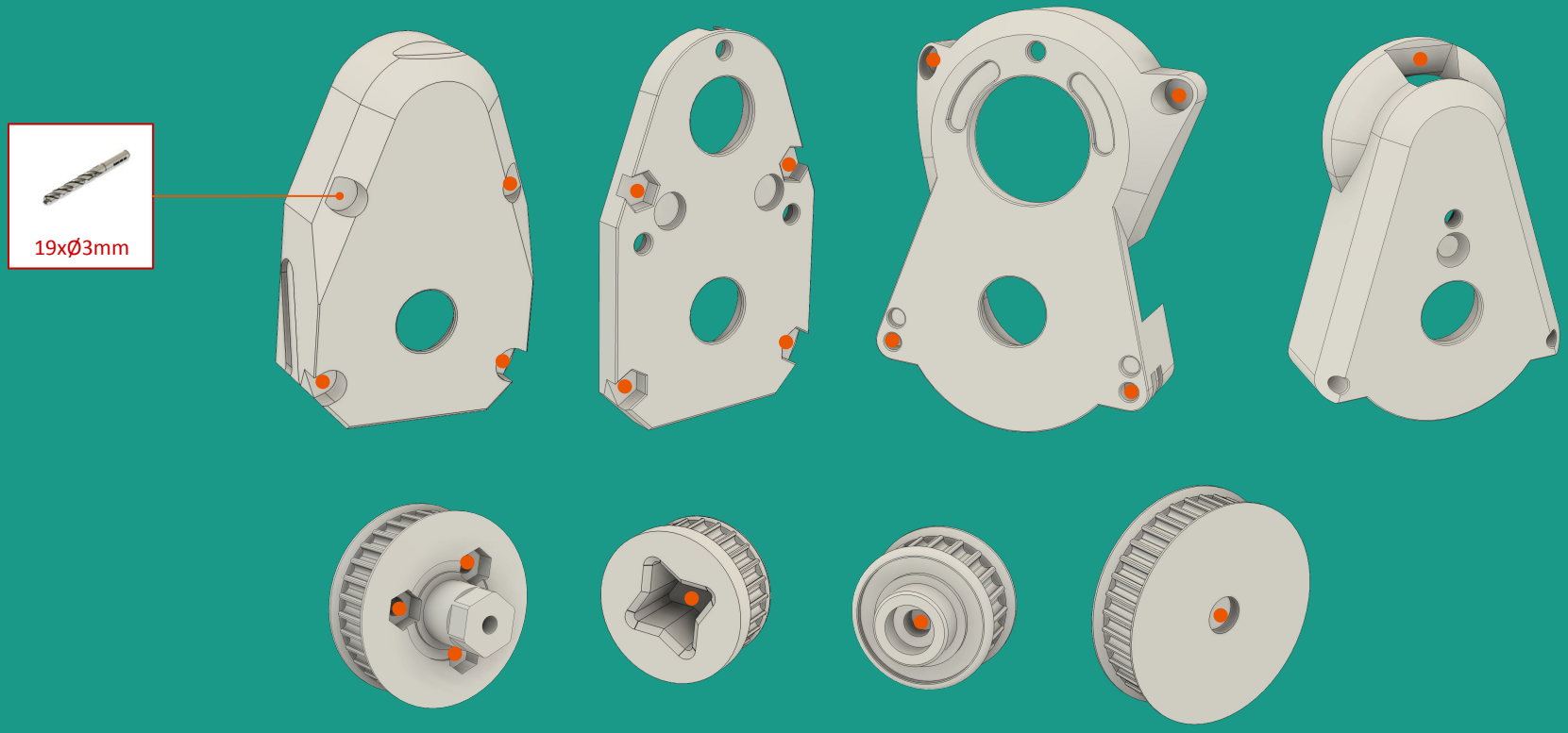
Postprocessing – removing supports

Before you start building, carefully remove printing supports (marked red) integrated to specific parts rendered below. You can use pliers and sharp knife to make the procedure easier. Be very careful as you can harm yourself!



Postprocessing – drilling holes

Please carefully drill through the marked holes that have not been printed through to make printing easier.

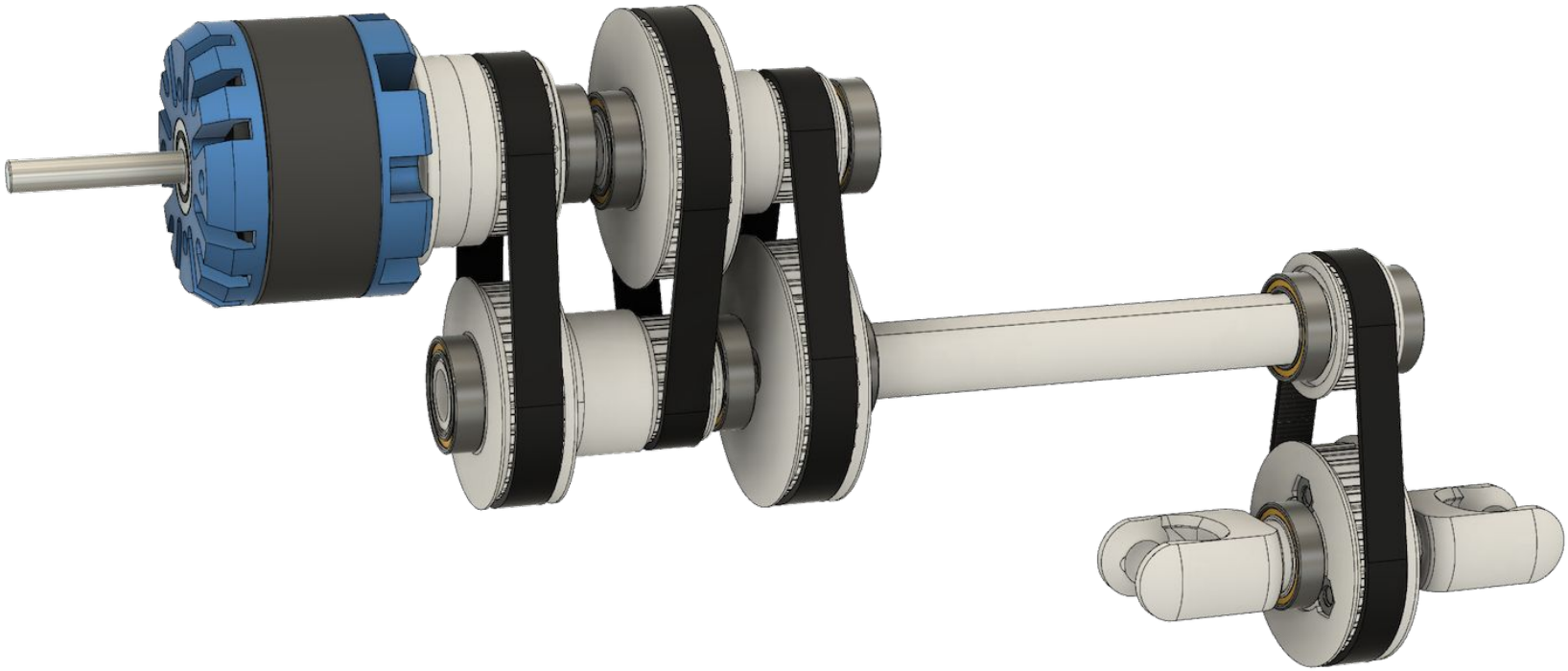


BeltDrive 4x4 Gearbox – introduction

BeltDrive 4x4 Gearbox uses **4 identical timing belts** – HTD 144-3M-06 (HTD profile, 144 mm long, 3 mm teeth distance, 6 mm wide).

BeltDrive 4x4 Gearbox is **compatible with all 4x4 3D Sets models**, so you can use it in your older Rancher/Landy without any modifications.. With this gearbox model is moving faster and has more power. Gearbox is very **silent and reliable** when assembled properly. Gearbox work with brushless outrunner **750**-1000 kV and **2S**-3S battery.

Internal belts/pulley configuration is shown below:



Important features

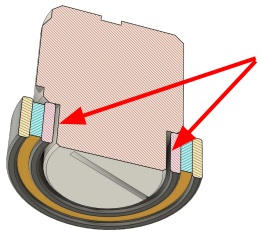
Bearings calibration

It is very important to check if small 3d printed shaft ends fit the bearings properly, because such small printed objects may shrink too much.

There are two sizes of the "*Pulley Shaft small*" parts (located on print "Belt Drive Gearbox - 2"):

"*S" = standard size;* *"L = larger size*

Please try if the "S" sized part fits the bearing without any gap. The bearing must hold on place firmly, otherwise, the gearbox can be damaged! If there is any gap between the bearing and printed part, then use a slightly larger "L" sized part.



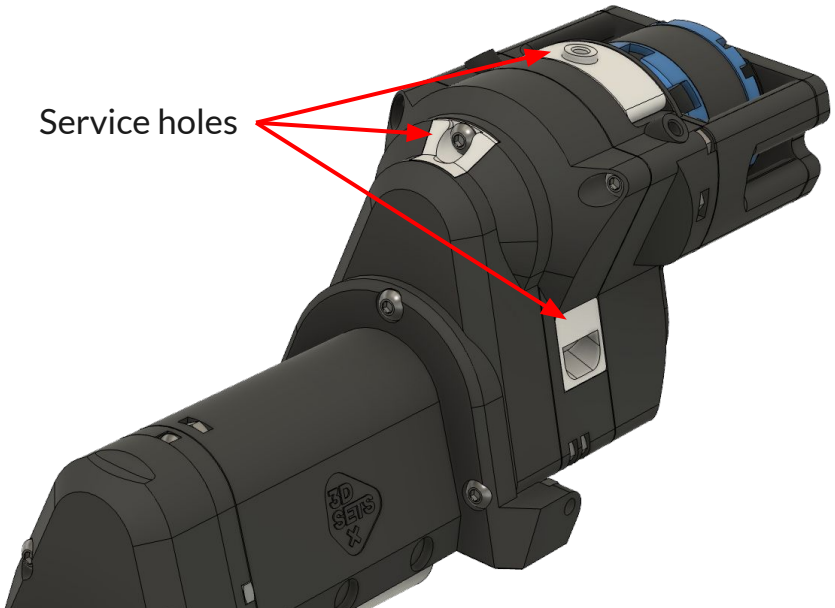
Is there any gap? Then use the "L" part!

Service holes

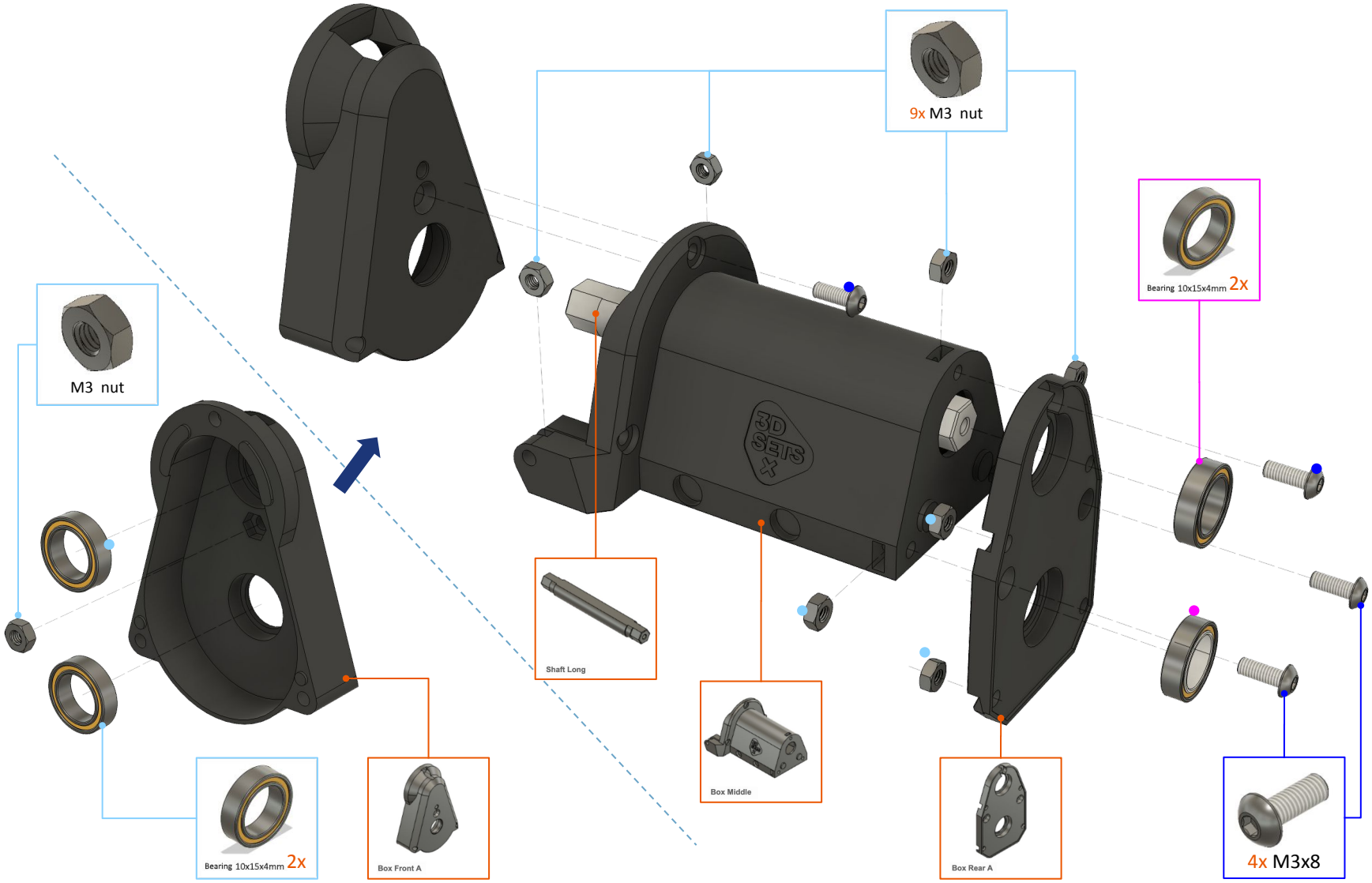
BeltDrive 4x4 v1.1 features 3 service holes with covers. These holes have these purposes:

- to help assembly of the gearbox; you can use the tip of the screwdriver to place belts in their position on the pulleys
- allows you to check the internals of the gearbox without disassembling (heat, noises, wobbling, etc.)

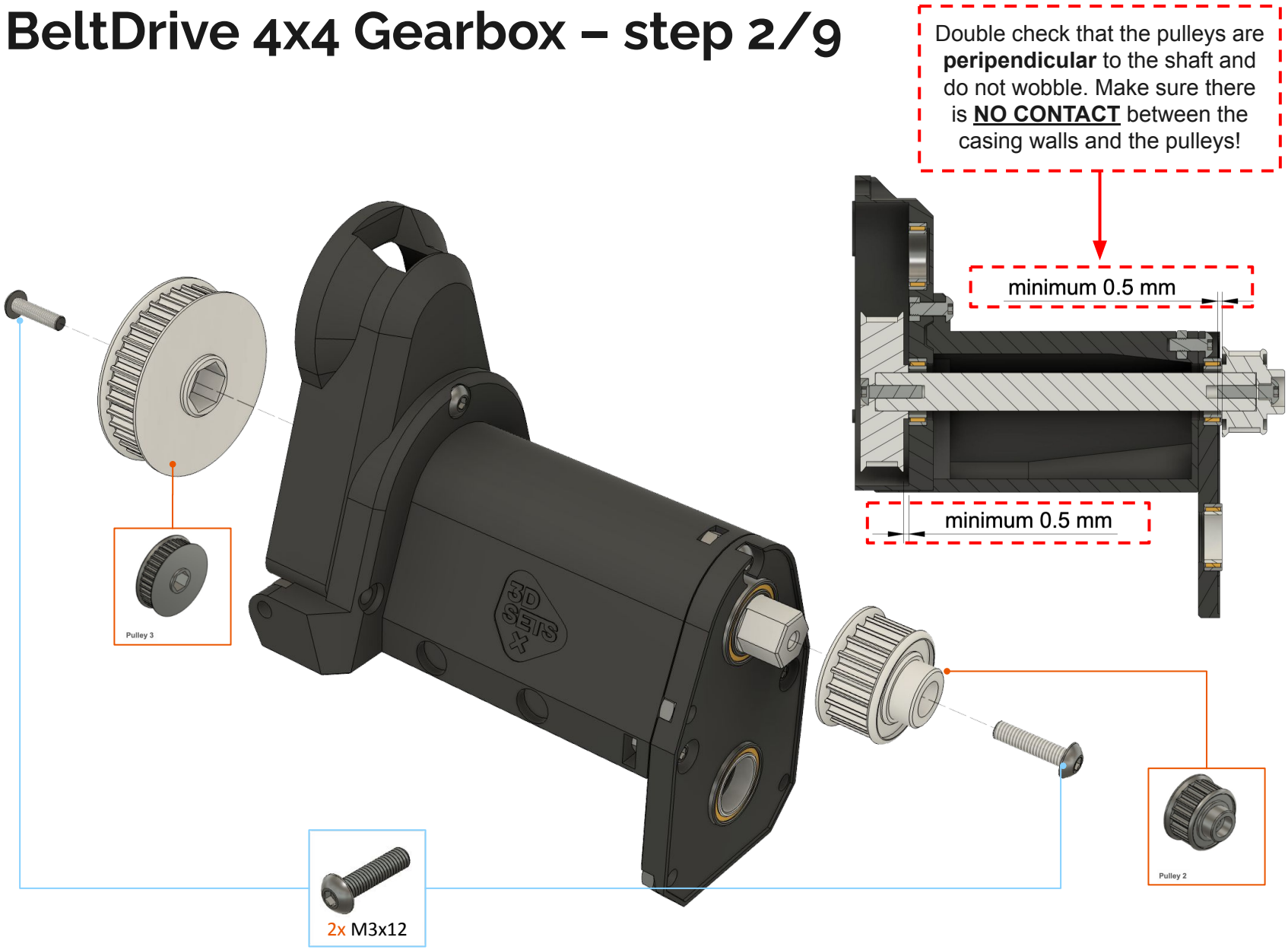
Service holes are marked white on the picture below:



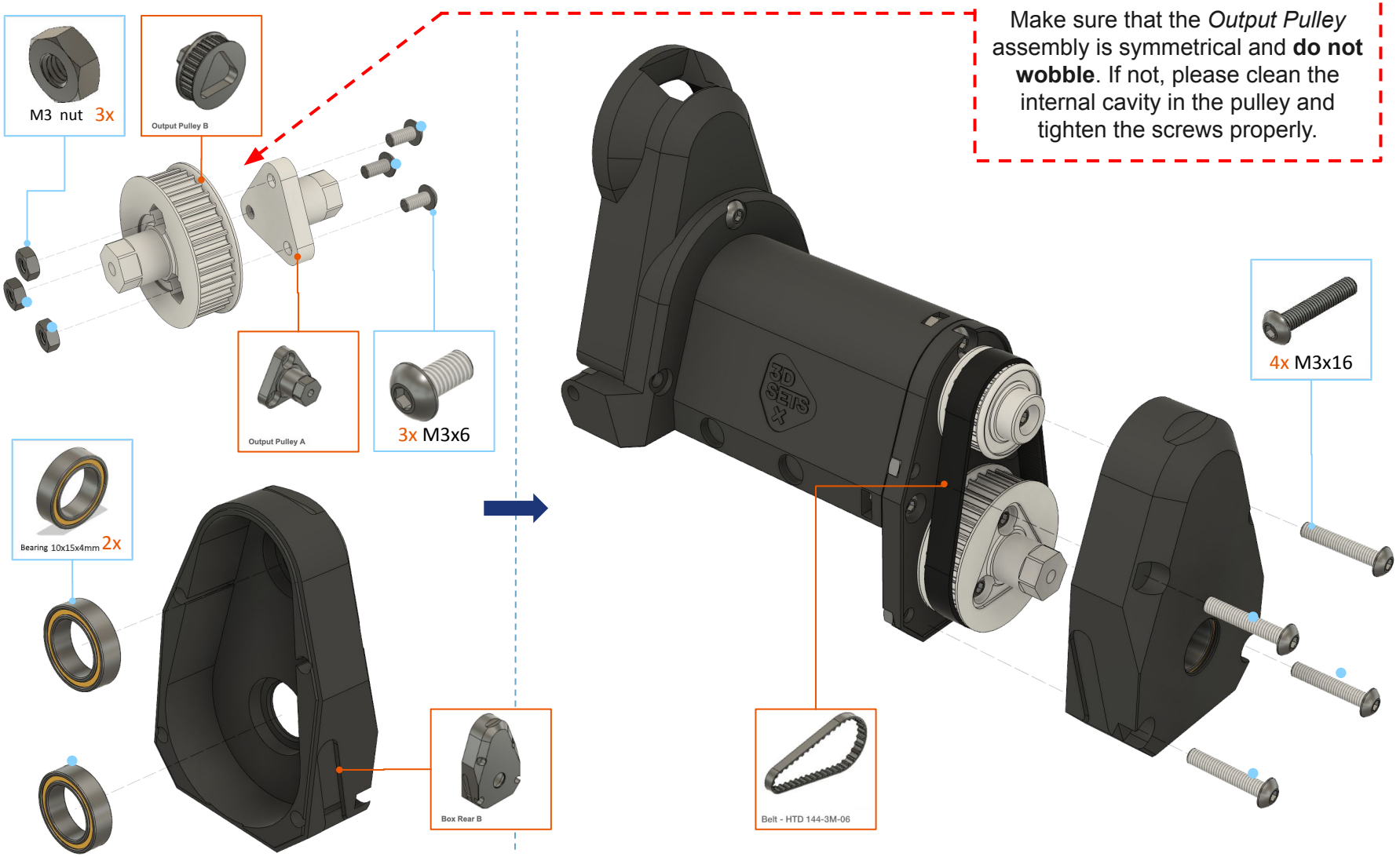
BeltDrive 4x4 Gearbox – step 1/9



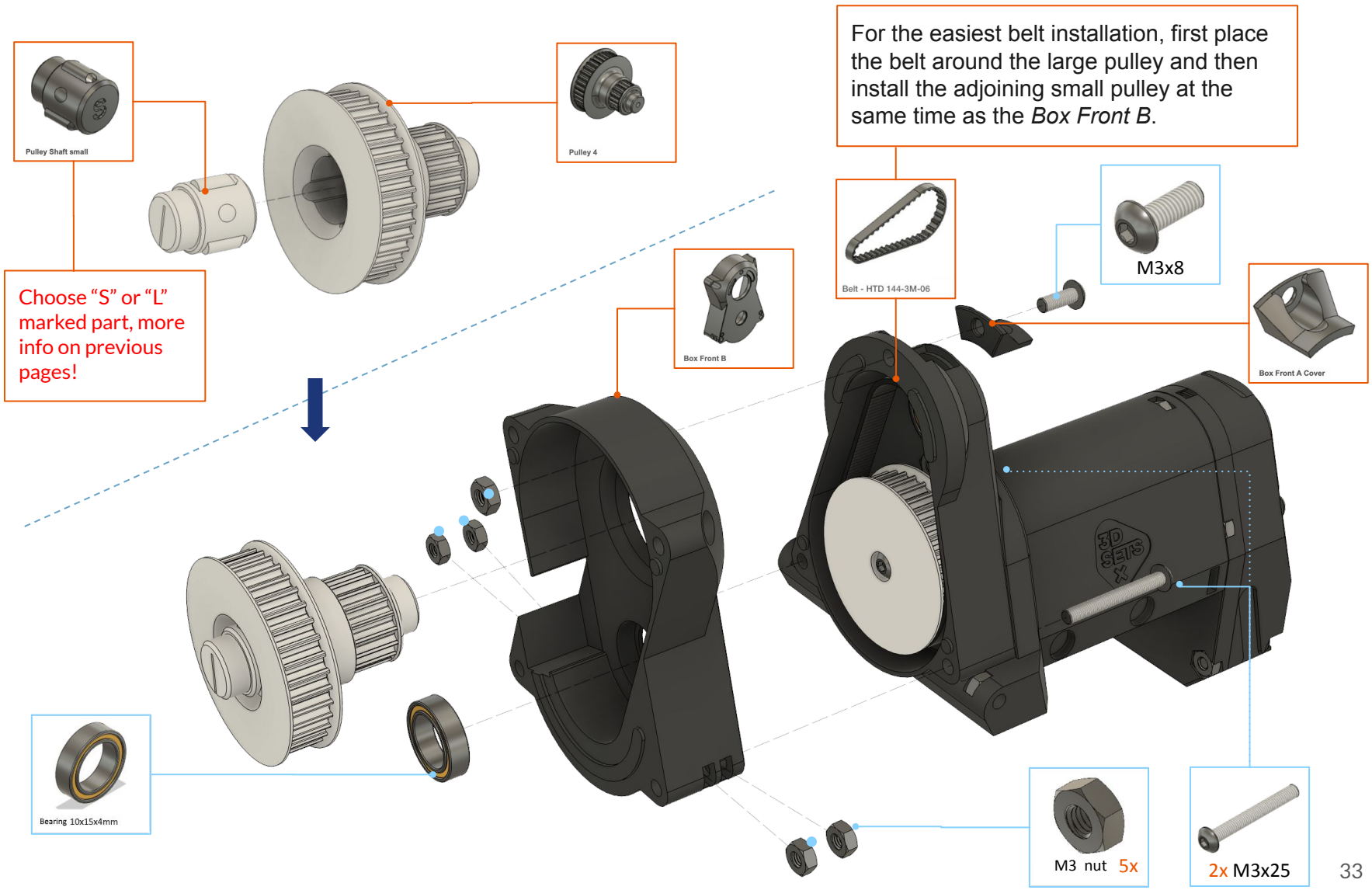
BeltDrive 4x4 Gearbox – step 2/9



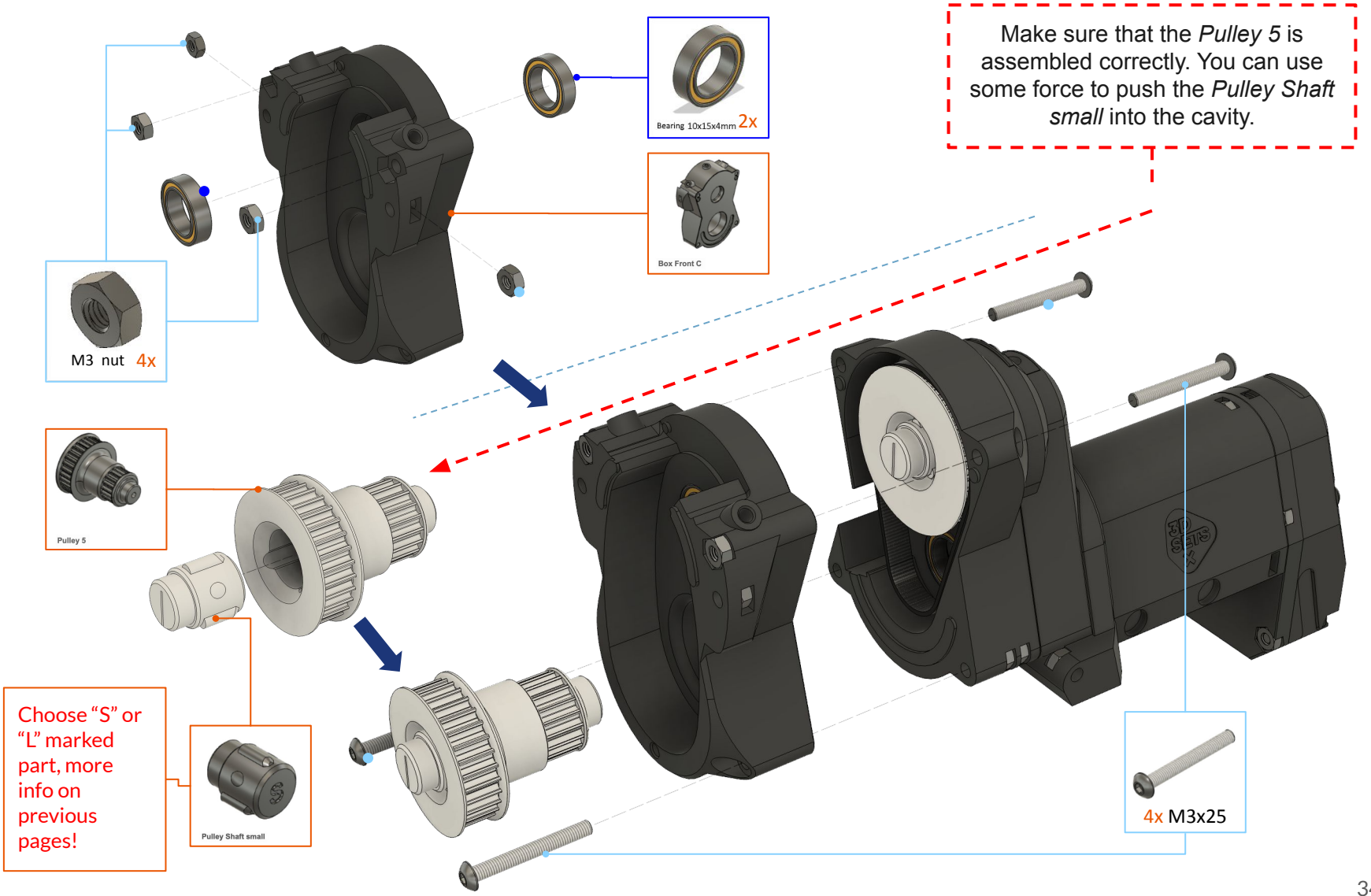
BeltDrive 4x4 Gearbox – step 3/9



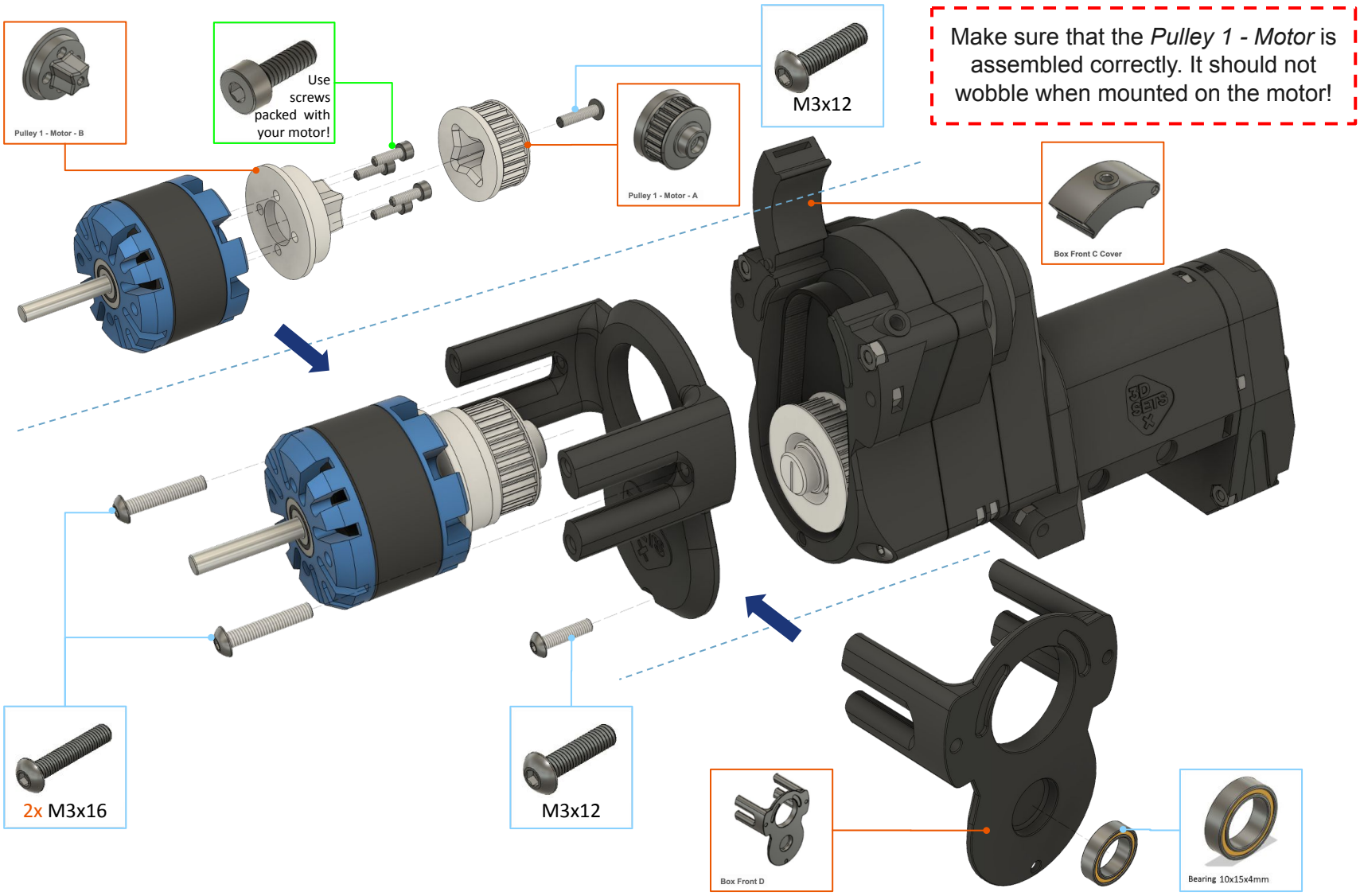
BeltDrive 4x4 Gearbox – step 4/9



BeltDrive 4x4 Gearbox – step 5/9

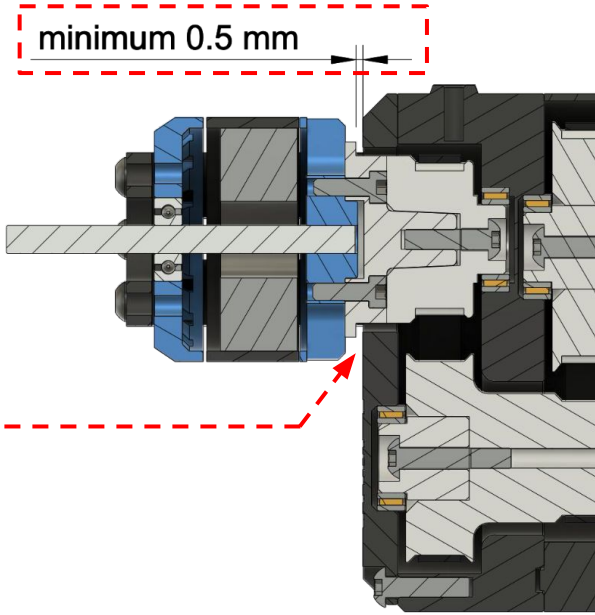


BeltDrive 4x4 Gearbox – step 6/9

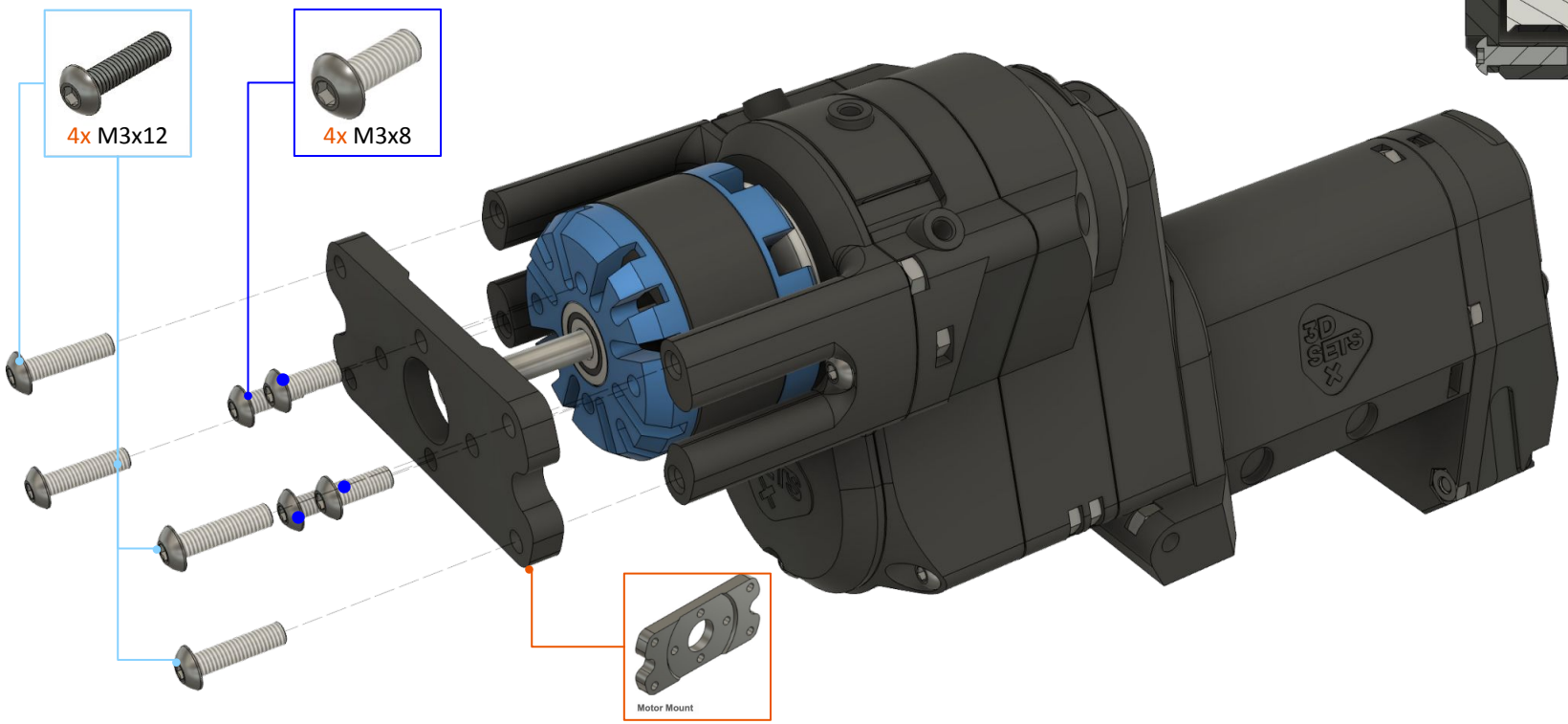


Make sure that the *Pulley 1 - Motor* is assembled correctly. It should not wobble when mounted on the motor!

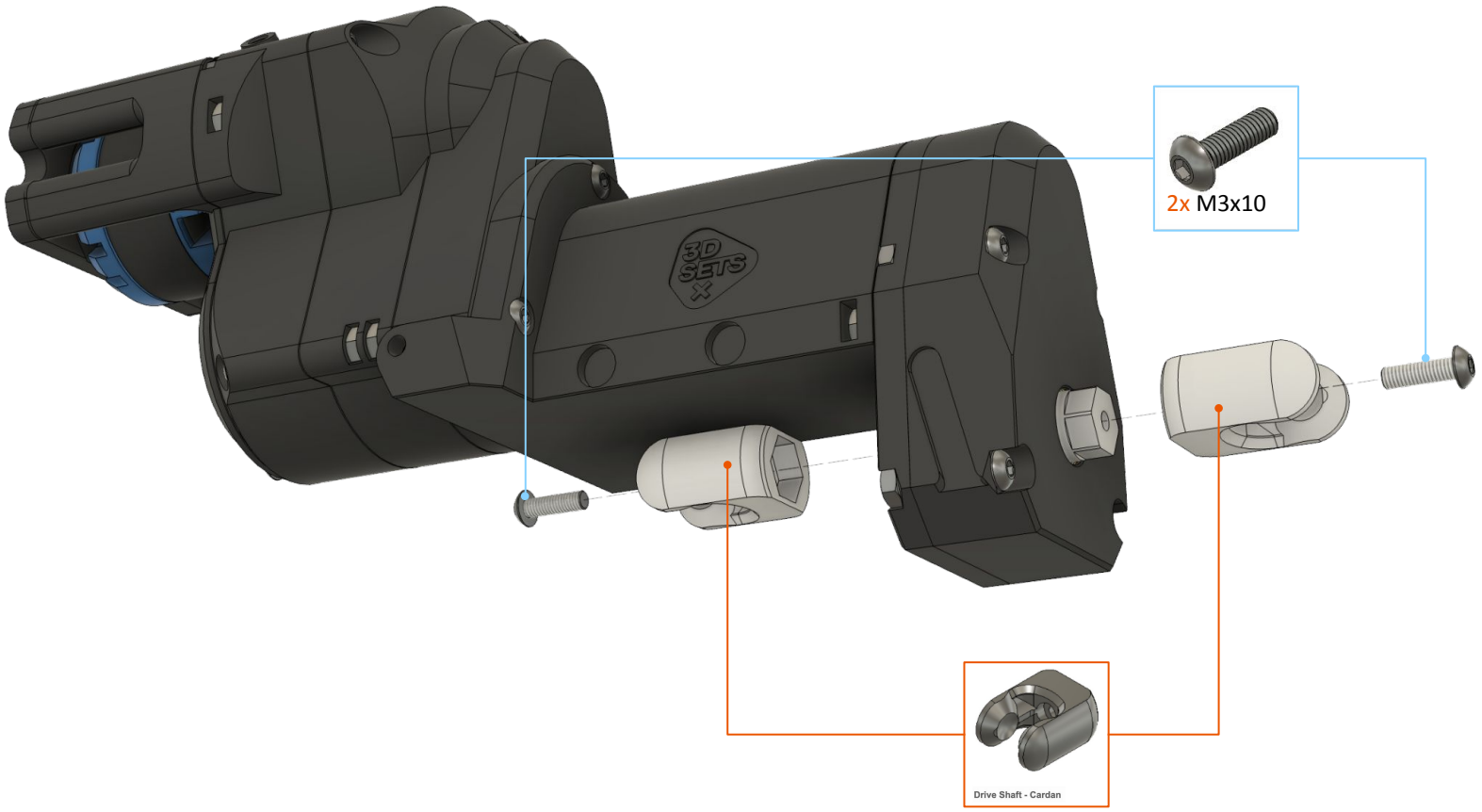
BeltDrive 4x4 Gearbox – step 7/9



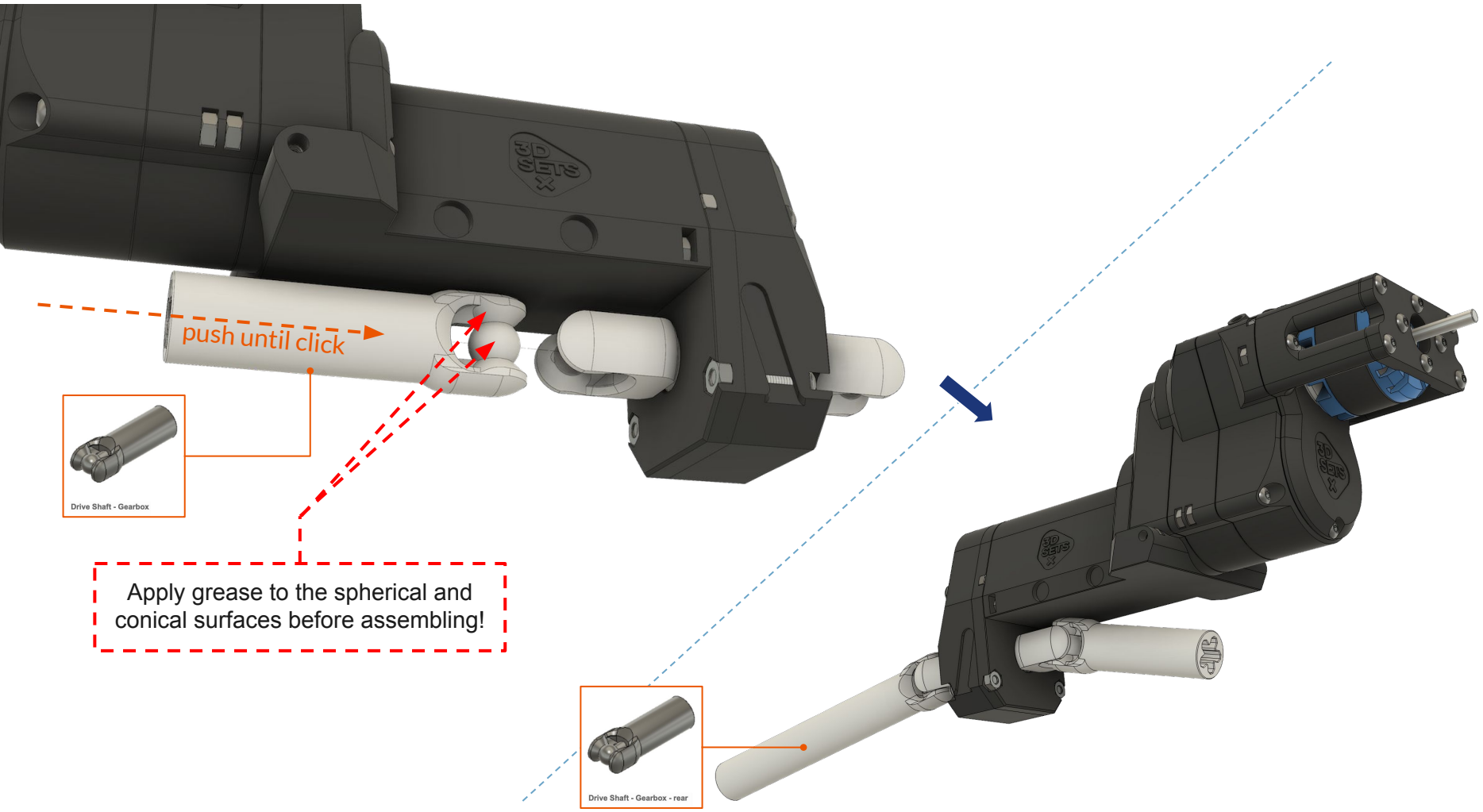
It is very important to check proper motor position - there must be **<u>0.5-1 mm clearance</u> between the *Pulley 1 - motor* rim and the *Box Front D***! If these parts are too close together, you can adjust their position by underlaying the *Motor Mount* with washers to achieve the correct clearance.



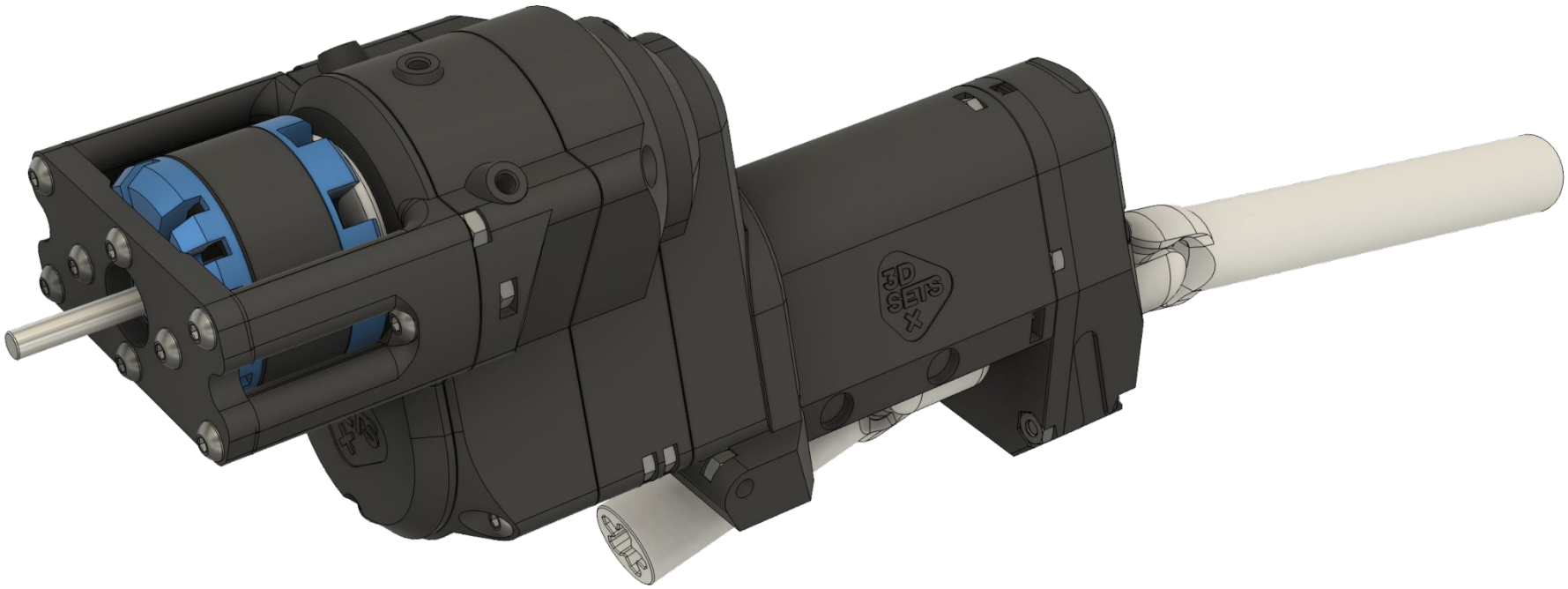
BeltDrive 4x4 Gearbox – 8/9



BeltDrive 4x4 Gearbox – 9/9



BeltDrive 4x4 Gearbox – finished

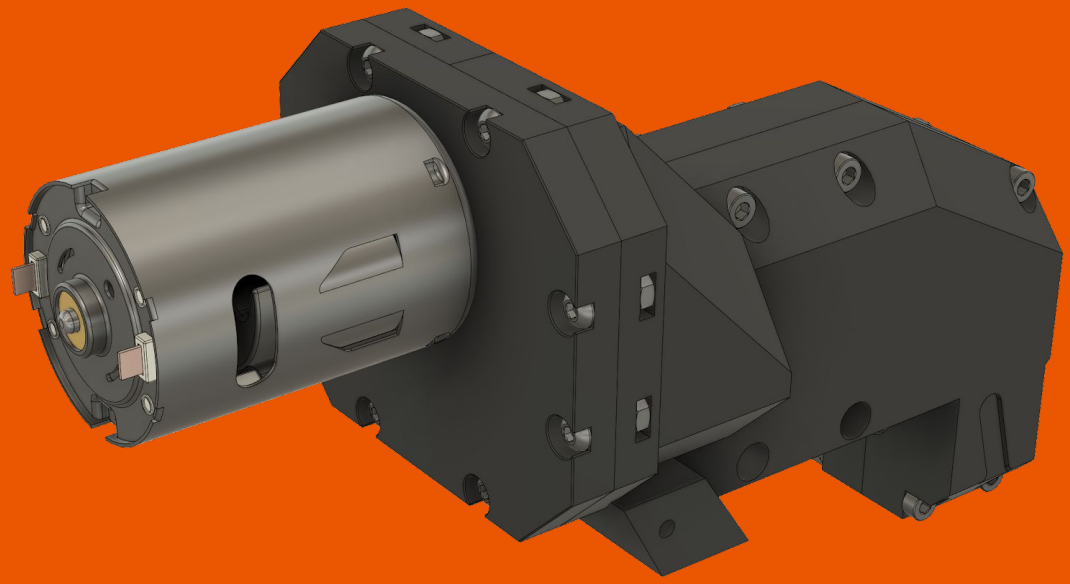


Geared Gearbox

In this 7-step procedure you will assemble the gearbox with the motor. To complete this task, get the following parts ready:

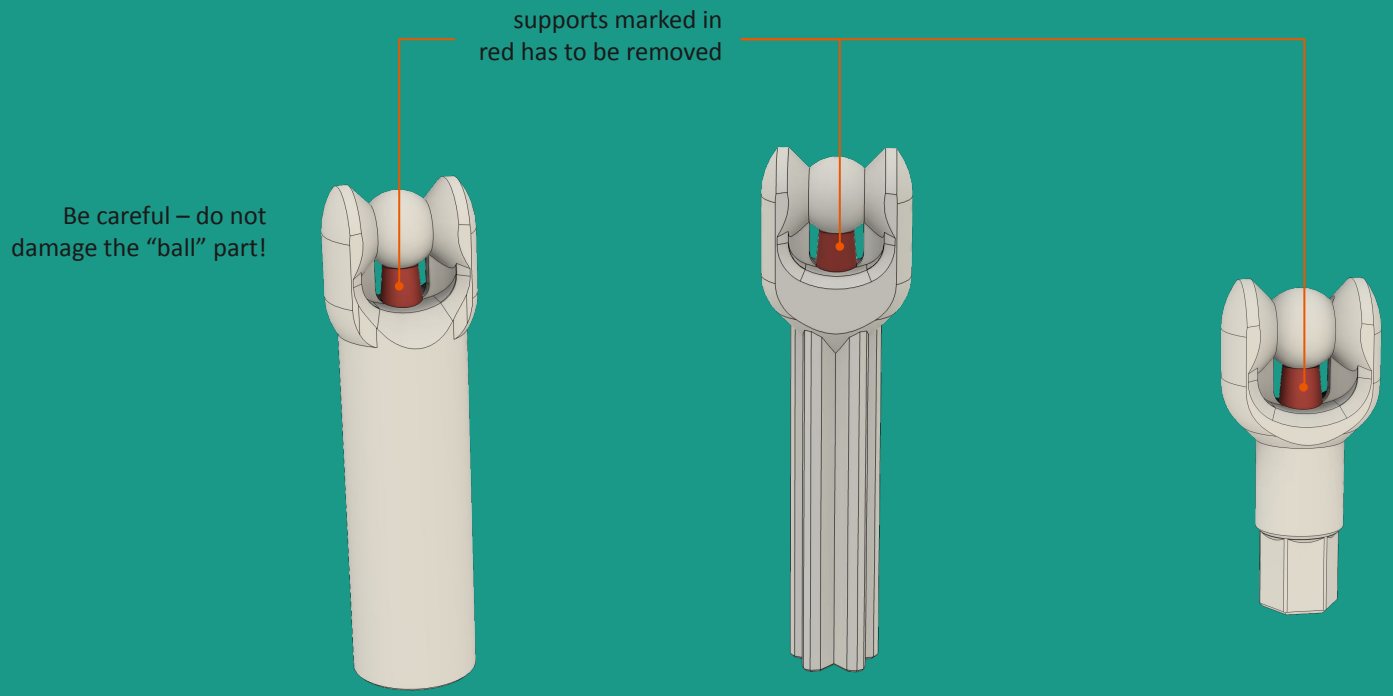
Non-printed parts:

- Screw M3x10: 12 pcs.
- Screw M3x25: 7 pcs.
- M3 locknuts: 7 pcs.
- M3 nuts: 10 pcs.
- M3x6 setscrew: 2pcs.
- Electric motor: 1 pc.
- Bearings: 12 pcs.
- Grease

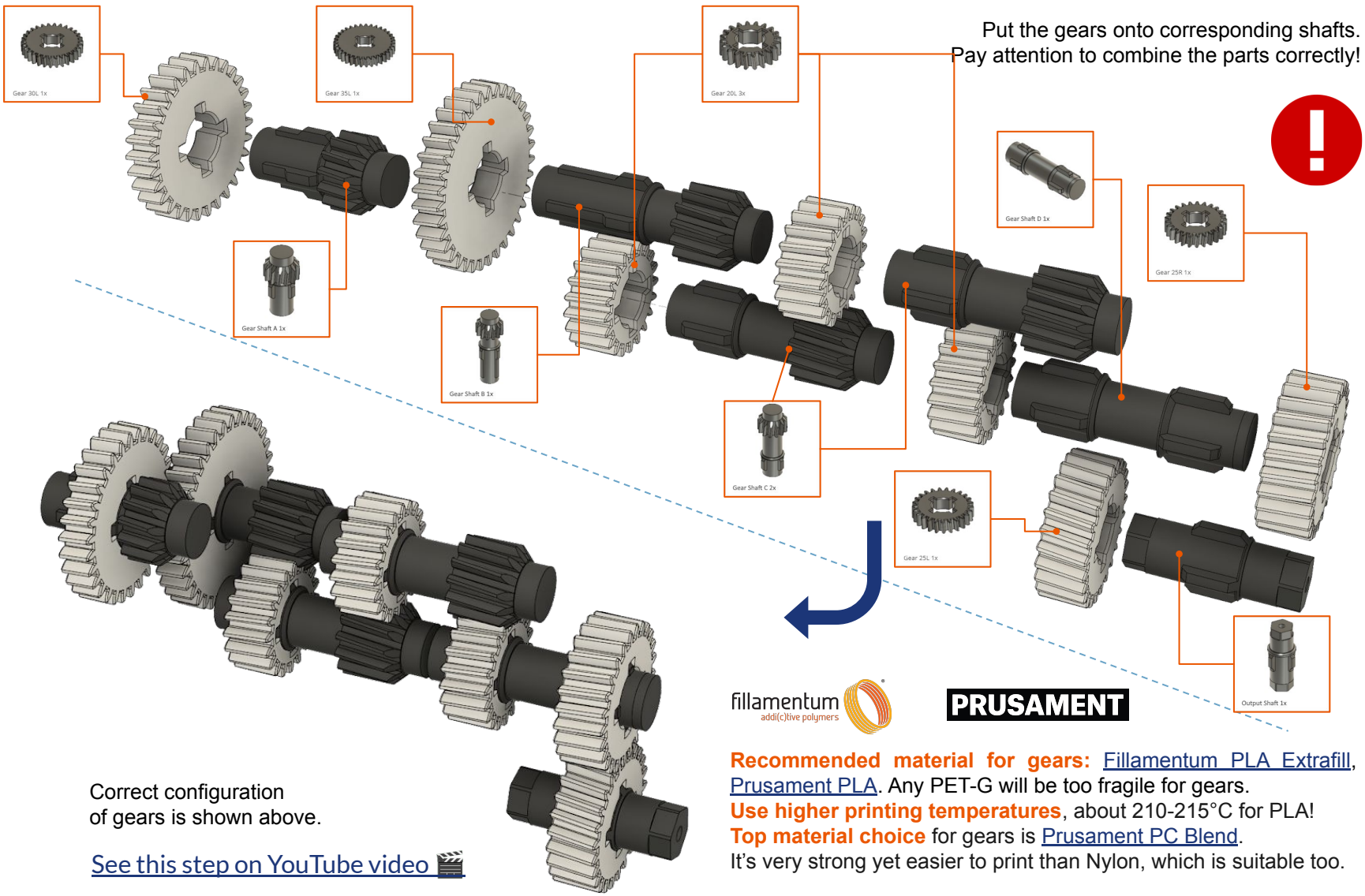


Postprocessing – removing supports

Before you start building, carefully remove printing supports (marked red) integrated to specific parts rendered below. You can use pliers and sharp knife to make the procedure easier. Be very careful as you can harm yourself!



Geared Gearbox – step 1/7



Put the gears onto corresponding shafts.
Pay attention to combine the parts correctly!

Correct configuration
of gears is shown above.

[See this step on YouTube video]

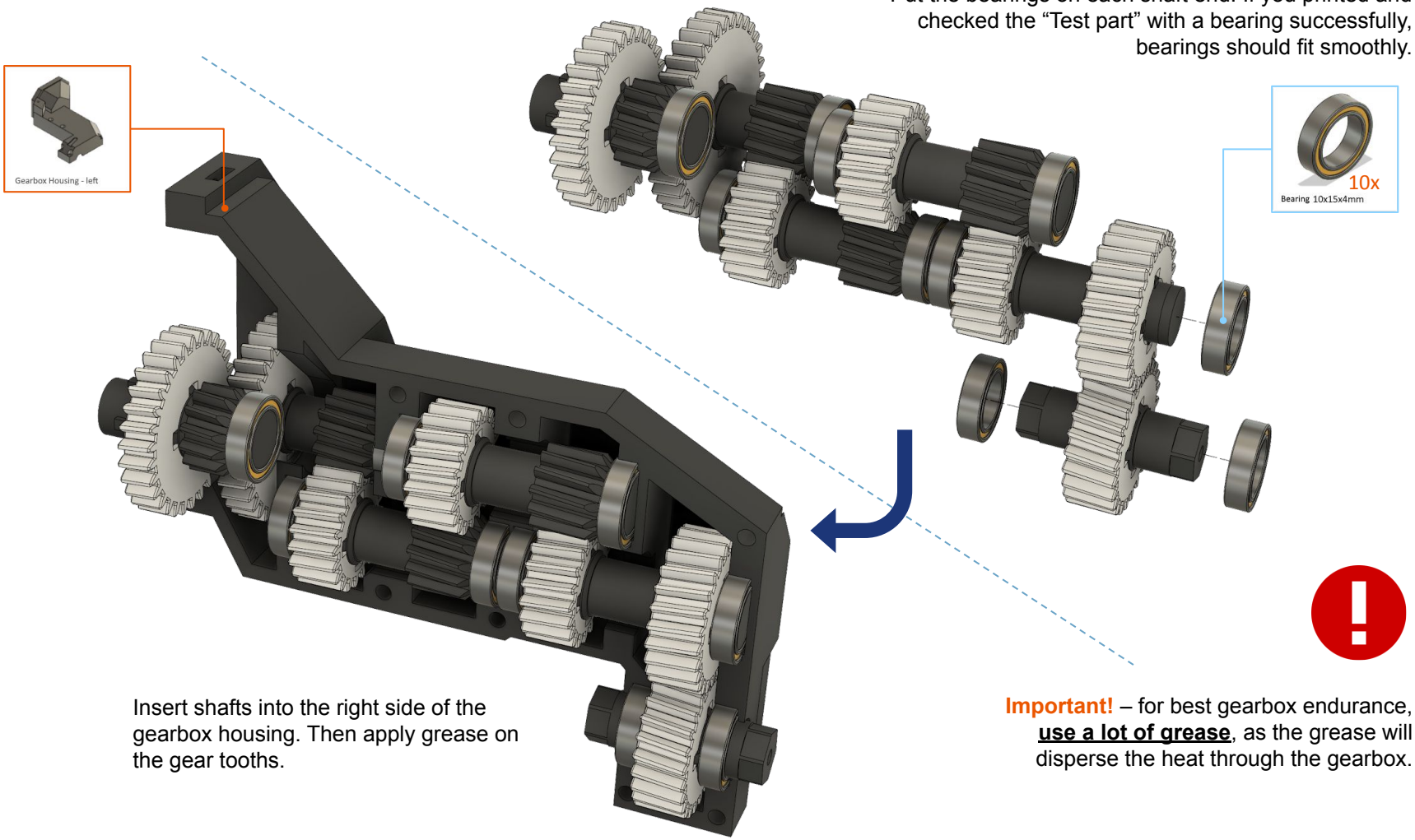
fillamentum addi(c)tive polymers

PRUSAMENT

Recommended material for gears: Fillamentum PLA Extrafill, Prusament PLA. Any PET-G will be too fragile for gears.
Use higher printing temperatures, about 210-215°C for PLA!
Top material choice for gears is Prusament PC Blend.
It's very strong yet easier to print than Nylon, which is suitable too.

Geared Gearbox – step 2-3/7

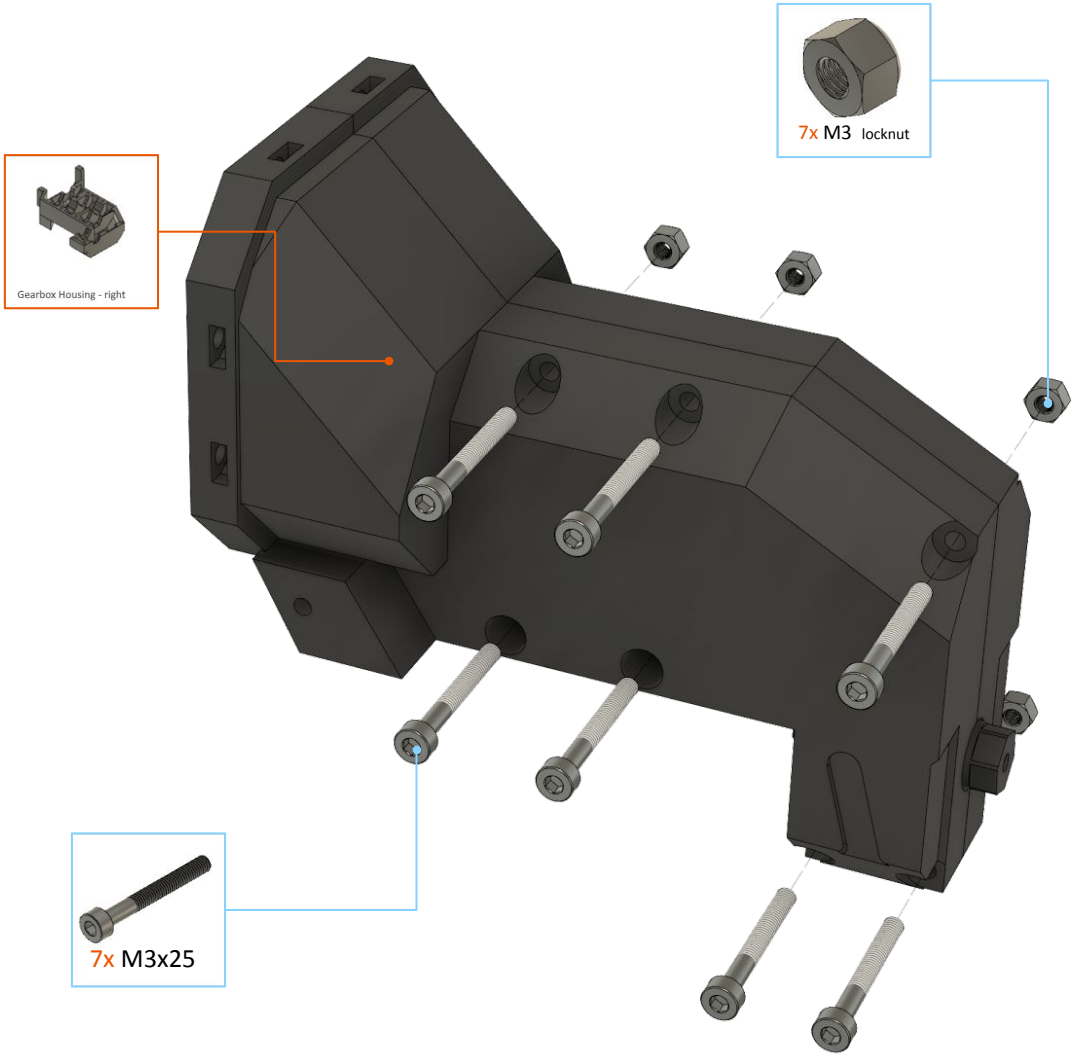
Put the bearings on each shaft end. If you printed and checked the “Test part” with a bearing successfully, bearings should fit smoothly.



Insert shafts into the right side of the gearbox housing. Then apply grease on the gear tooths.

Important! – for best gearbox endurance, **use a lot of grease**, as the grease will disperse the heat through the gearbox.

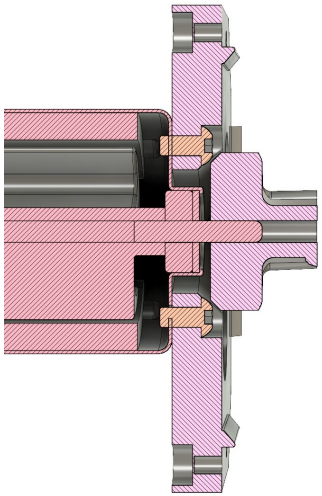
Geared Gearbox – step 4/7



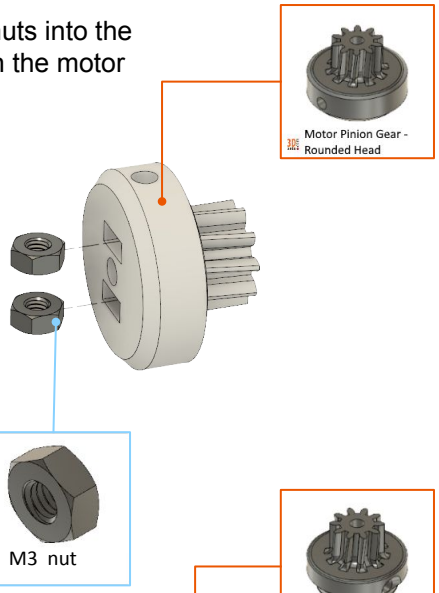
Geared Gearbox – step 5/7

Motor pinion – version A:

use this pinion if you are using “round head screws”

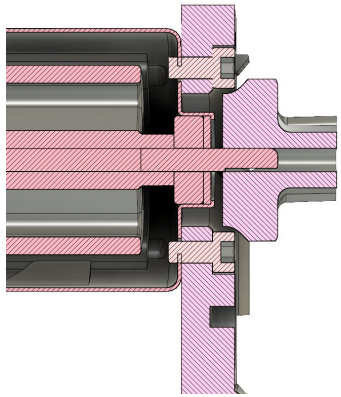


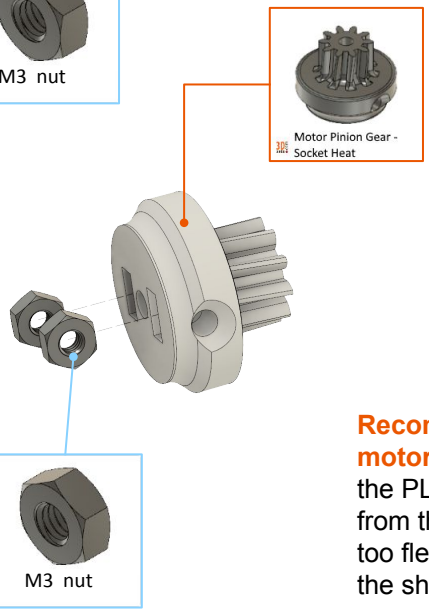
Insert nuts into the holes in the motor pinion.



Motor pinion – version B:

use this pinion if you are using “socket head screws”



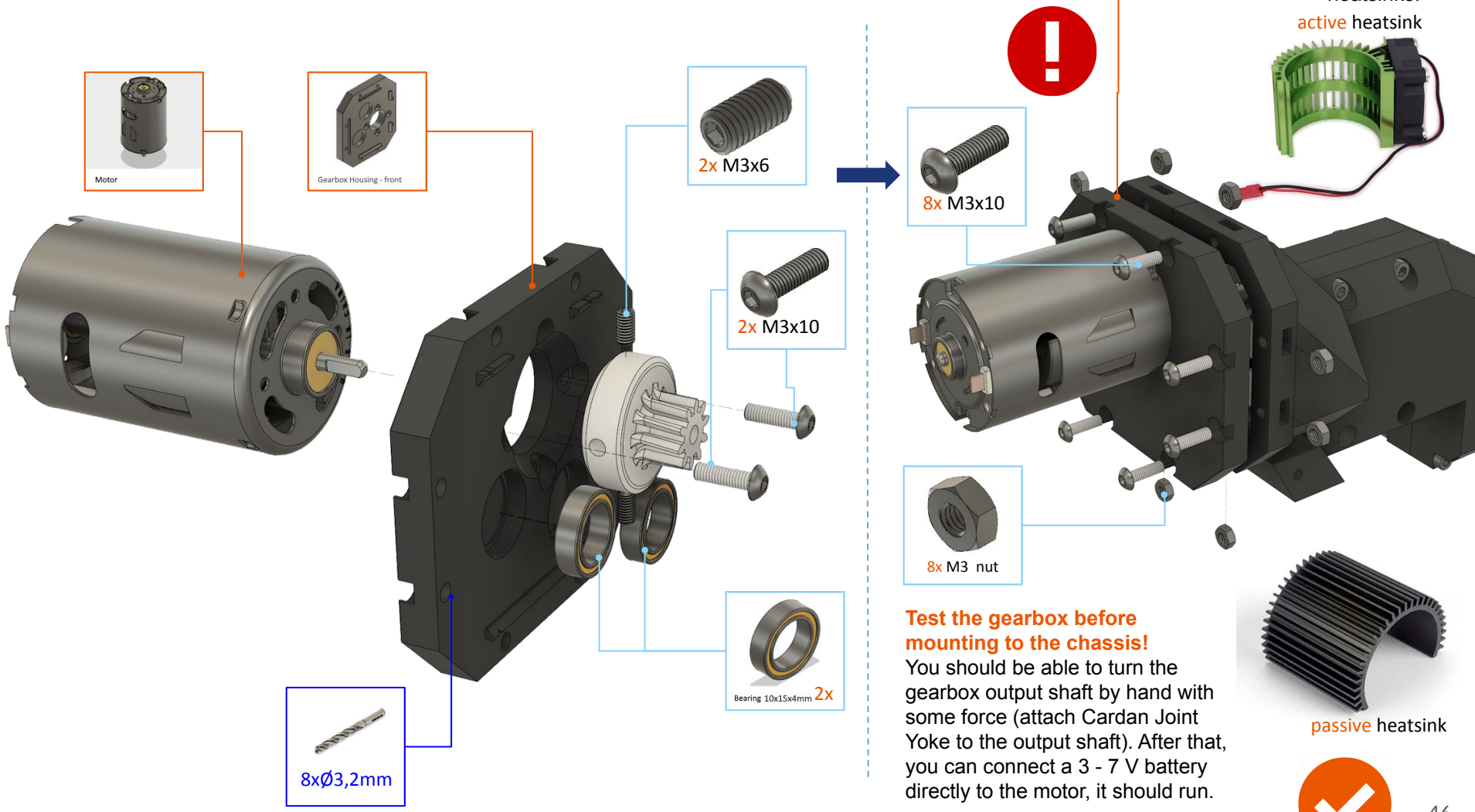


Recommended material for motor pinion: ABS or CPE, as the PLA can melt due the heat from the motor shaft and PET is too flexible (pinion will slip from the shaft).

Geared Gearbox – step 6-7/7

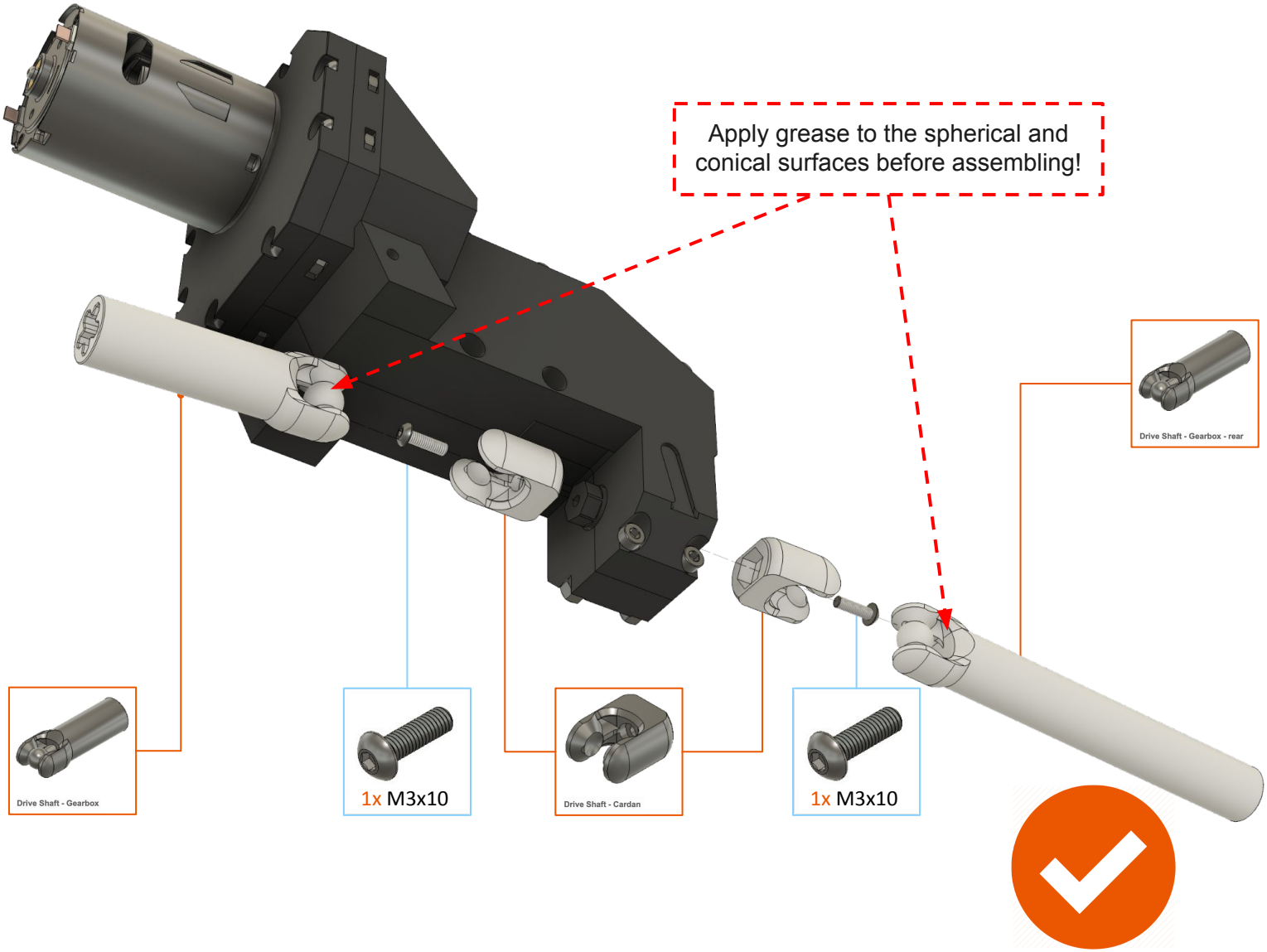
Now mount the motor and bearings to their positions.
Then install the motor pinion on motor shaft.

Recommended material for "Gearbox housing - front": ABS, ASA, CPE or PET-G, as the PLA can melt due to the heat from the motor if you drive continuously or in warm weather. It is strongly recommended to install an optional motor heatsink, preferably active! Purchase links are **here** or use any similar heatsinks.



Test the gearbox before mounting to the chassis!
You should be able to turn the gearbox output shaft by hand with some force (attach Cardan Joint Yoke to the output shaft). After that, you can connect a 3 - 7 V battery directly to the motor, it should run.

Geared Gearbox – step 8/8



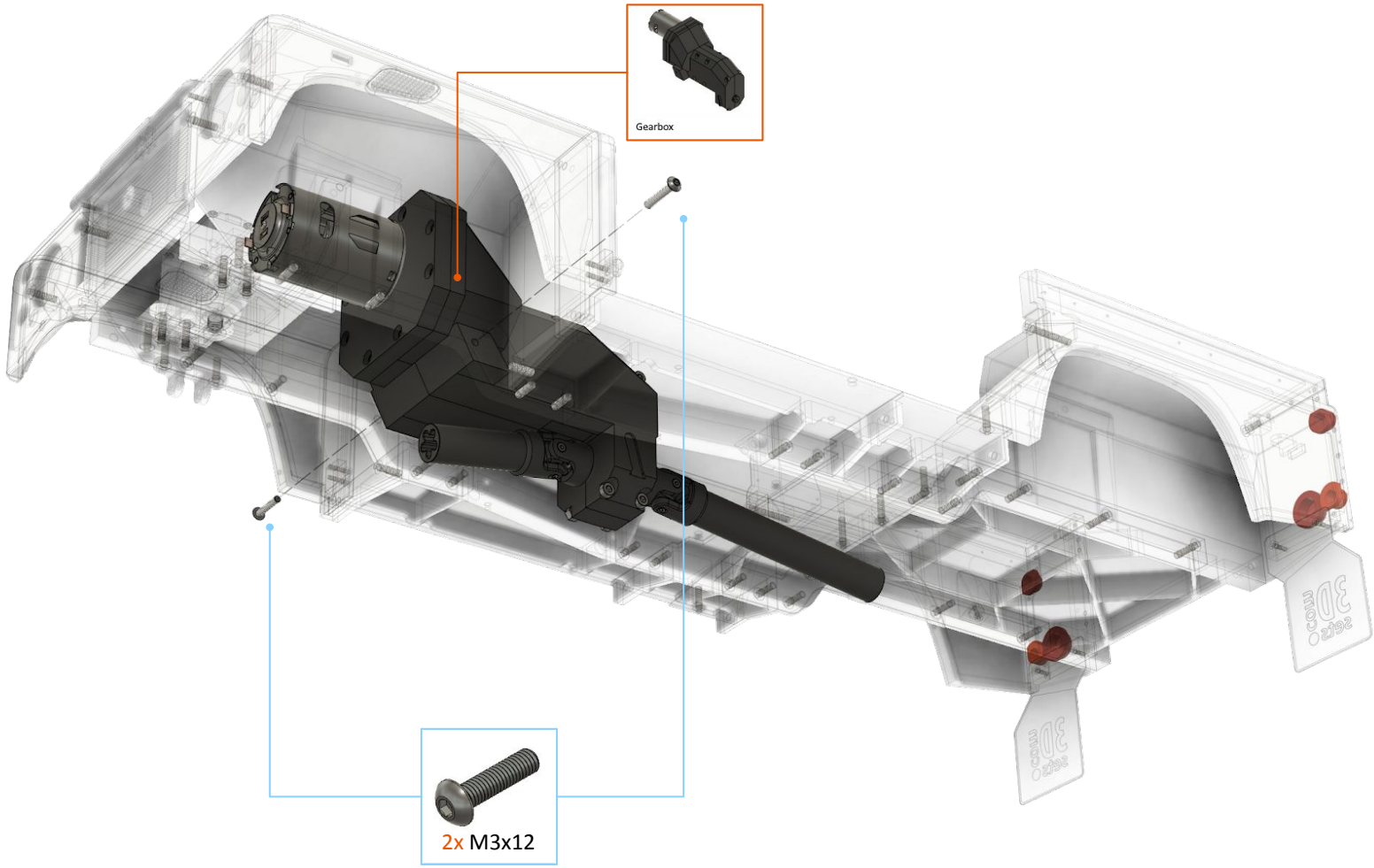
Pickup Upgrade for Model 5: gearbox installation

In this simple 1-step procedure you will install Gearbox in the center of the chassis.

Required non-printed parts:

- Screw M3x12: 2 pcs.

Pickup Upgrade for Model 5: step 1/1



Subassembly #2 – Arms

In this 3-step procedure you will assemble axle arms, steering rods and trackbar. These parts consists of “arm” and “ball joints” and they need to be pressed together.

Non-printed parts:

- Grease
- Any Hammer or Vise (for pressing)

Arms + Ball joints

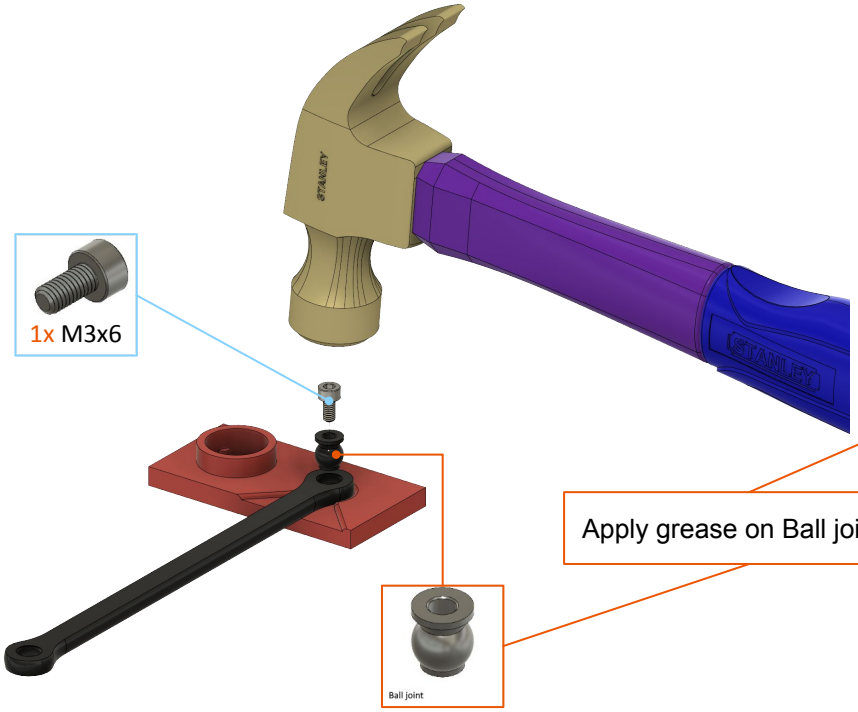
Press Ball joints in arms end. Pay attention to combine parts correctly!
Ball joints require correct orientation on specific arms – check next page!

Option A: use a hammer

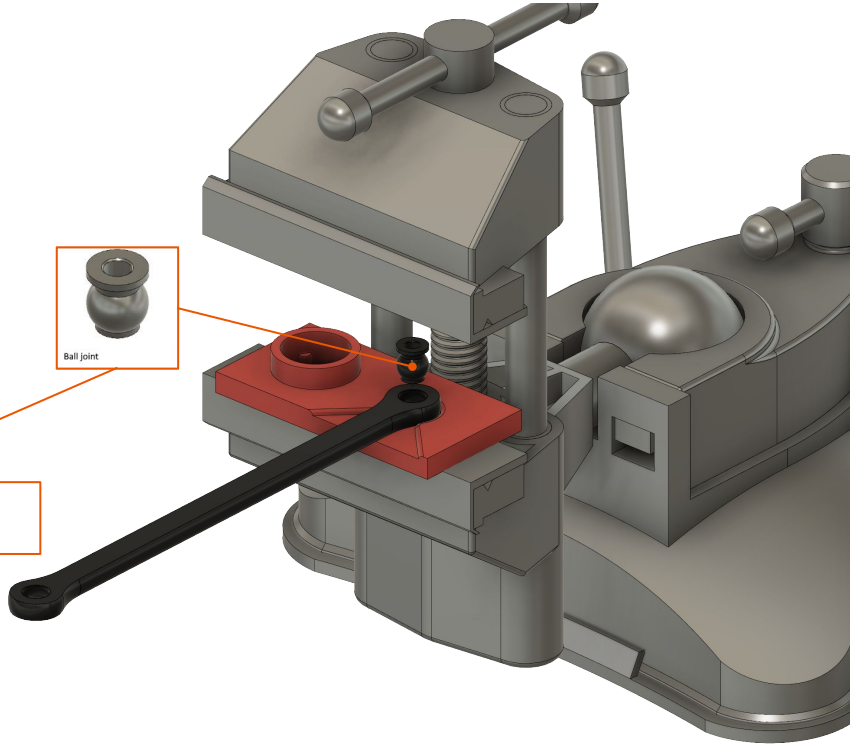
Be careful as you can break the arm if you use too much force!

Option B: use a Vise

This is a prefered method as you can proceed slowly.



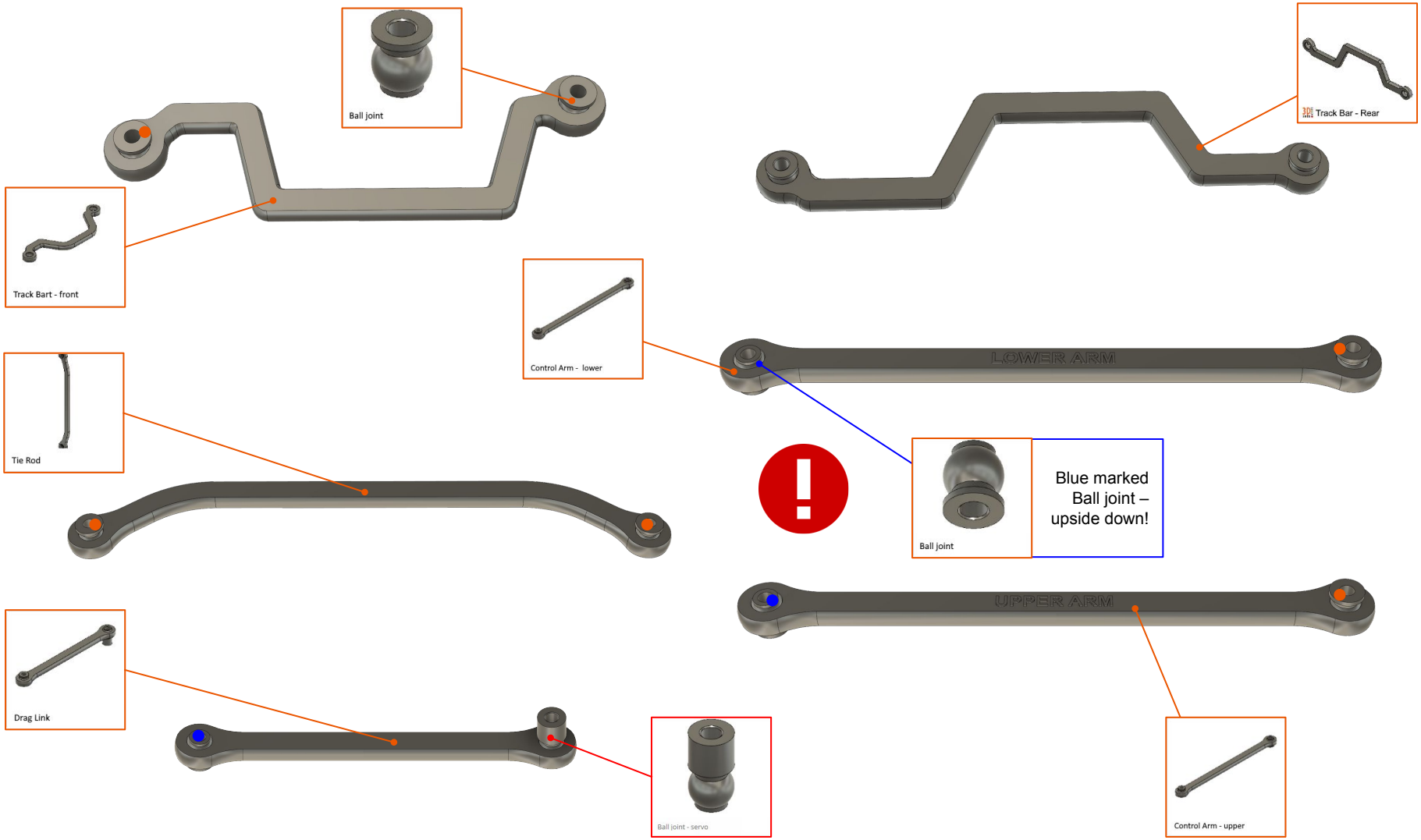
Apply grease on Ball joint.



See this step on YouTube video

Arms + ball joints

On the pictures below are rendered final Arms assemblies. Please note that some Arms requires opposite Ball joint orientation!



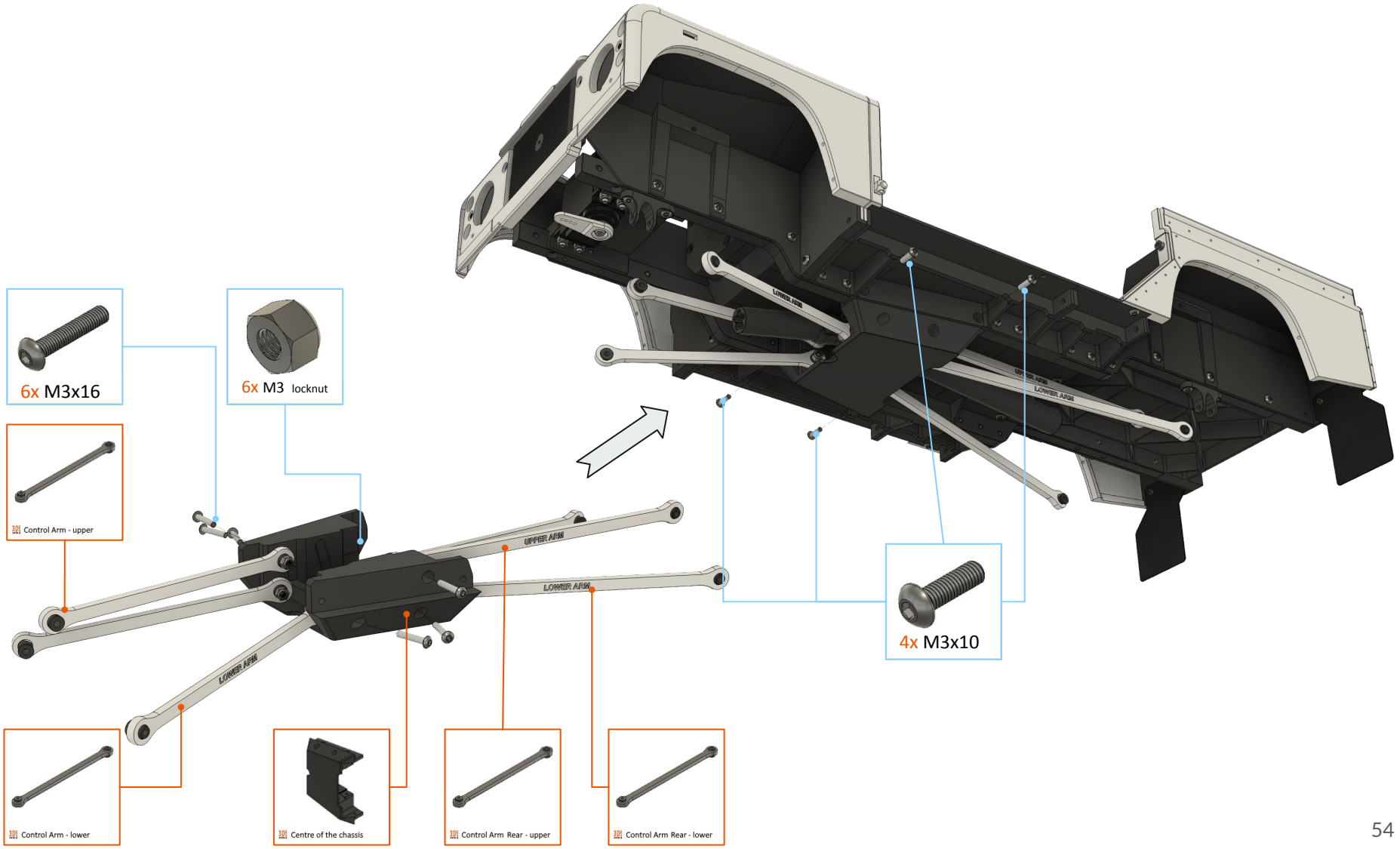
Pickup Upgrade for Model 5: Arms installation

In this simple 2-step procedure you will install arms in the center of the chassis.

Required non-printed parts:

- Screw M3x16: 8 pcs.
- Screw M3x10: 4 pcs.
- M3 locknuts: 8 pcs.

Pickup Upgrade for Model 5: step 1-2/2



Pickup Upgrade for Model 5: Electronics and Seats

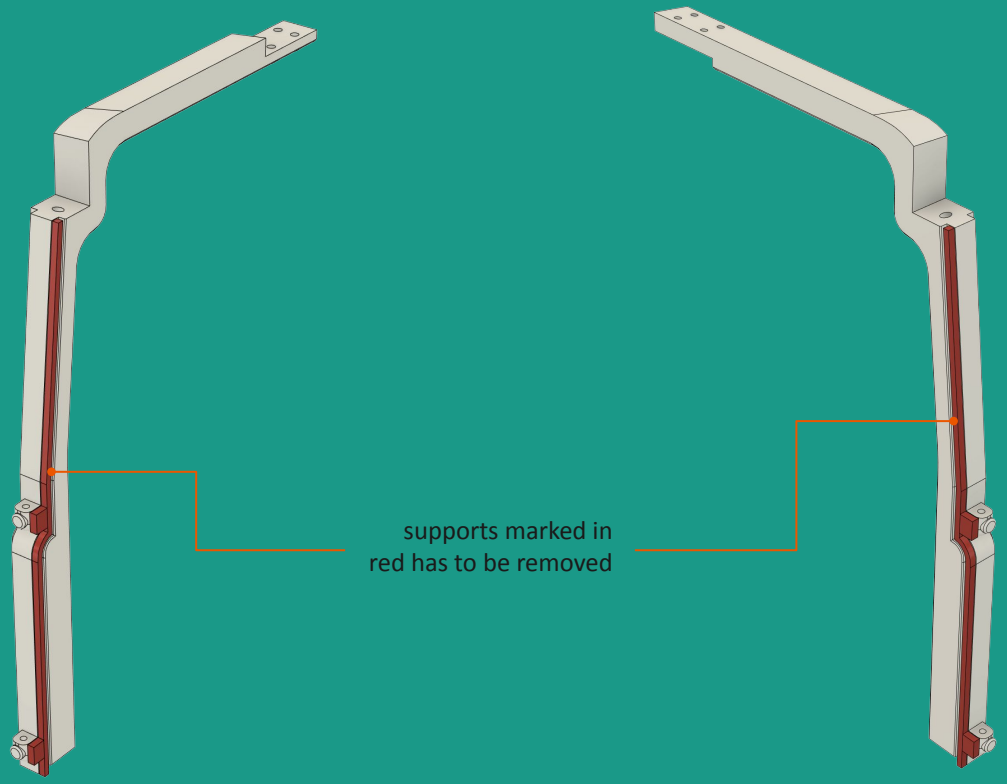
In this 4-step procedure, you will install all electronic equipment and cables. Then you will mount seats on their positions.

Non-printed parts:

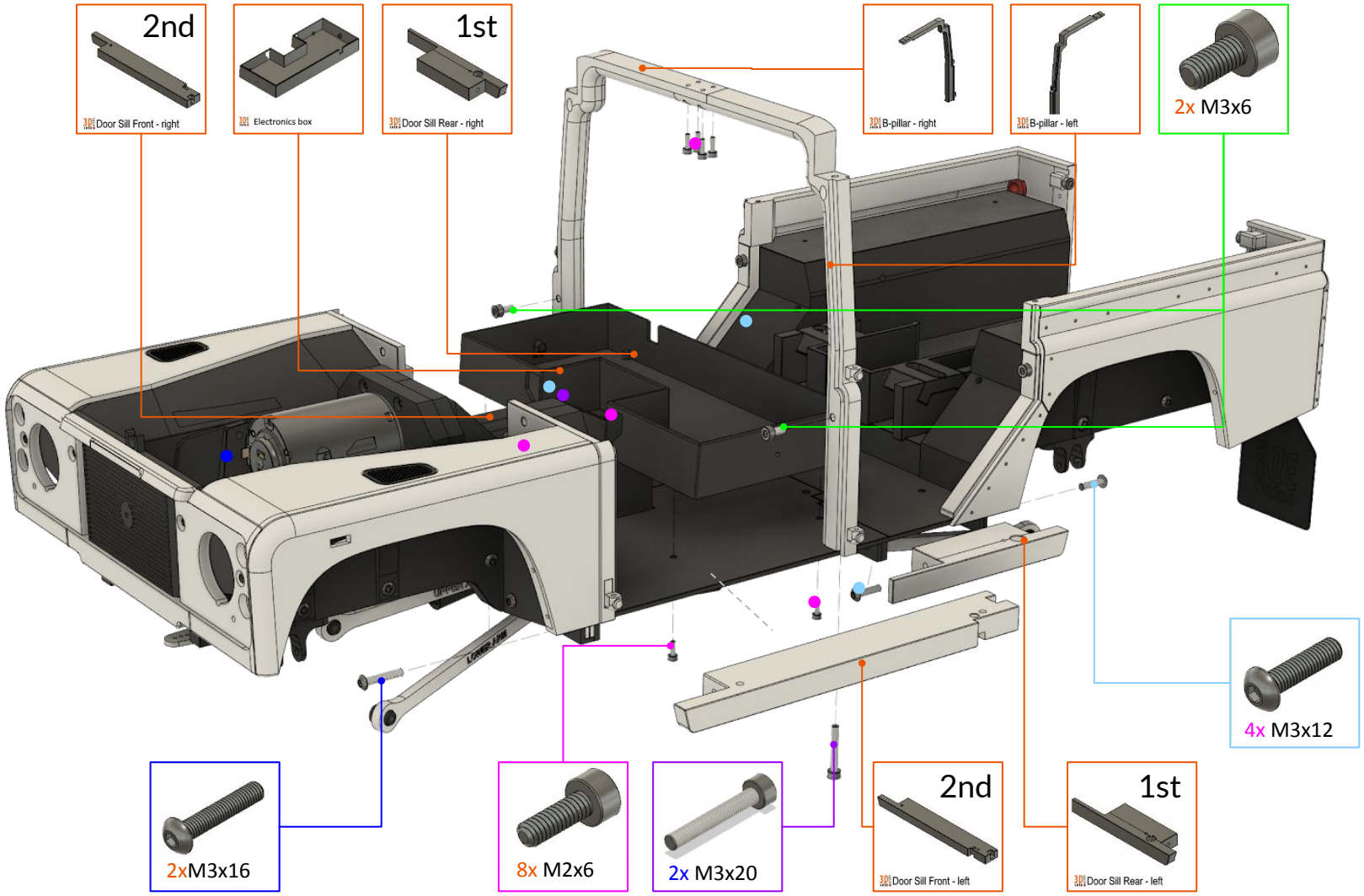
- Screw M2x6: 17 pcs.
- Screw M3x6: 4 pcs.
- Screw M3x6 Socket head: 2pcs.
- Screw M3x12: 4 pcs.
- Screw M3x16: 4 pcs.
- Screw M3x20: 6 pcs.
- RC Receiver
- ESC (speed controller)
- Cables
- connectors

B-pillar – postprocessing

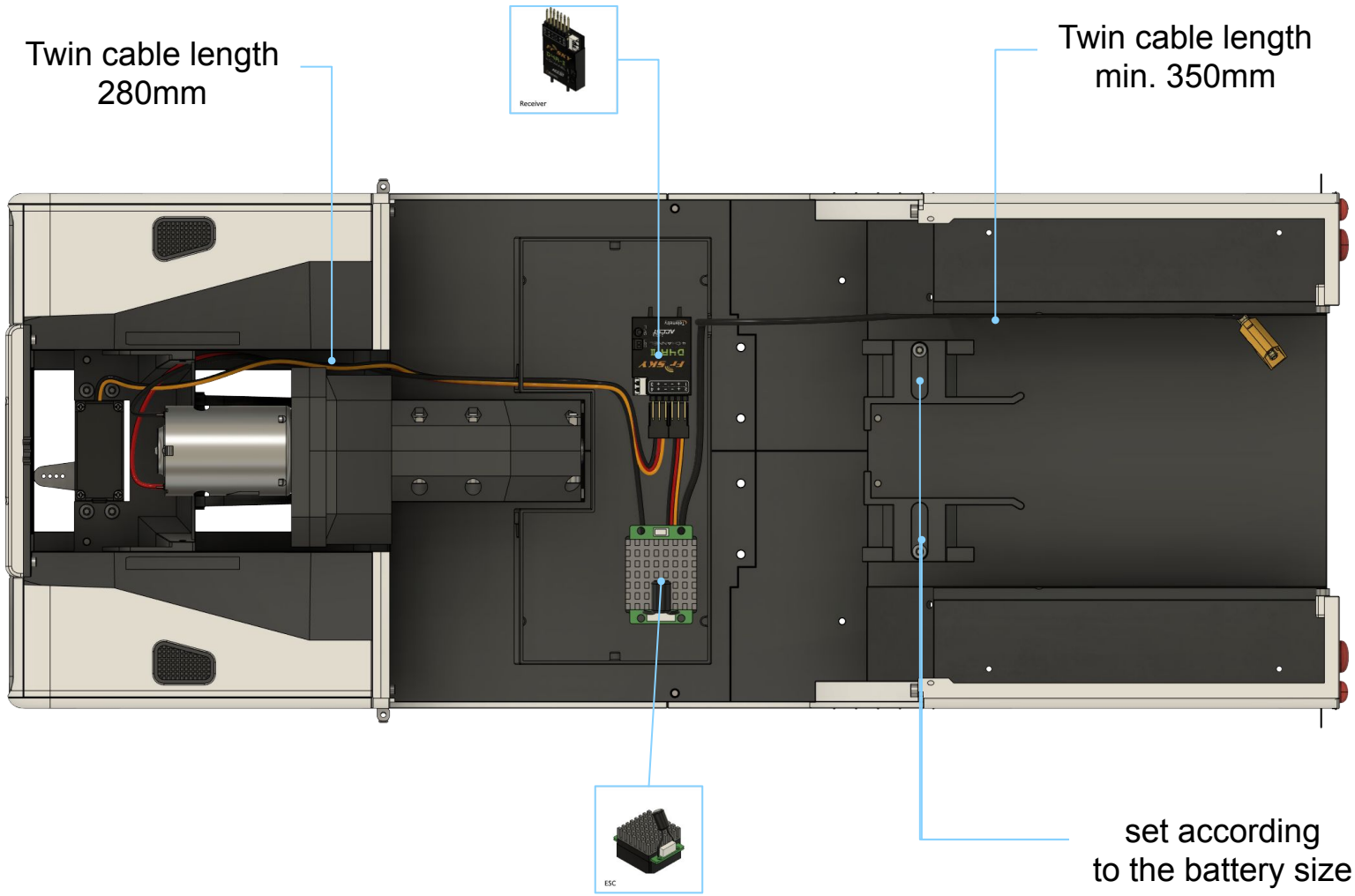
Before you start building B-pillar, carefully remove printing supports (marked red) integrated to specific parts rendered below. You can use pliers and a sharp knife to make the procedure easier. Be very careful as you can harm yourself!



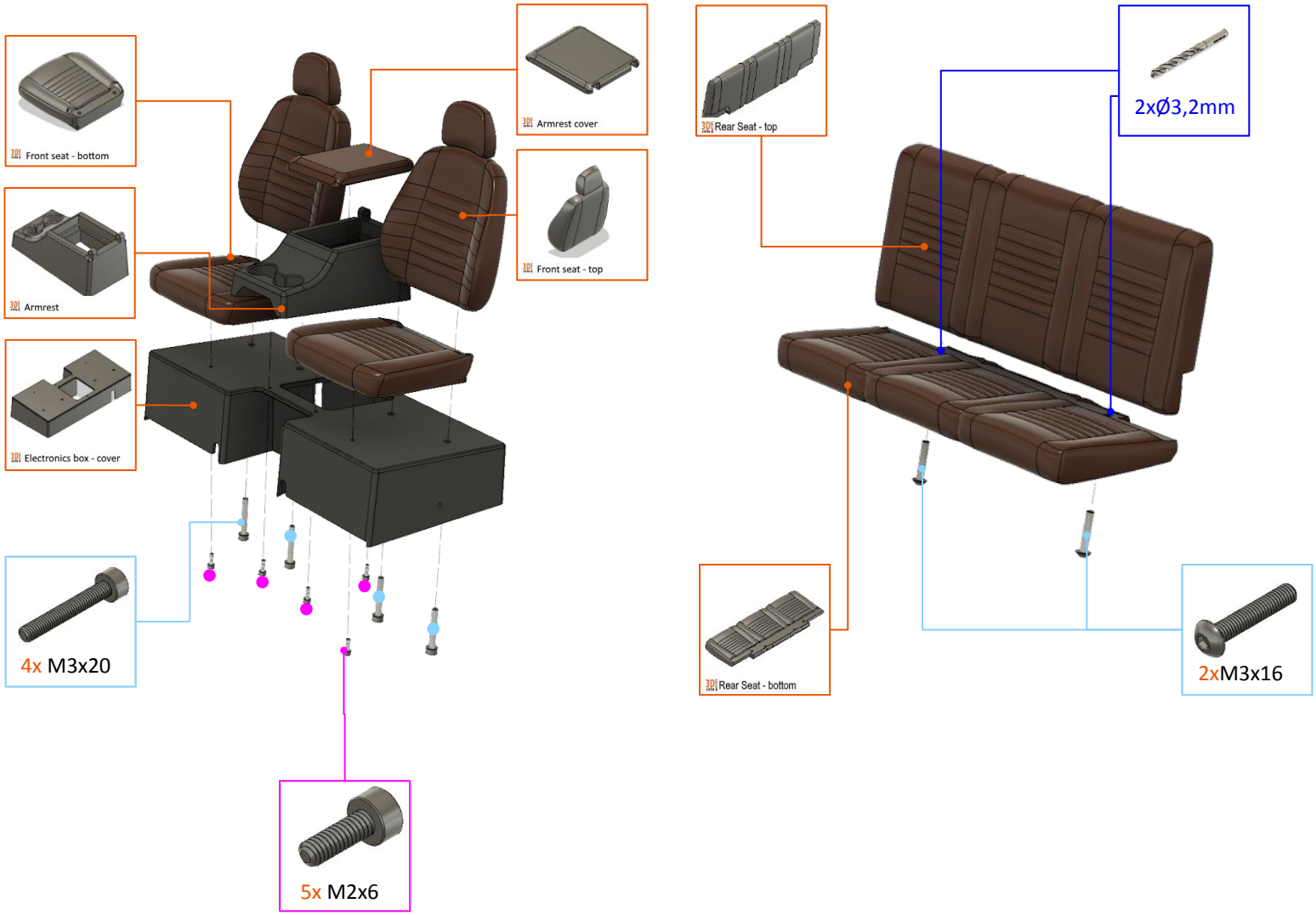
Pickup Upgrade for Model 5 - step 1/5



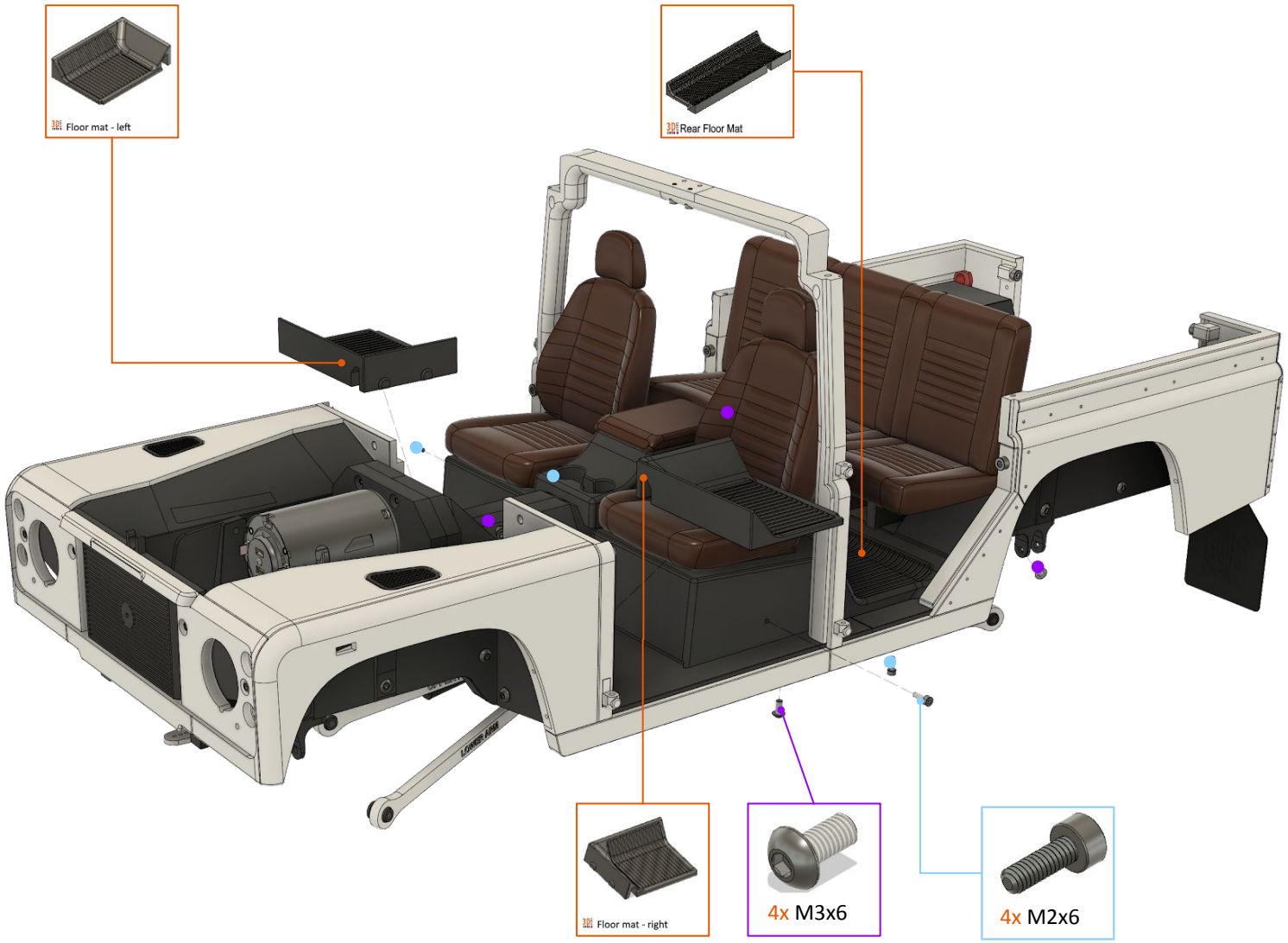
Pickup Upgrade for Model 5 - step 2/5



Pickup Upgrade for Model 5 - step 3-4/5



Pickup Upgrade for Model 5 - step 5/5



Subassembly #3 – Windshield

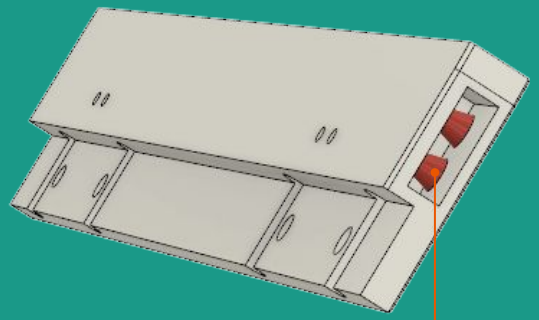
In this 2-step procedure, you will assemble windshield. To complete this task, get ready all necessary parts:

Non-printed parts:

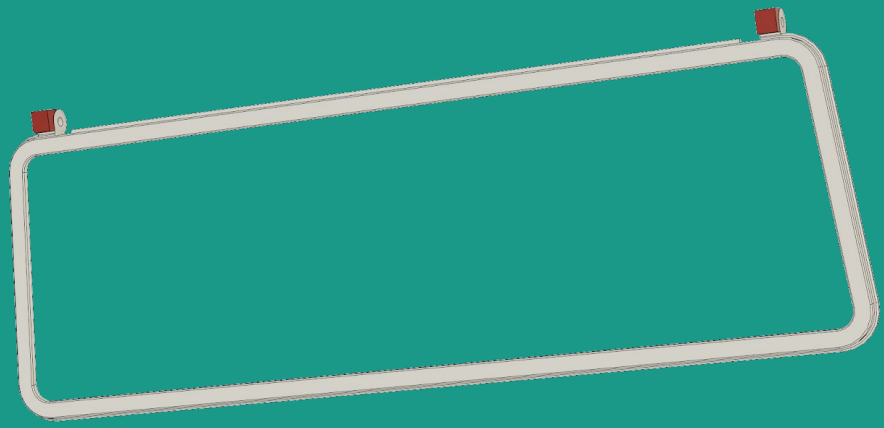
- Screw M2x6: 6 pcs.
- Screw M2x10: 4 pcs.
- Screw M3x12: 2 pcs.
- Clear Binding Covers, or any clear foil up to 0,4 mm thick

Windshield – postprocessing

Before you start building Windshield, carefully remove printing supports (marked red) integrated to specific parts rendered below. You can use pliers and a sharp knife to make the procedure easier. Be very careful as you can harm yourself!



supports marked in red has to be removed

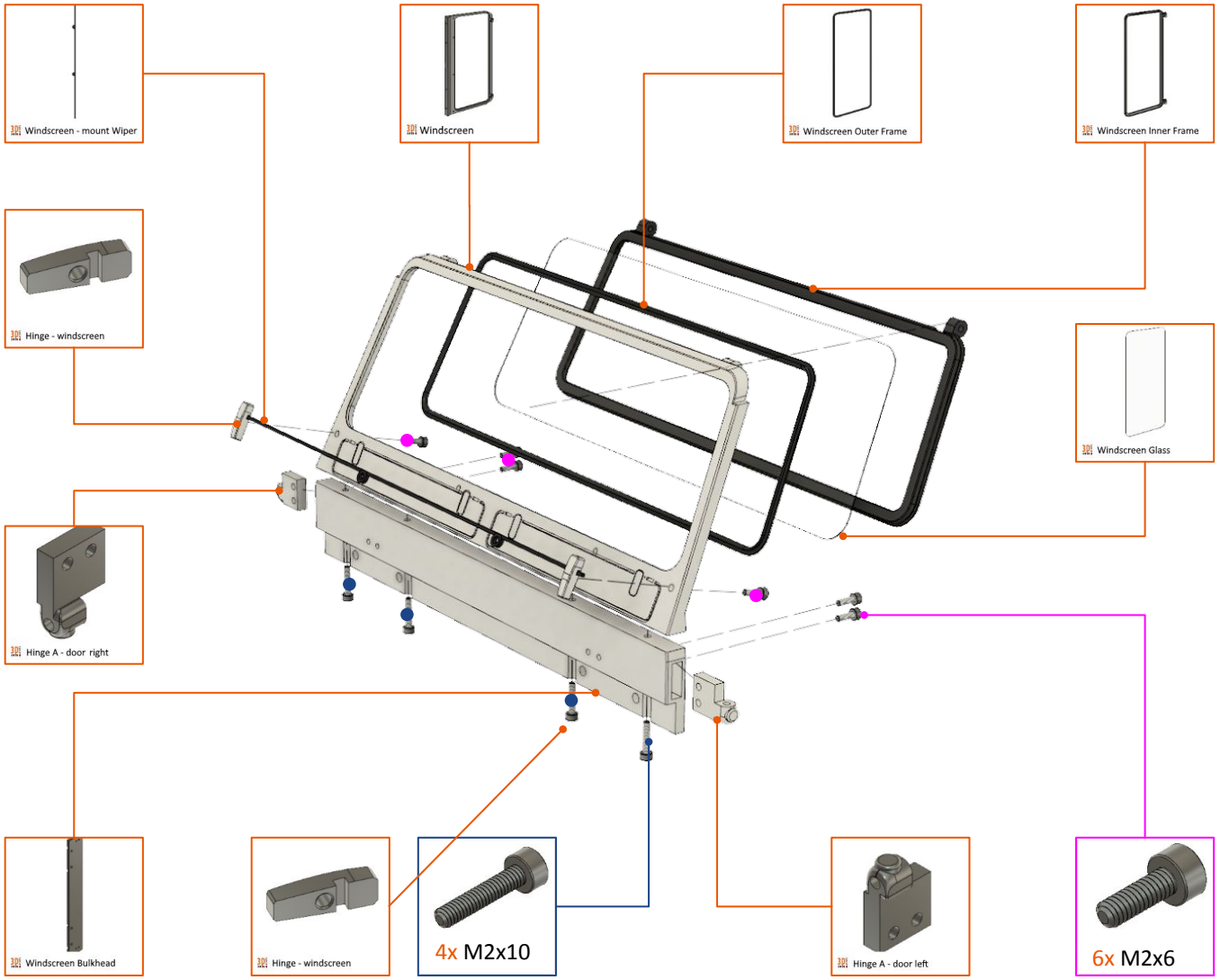


Windshield - step 1/3

At first, you will make a “windscreen glass” from any transparent foil up to 0.4 mm thick. Thicker material is more durable than thinner, but we found that “Clear Binding Covers” are OK.

Place the Windscreen Inner Frame on the foil, sketch the Windscreen Glass to foil and then cut the Windscreen glass by scissors or sharp knife.

Windshield - step 2/3



Windshield - step 3/3

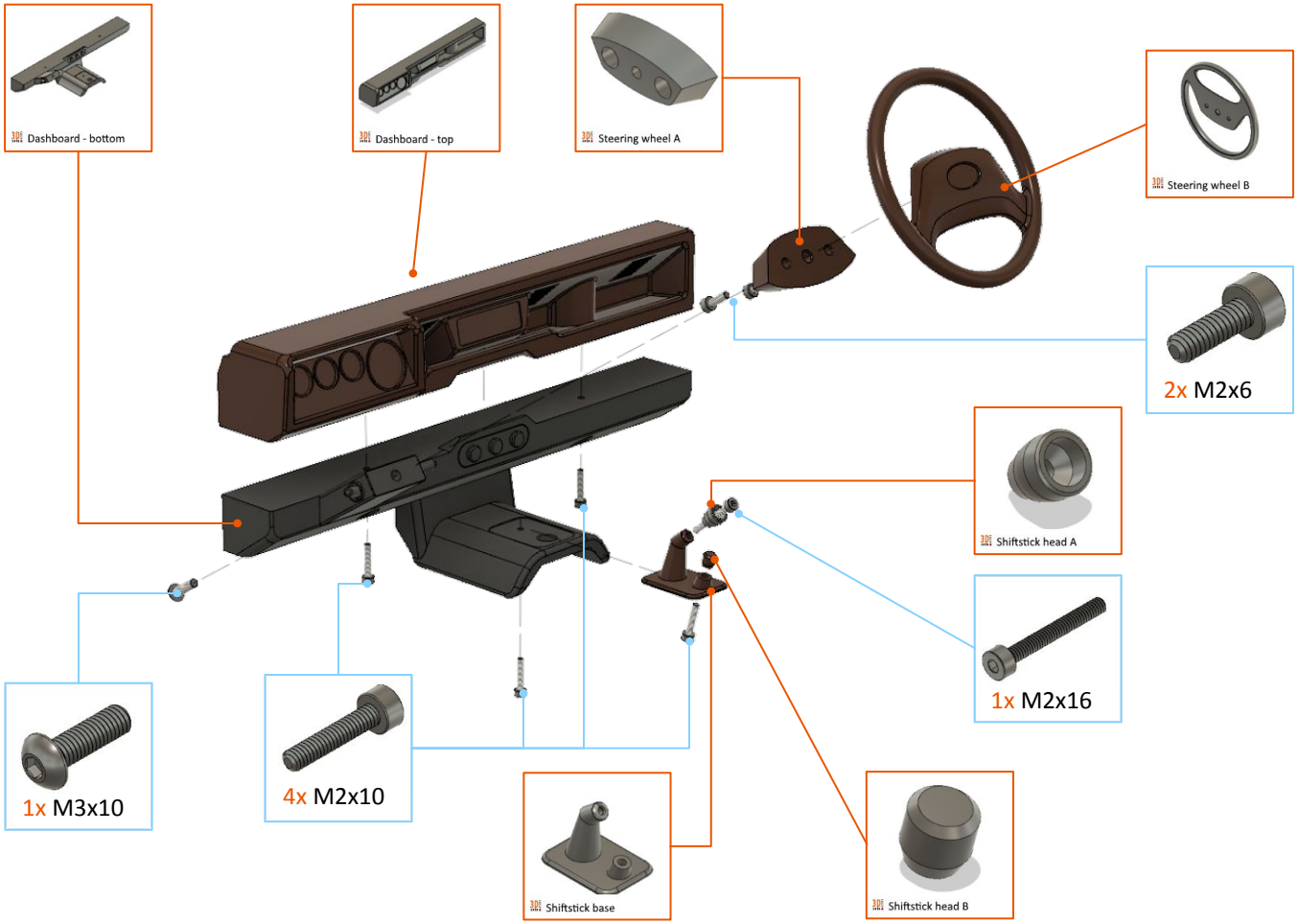
Subassembly #4 – Dashboard

In this 2-step procedure, you will assemble dashboard. To complete this task, get ready all necessary parts:

Non-printed parts:

- Screw M2x6: 2 pcs
- Screw M2x10: 4 pcs.
- Screw M2x16: 3 pcs.
- Screw M3x10: 1 pcs.
- Screw M3x16: 2 pcs.

Pickup Upgrade for Model 5 – Dashboard 1/2



Pickup Upgrade for Model 5 – Dashboard 2/2

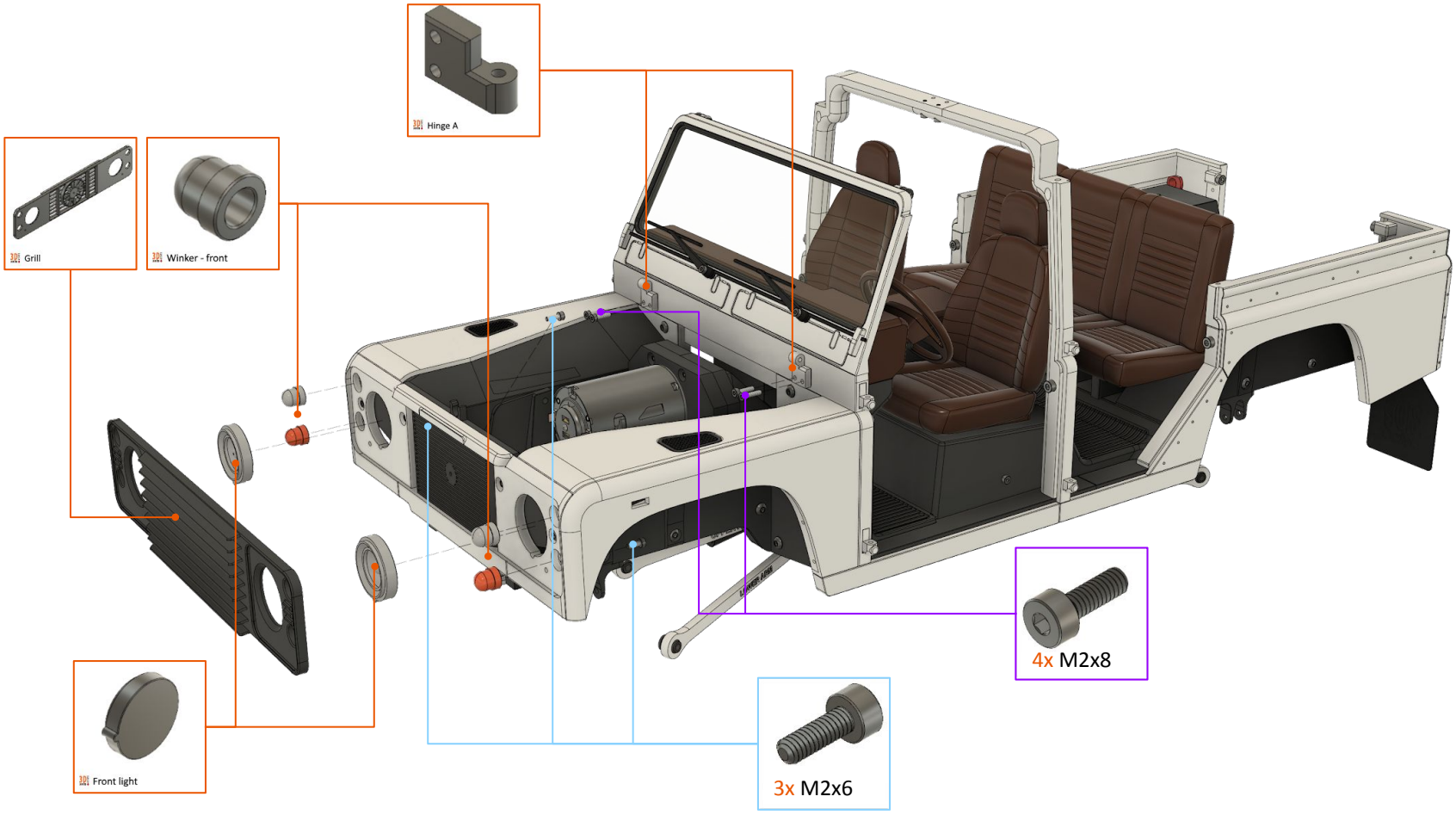
Pickup Upgrade for Model 5 - Hood, Grill, Fender

In this 2-step procedure you will install the Hood, Fender, Grill with light and winker

Non-printed parts:

- Screw M2x6: 27 pcs.
- Screw M2x8: 4pcs.
- Screw M2x10: 2 pcs.

Pickup Upgrade for Model 5: Grill



Pickup Upgrade for Model 5: Fender & Hood

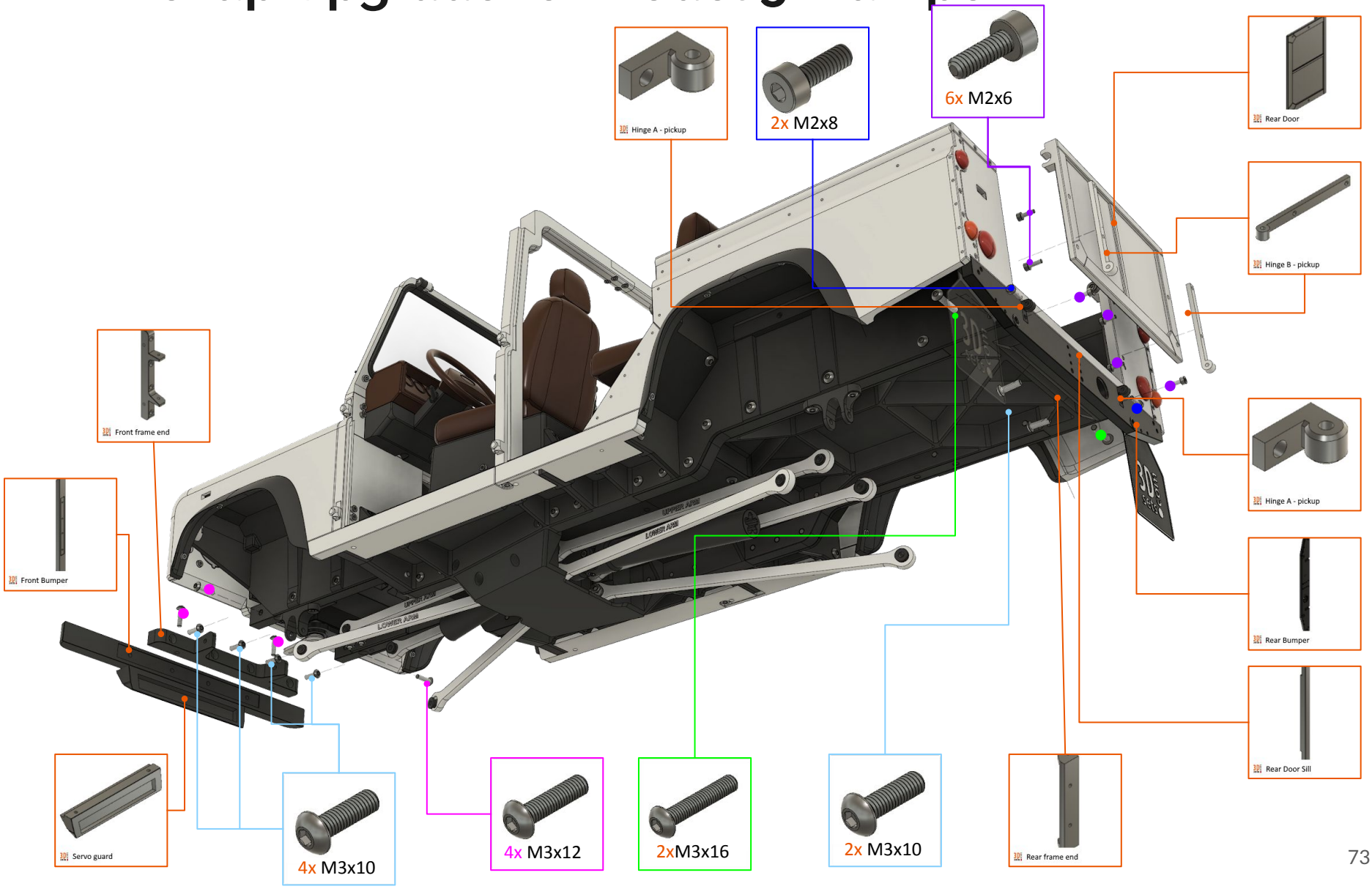
Pickup Upgrade for Model 5 – bumpers

In this 1-step procedure you will mount bumpers and rear door in place.

Non-printed parts:

- Screw M2x6: 6 pcs.
- Screw M2x8: 2 pcs.
- Screw M3x10: 6 pcs.
- Screw M3x12: 4 pcs.
- Screw M3x16: 2 pcs.

Pickup Upgrade for Model 5: Bumper



Landy 4x4 – Axles choice

There are two different axles available for Landy 4x4:

With new *Opened Differential*
With *No Differential (locked)*

New *Opened Differential* features:

- Medium print and assemble difficulty
- Excellent for indoor driving and exterior hard surfaces
- Excellent maneuverability and small turning radius
- Low drivetrain/gearbox stress

Classic *No Differential* features:

- Easier to print and assemble
- Excellent for heavy terrain driving
- Not recommended for hard surfaces (interior floors etc.) – using locked differentials on both axles results in high stress on drivetrain/gearbox parts.

Both types of axles <u>can be combined</u> to achieve optimum performance:

Front Opened Diff.

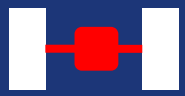
Ideal for interior driving or normal use on the yard

Rear Opened Diff.

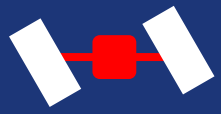
Front Opened Diff.

Recommended setup – good on all surfaces

Rear No Diff.

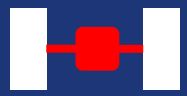


Front No Diff.



Ideal for heavy terrain. Not for hard surfaces.

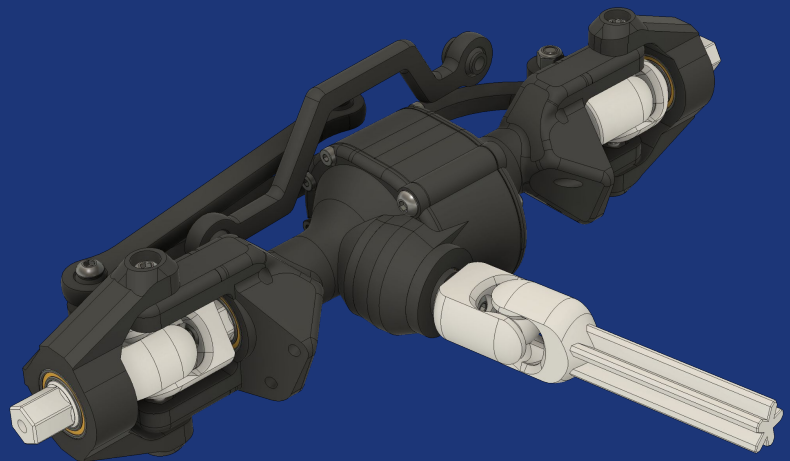
Rear No Diff.



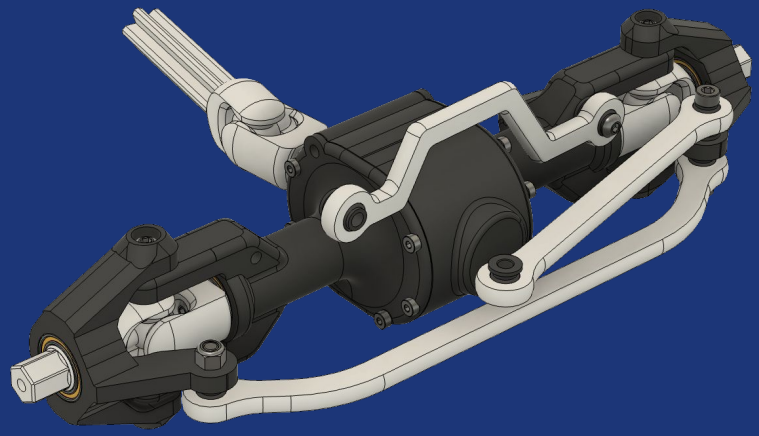
Front Axle

On the previous slide, you chose your preferred Axles configuration. Let's start with Front Axle first:

For Front Axle with Opened Differential, proceed to next page (80).



For Front Axle with No Differential, proceed to page 86.

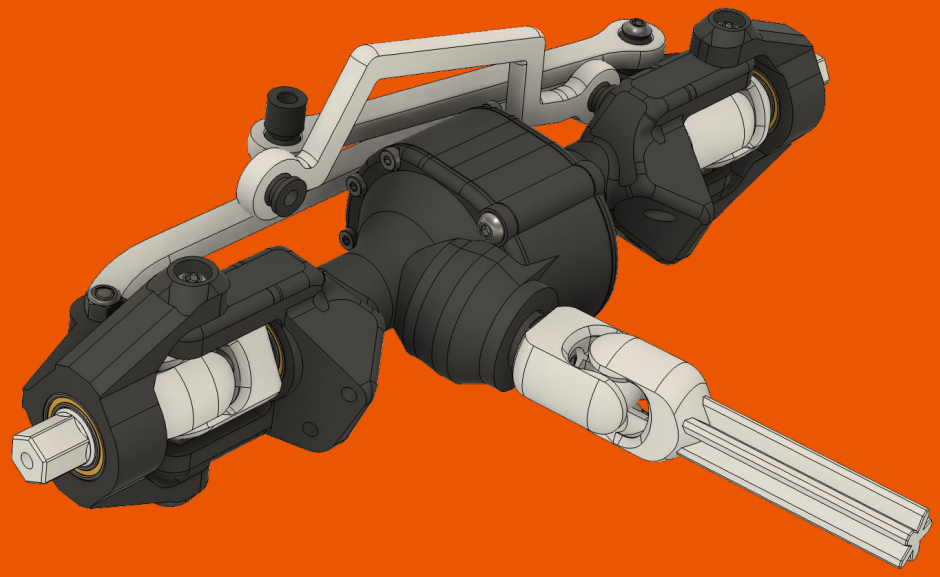


Front Axle - with Differential

In this 6-step procedure you will assemble the front axle. The axle includes a locked differential, driveshaft and complete steering assembly.

Non-printed parts:

- Screw M2x10: 18 pcs.
- Screw M3x8: 3 pcs.
- Screw M3x10: 10 pcs.
- Screw M3x16: 2 pcs.
- Screw M3x25: 1 pcs.
- Nut M3: 4 pcs.
- Locknut M3: 2 pcs.
- Bearing: 15 pcs.
- Grease

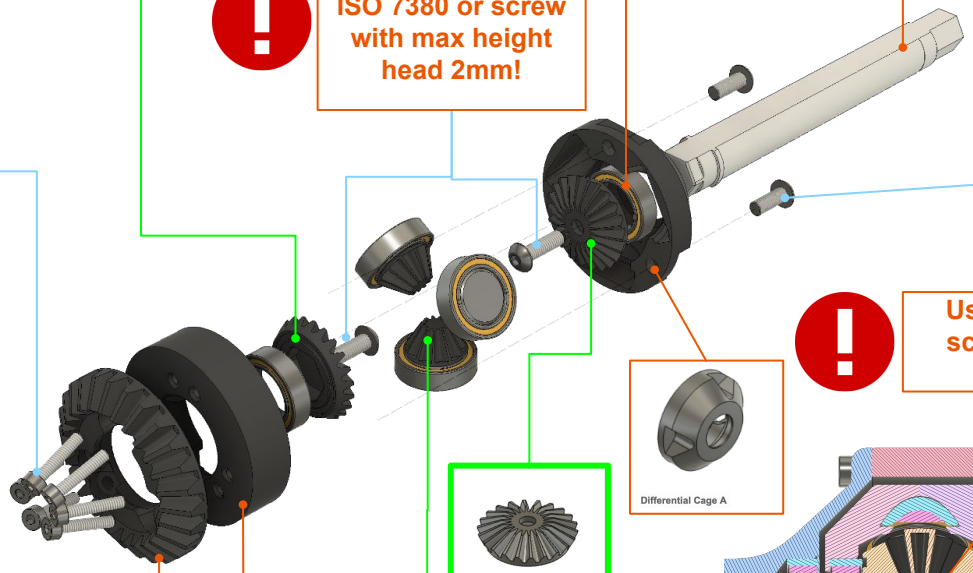


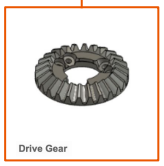
Front Axle (with differential) – step 1/6

It is recommended to print these specific parts from high-strength material like **Prusament PC Blend**: specifically the ***Axle Gears*** and ***Differential Pinions***. **Do not use ABS or PETG for gears, as they are weaker even then PLA!**

PRUSAMENT

Use screw ISO 7380 or screw with max height head 2mm!





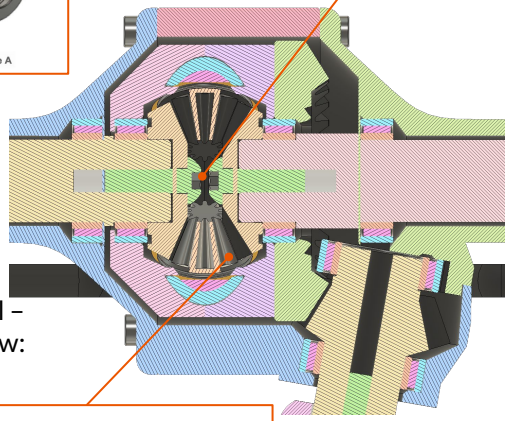
Prusament PC Blend

PRUSAMENT

Prusament PC Blend

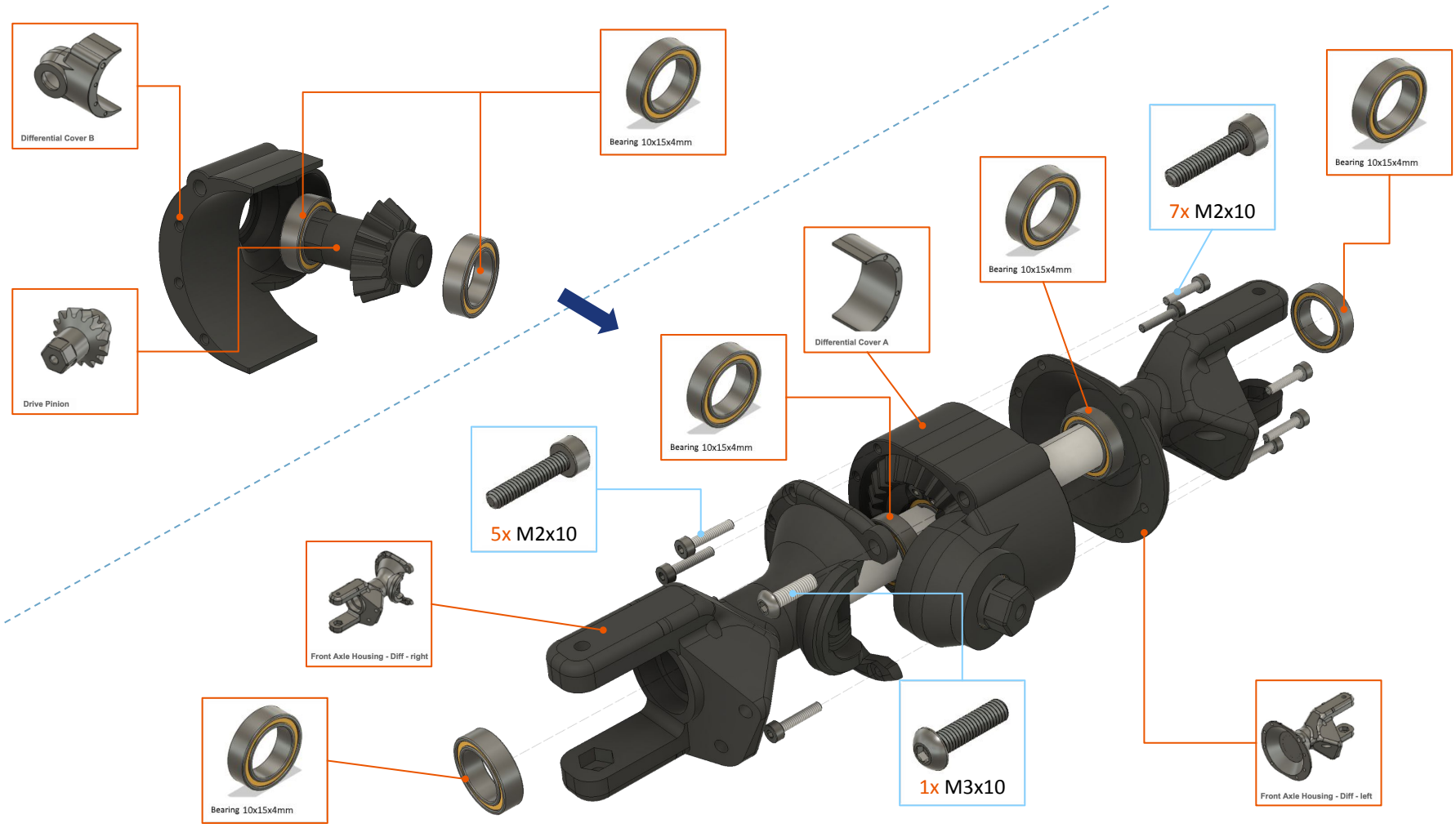
Use screw ISO 7380 or screw with max height head 2mm!

Open differential – section view:

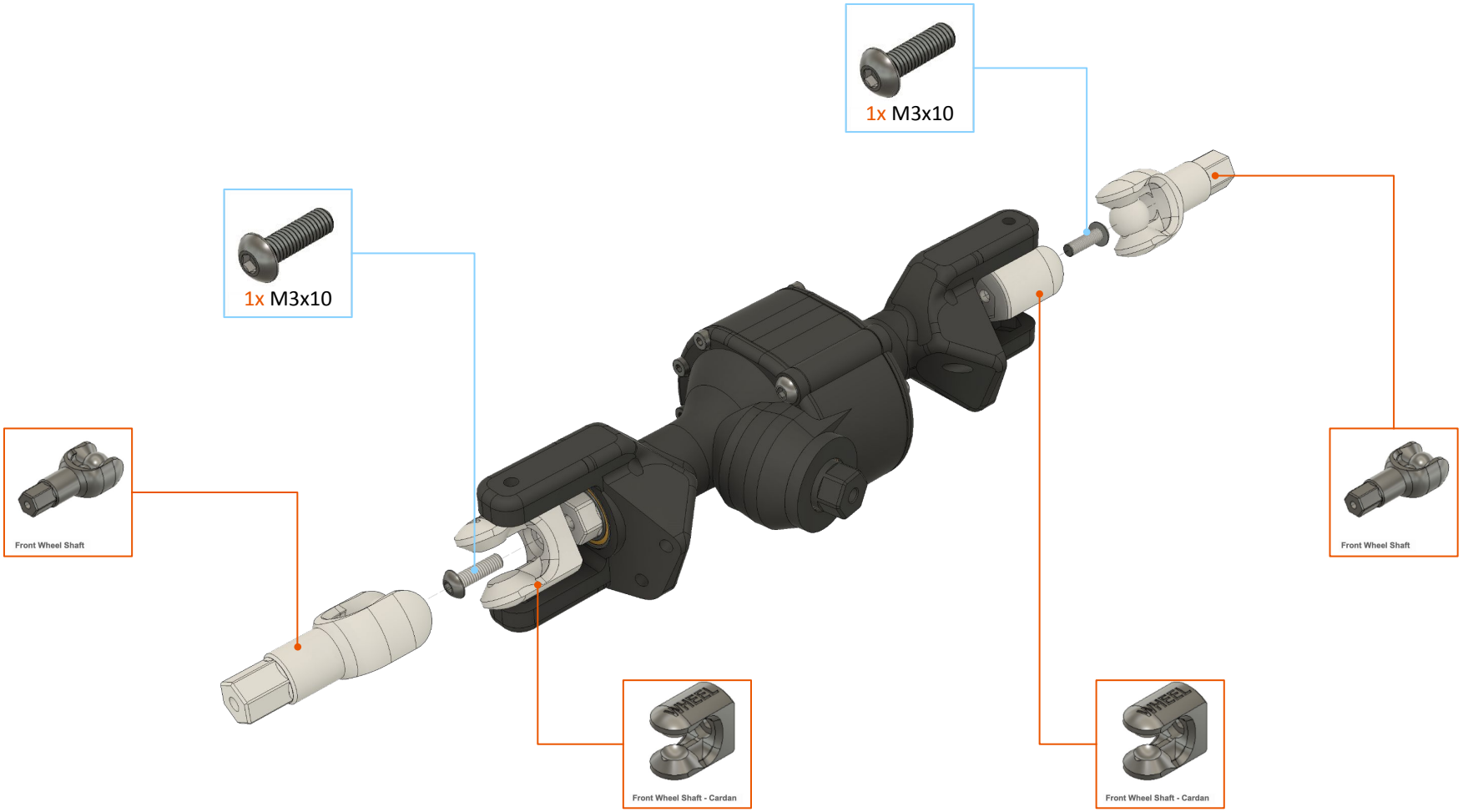


Apply grease on gear tooths.

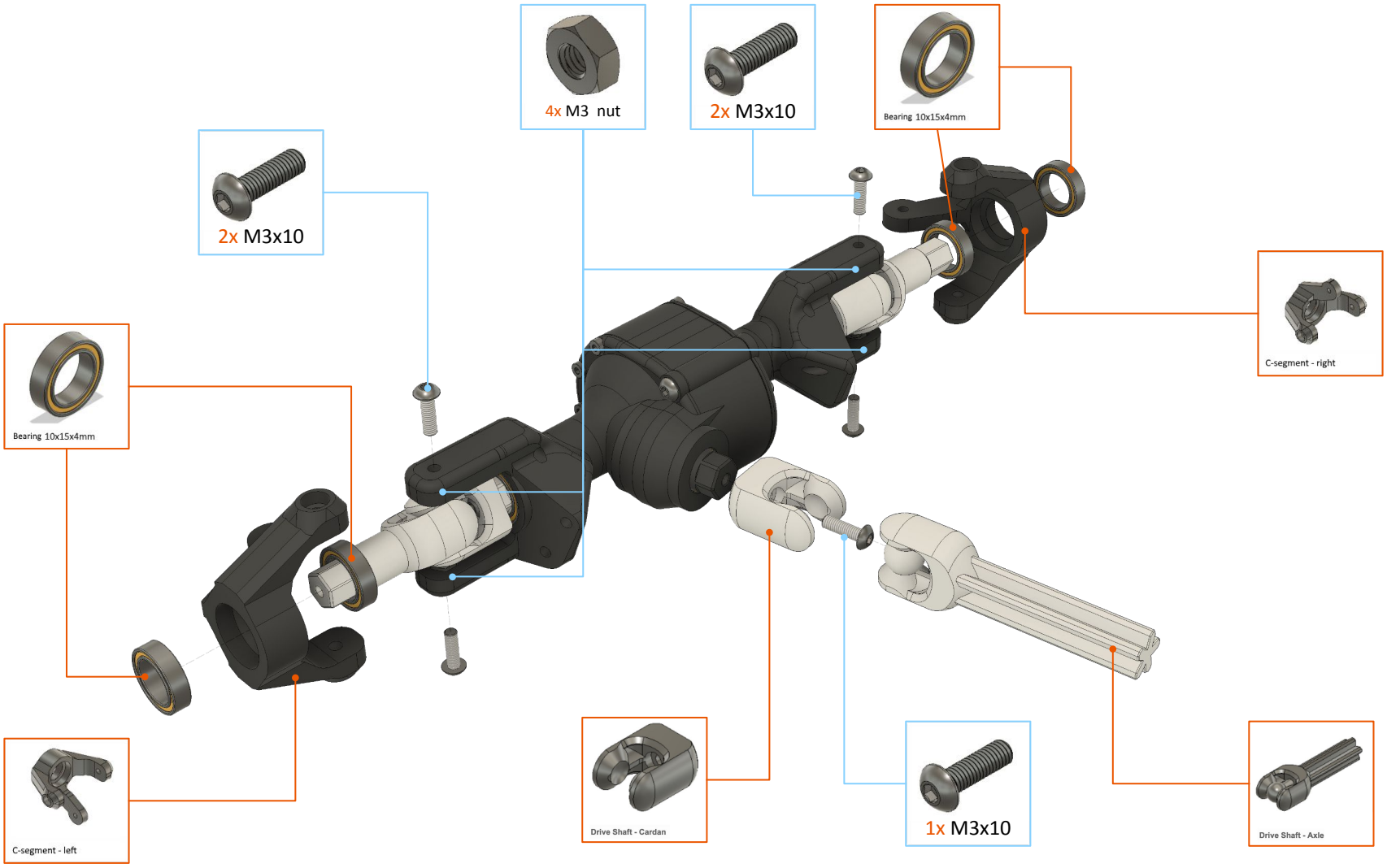
Front Axle (with differential) – step 2-3/6



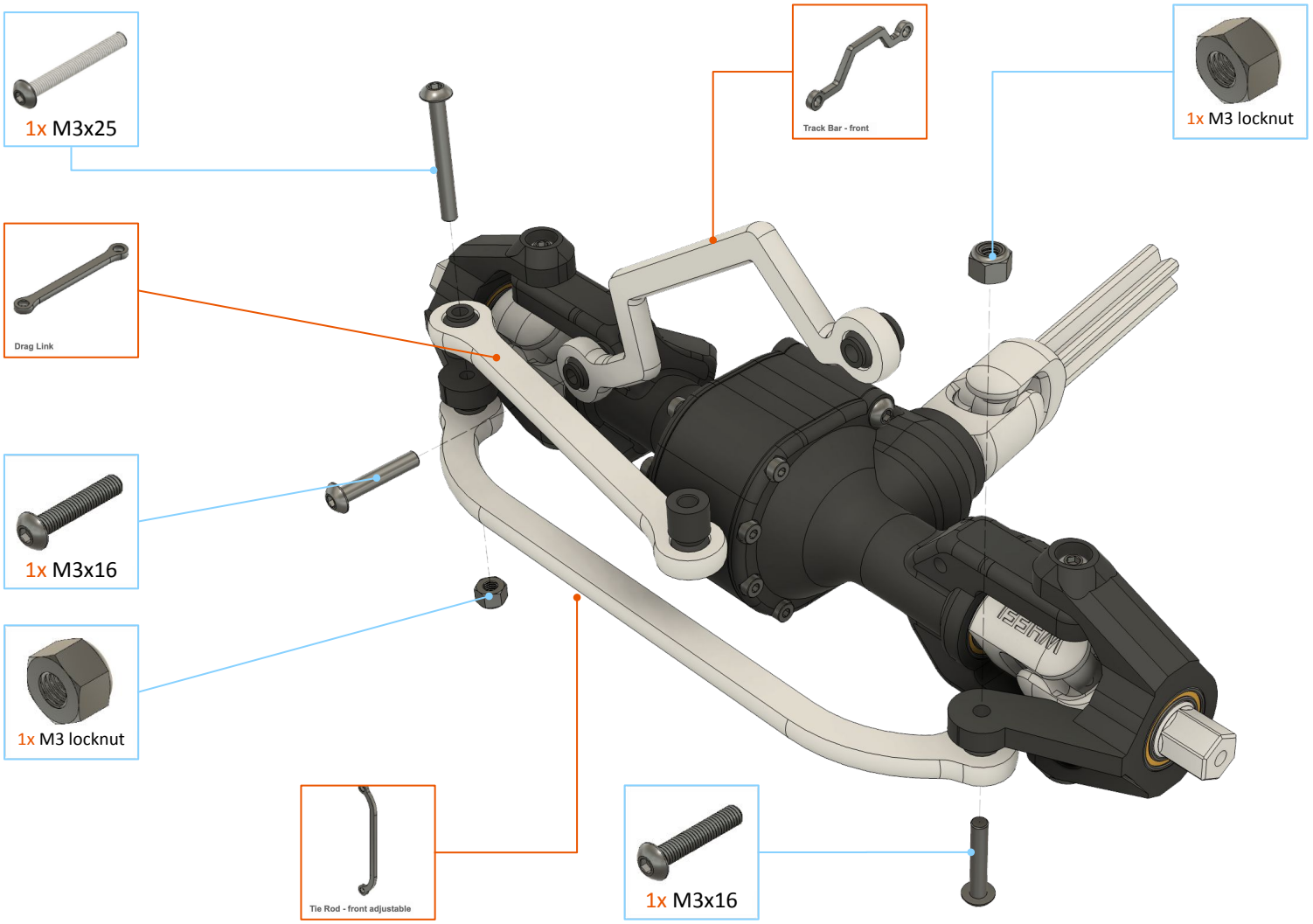
Front Axle (with differential) – step 4/6



Front Axle (with differential) – step 5/6



Front Axle (with differential) – step 6/6

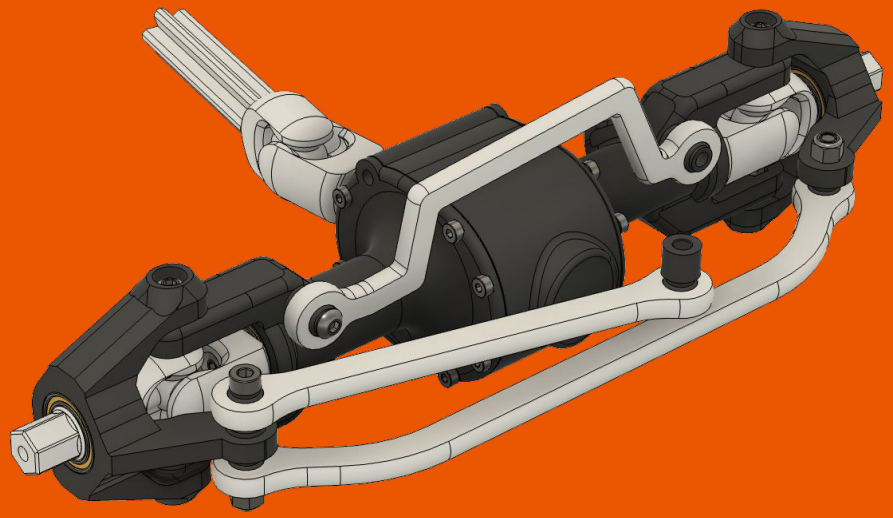


Subassembly #3 – Front axle

In this 10-step procedure you will assemble the front axle. The axle includes a locked differential, driveshaft and complete steering assembly.

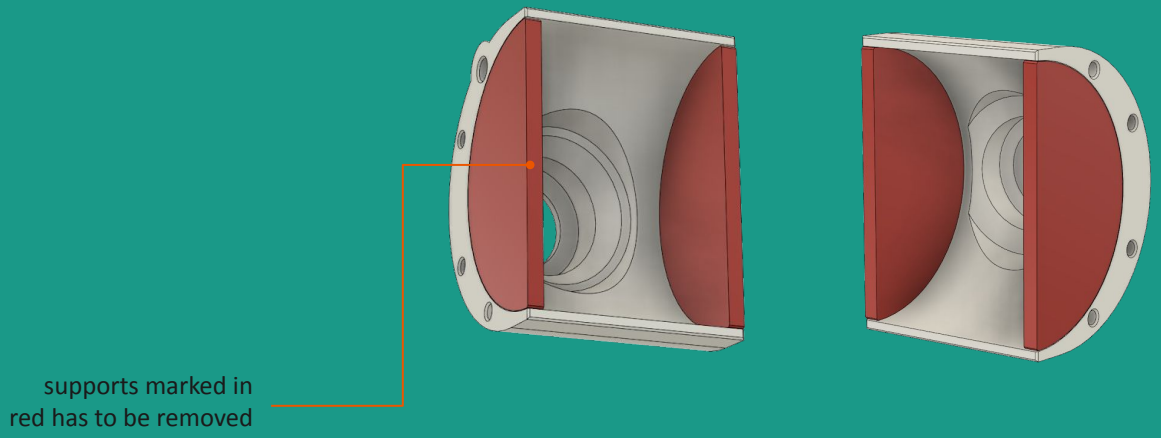
Non-printed parts:

- Screw M2x6: 14 pcs.
- Screw M3x10: 9 pcs.
- Screw N3x12: 1 pcs.
- Screw M3x16: 2 pcs.
- Screw M3x25: 1 pcs.
- Nut M3: 4 pcs.
- Locknut M3: 2 pcs.
- Bearing: 10 pcs.
- Grease

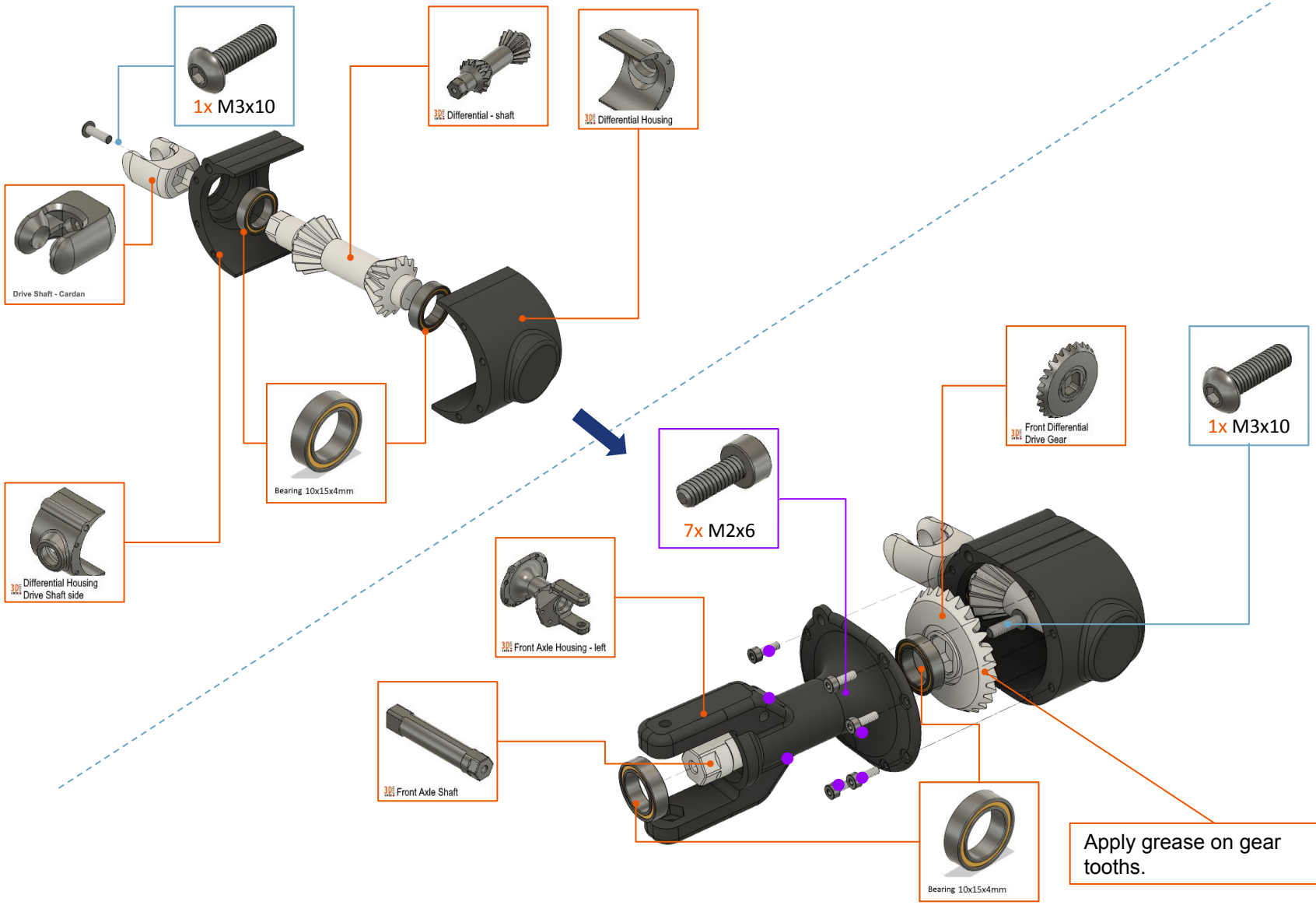


Axles – postprocessing

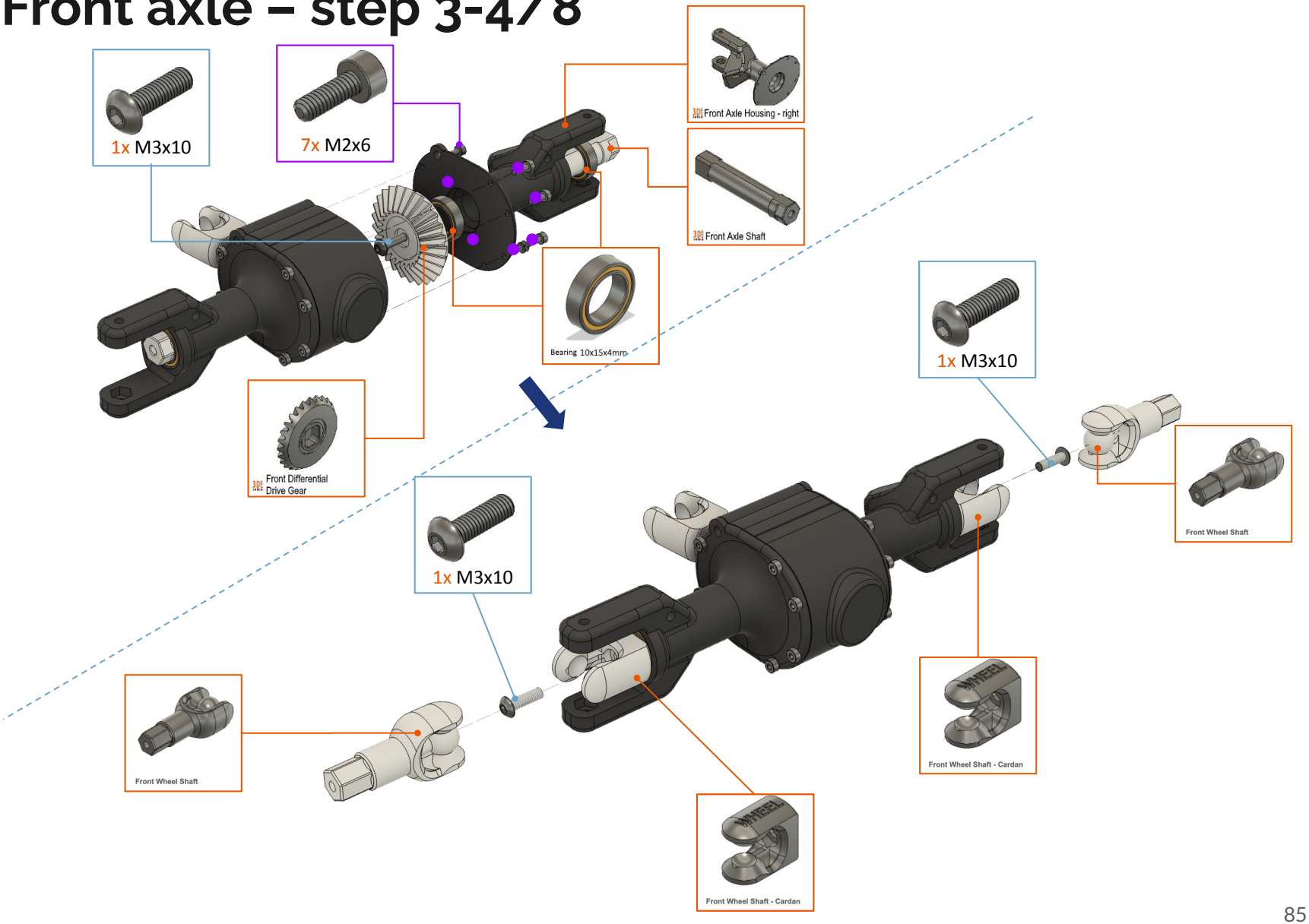
Before you start building Axles, carefully remove printing supports (marked red) integrated to specific parts rendered below. You can use pliers and sharp knife to make the procedure easier. Be very careful as you can harm yourself!



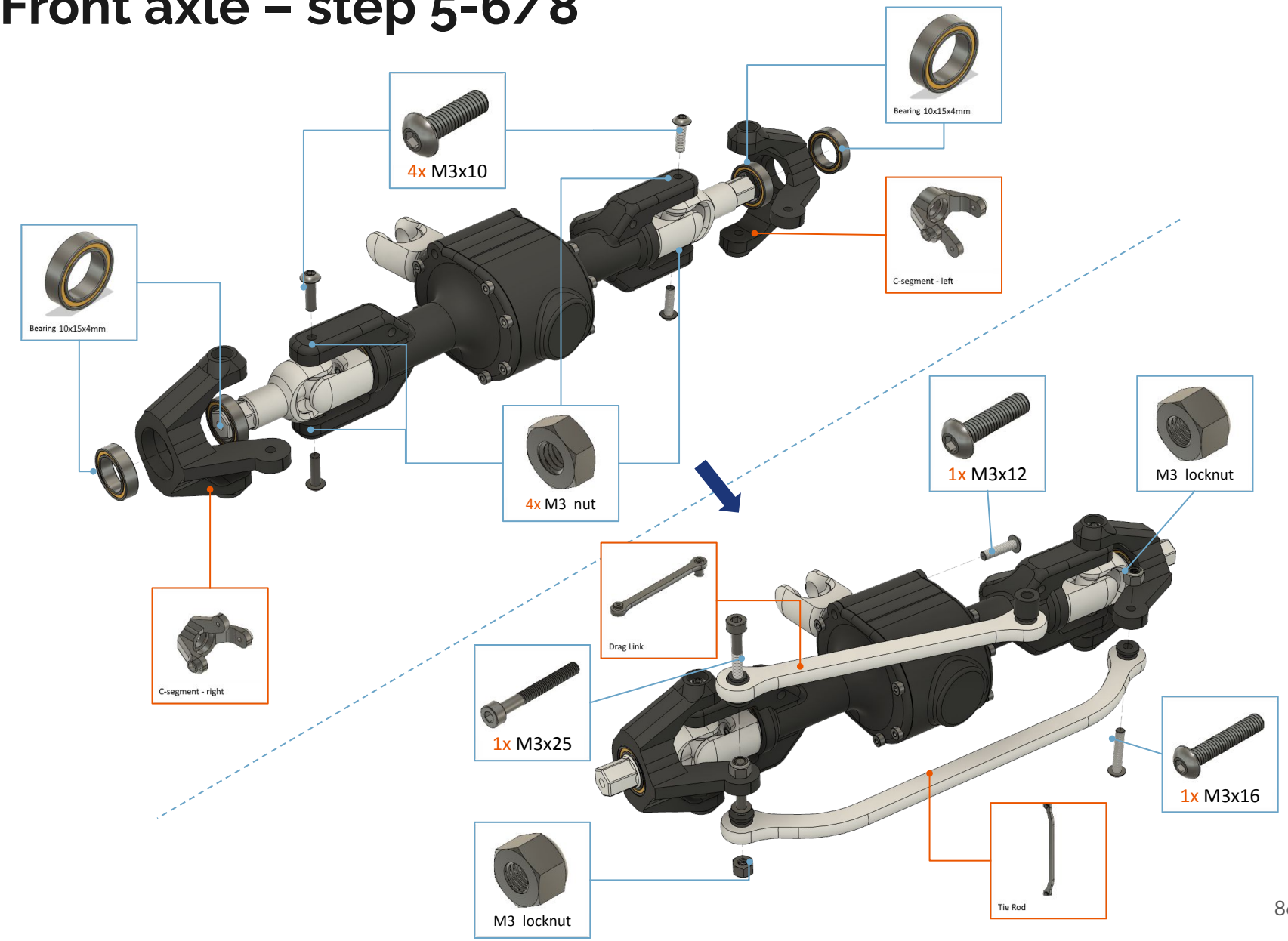
Front axle – step 1-2/8



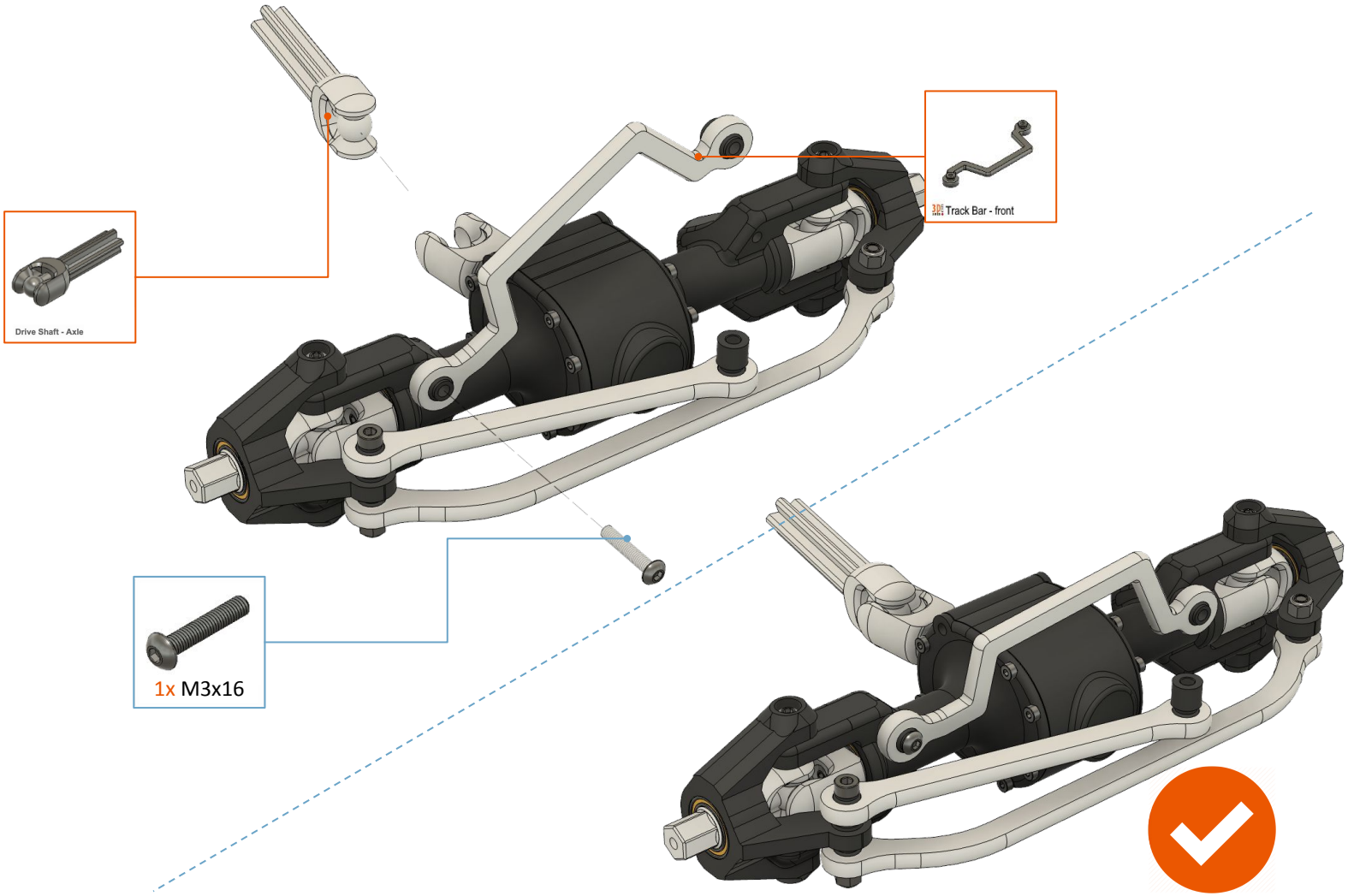
Front axle – step 3-4/8



Front axle – step 5-6/8



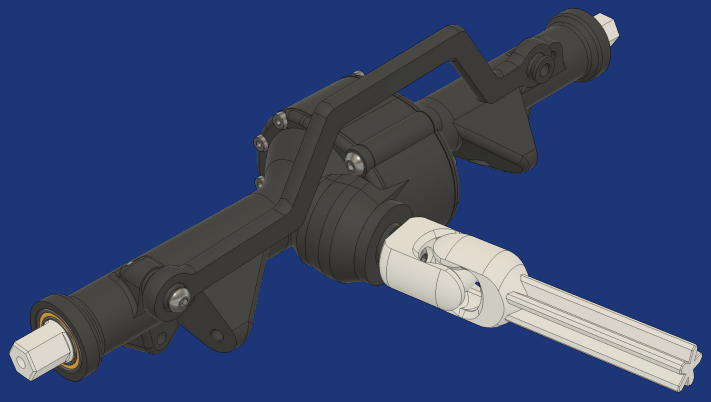
Front axle – step 7-8/8



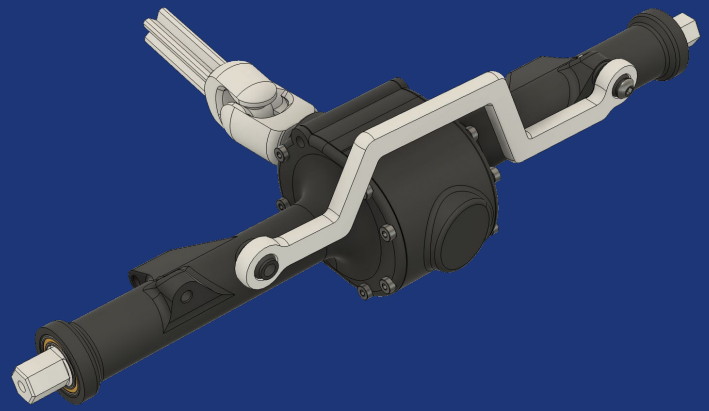
Rear Axle

On the slide 78, you chose your preferred Axles configuration. Continue with the Rear Axle:

For Rear Axle with Opened Differential, proceed to next page (93).



For Rear Axle with No Differential, proceed to page 97.

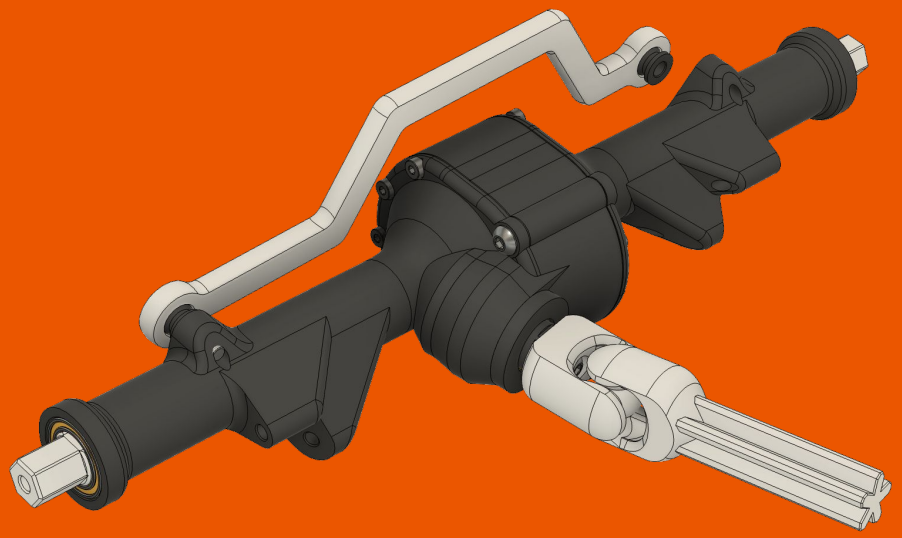


Rear Axle with Differential

In this 4-step procedure you will assemble the rear axle. The axle includes a locked differential and driveshaft.

Non-printed parts:

- Screw M2x10: 18 pcs.
- Screw M3x8: 3 pcs.
- Screw M3x10: 4 pcs.
- Screw M3x16: 1 pcs.
- Bearings: 11 pcs.
- Grease
- Thread Locker

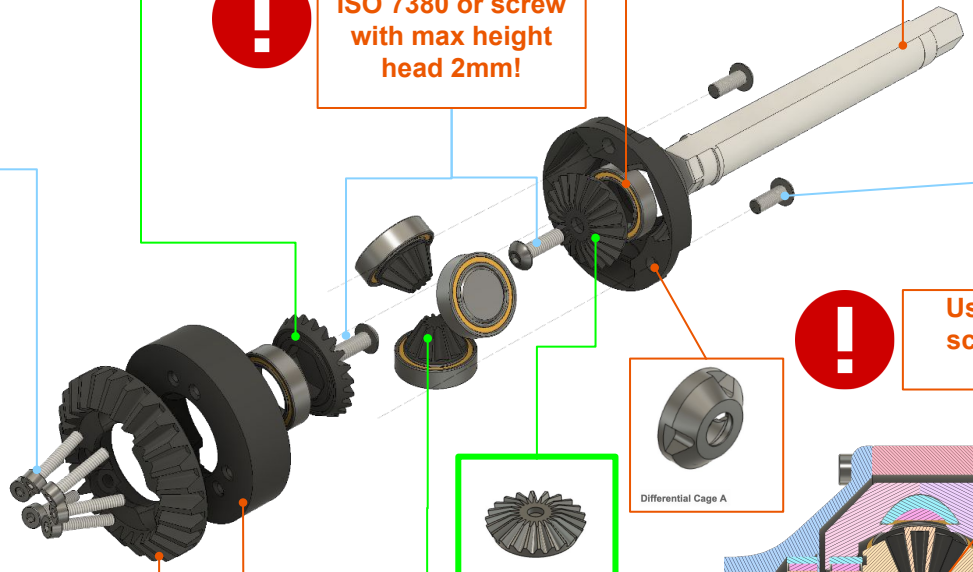


Rear Axle (with differential) – step 1/4

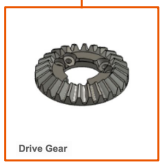
It is recommended to print these specific parts from high-strength material like **Prusament PC Blend**: specifically the ***Axle Gears*** and ***Differential Pinions***. **Do not use ABS or PETG for gears, as they are weaker even then PLA!**

PRUSAMENT

Use screw ISO 7380 or screw with max height head 2mm!



Use screw ISO 7380 or screw with max height head 2mm!

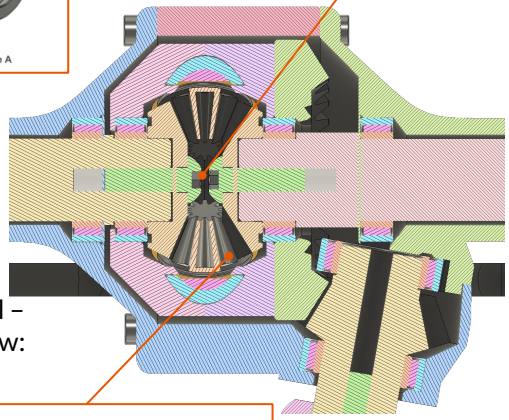


Prusament PC Blend

PRUSAMENT

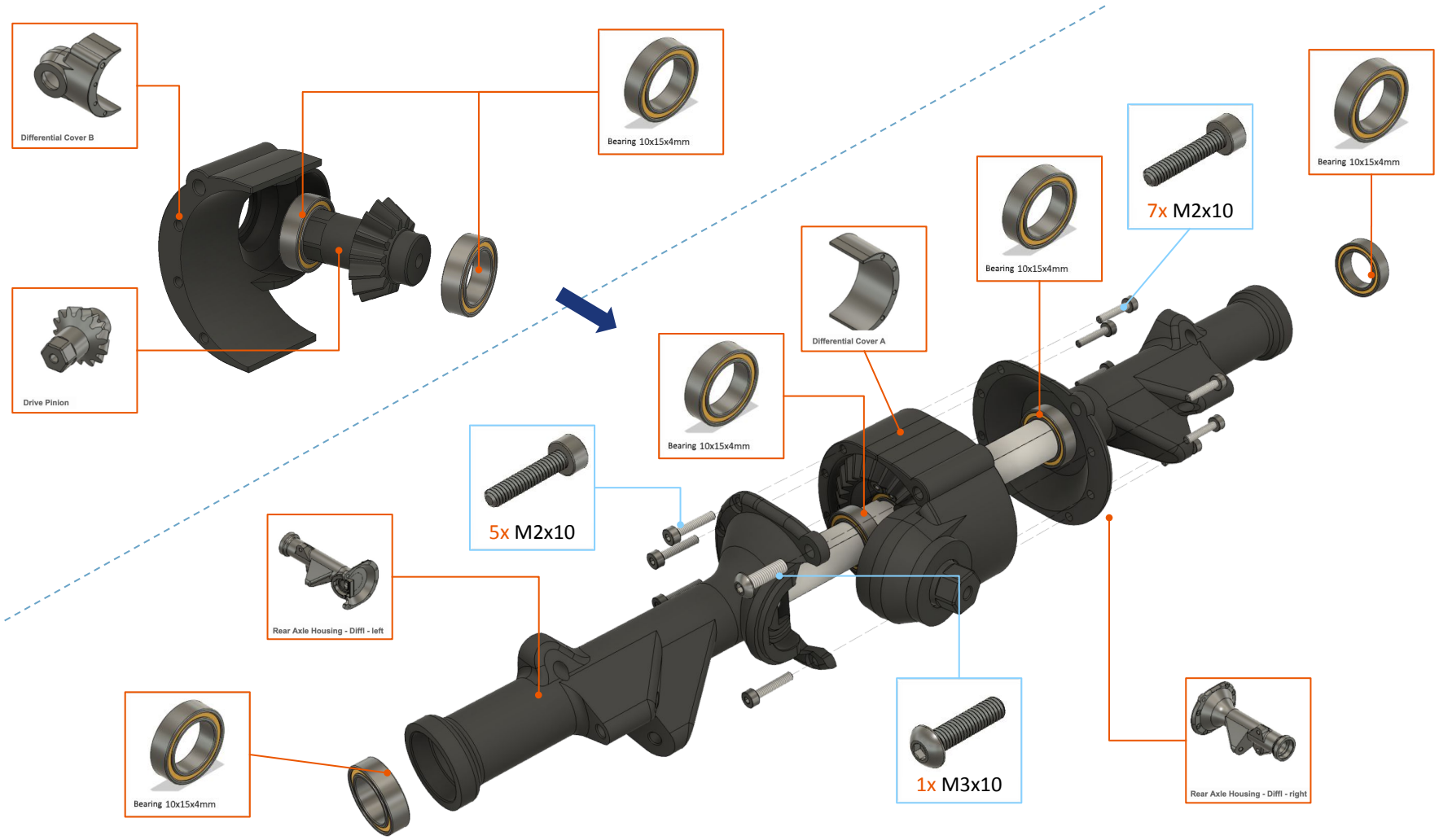
Prusament PC Blend

Open differential – section view:

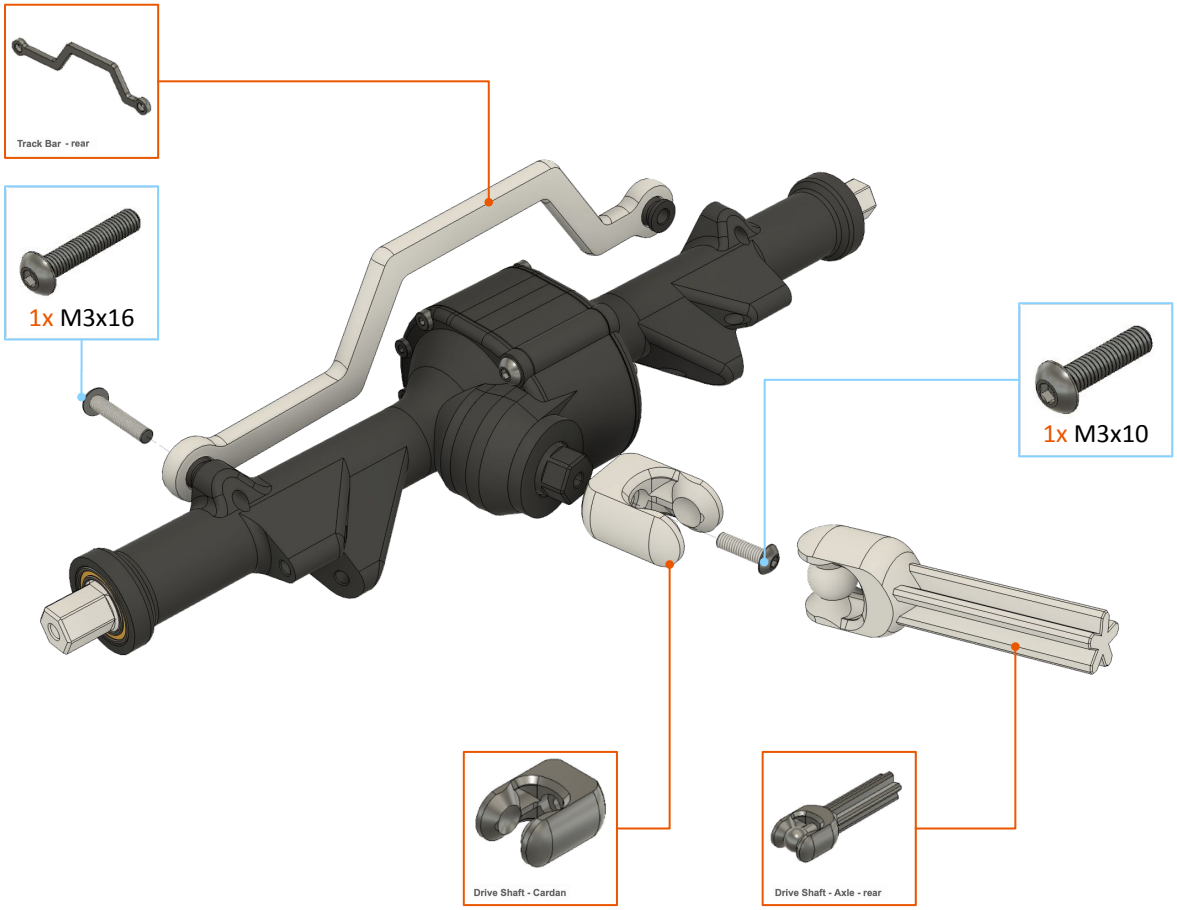


Apply grease on gear tooths.

Rear Axle (with differential) – step 2-3/4



Rear Axle (with differential) – step 4/4

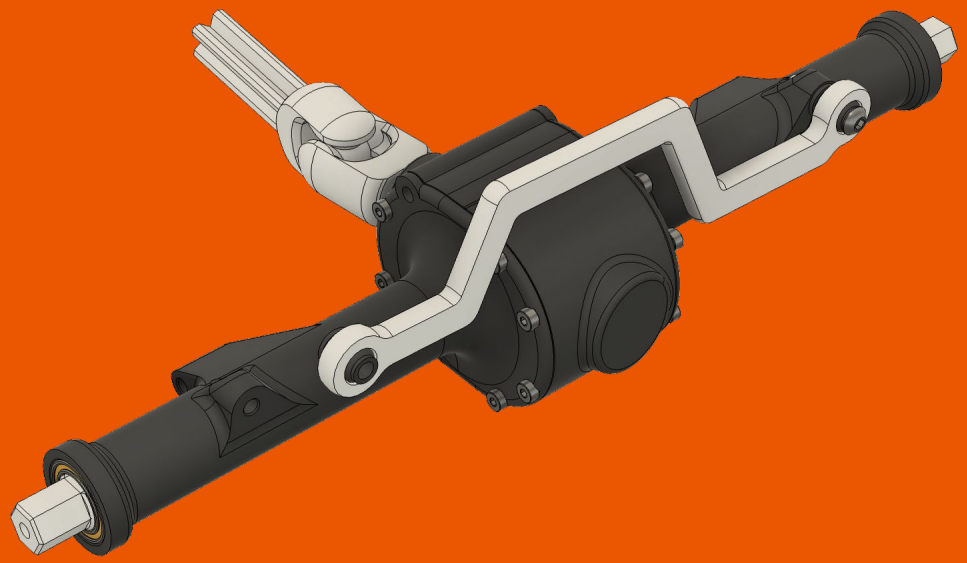


Subassembly #2 – Rear axle

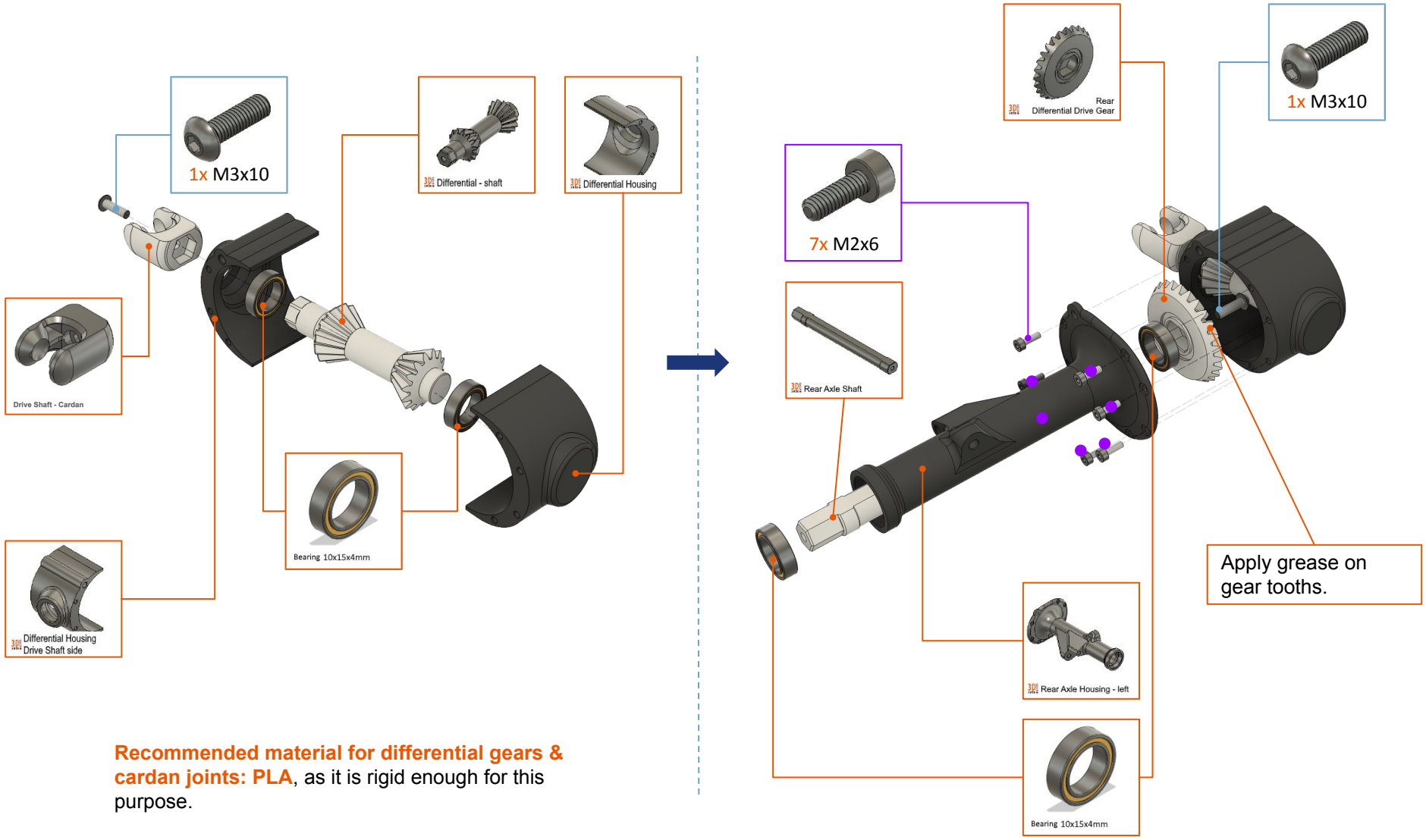
In this 6-step procedure you will assemble the rear axle. The axle includes a locked differential and driveshaft.

Non-printed parts:

- Screw M2x6: 14 pcs.
- Screw M3x10: 3 pcs.
- Screw M3x12: 1 pcs.
- Screw M3x16: 1 pcs.
- Bearings: 6 pcs.
- Grease
- Thread Locker

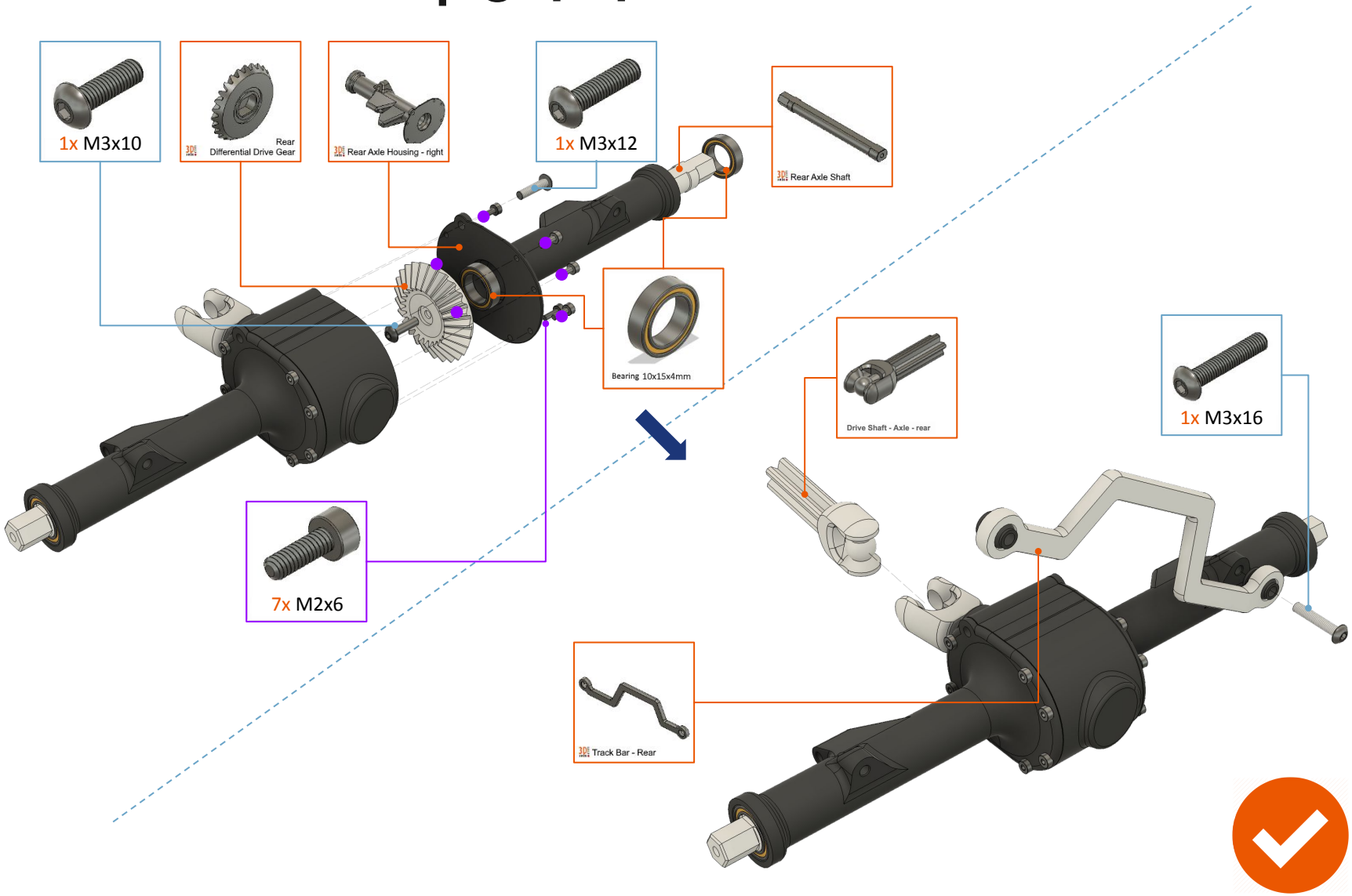


Rear axle – step 1-2/4



Recommended material for differential gears & cardan joints: PLA, as it is rigid enough for this purpose.

Rear axle – step 3-4/4



Pickup Upgrade for Model 5 – axles & rear seats

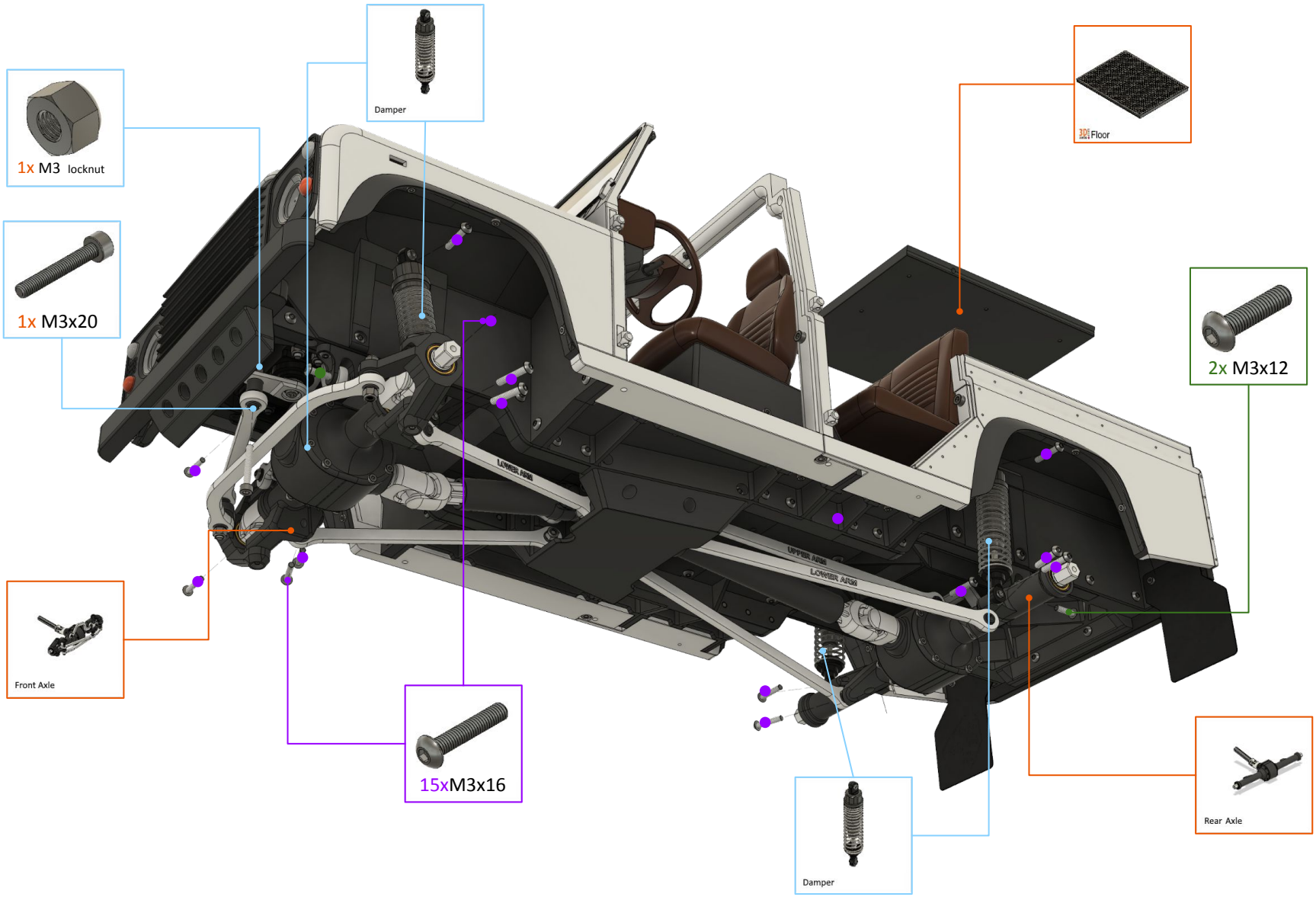
In this 1-step procedure, you will assemble bodywork of the car and then you'll install axles, that you have finished from previous steps.

Front Axle subassemblies
Rear Axle subassemblies

Non-printed parts:

- Screw M3x12: 2 pcs.
- Screw M3x16: 17 pcs.
- Screw M3x20: 1 pcs.
- Locknut M3: 1 pcs.
- Shock absorber: 4pcs

Landy 4x4 Wagon: axles & rear seats



Subassembly #7 – Pickup Roof

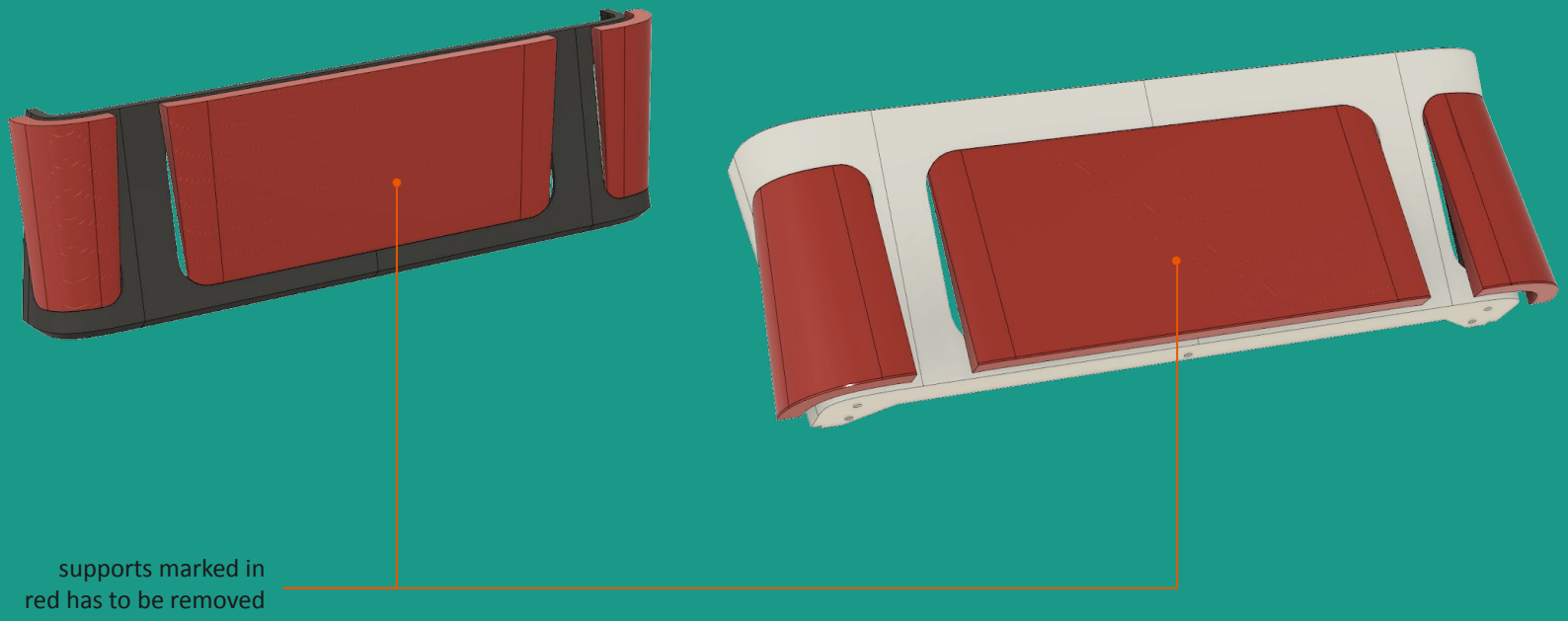
In this 8-step procedure you will assemble roof and rear door. To complete this task, get ready all necessary parts:

Non-printed parts:

- Screw M2x6: 9 pcs.
- Screw M2x10: 8 pcs.
- Screw M3x16: 4 pcs.

Pickup Roof – postprocessing

Before you start building Pickup Roof, carefully remove printing supports (marked red) integrated to specific parts rendered below. You can use pliers and a sharp knife to make the procedure easier. Be very careful as you can harm yourself!

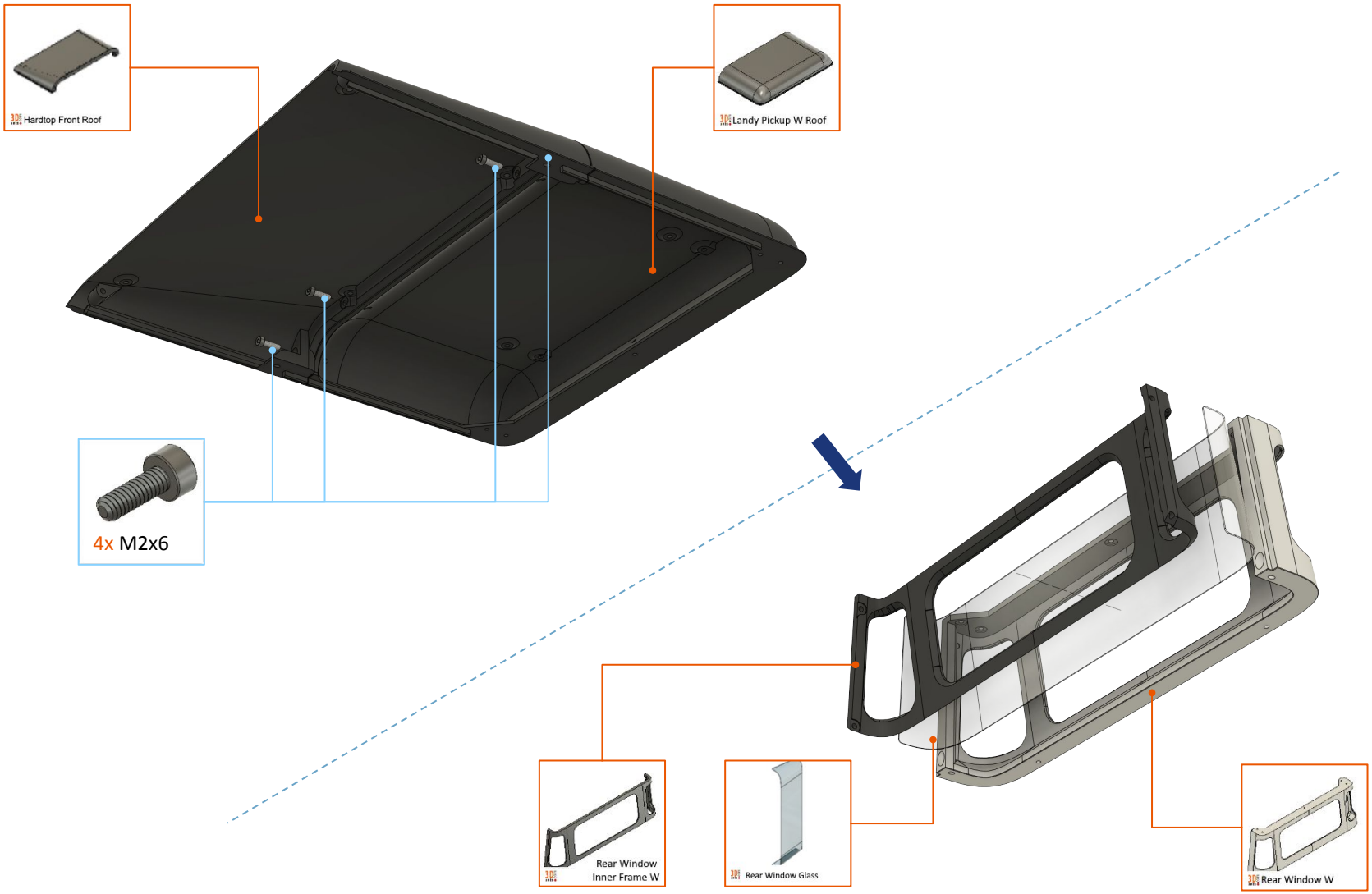


Pickup Upgrade for Model 5: Pickup Roof step 1/5

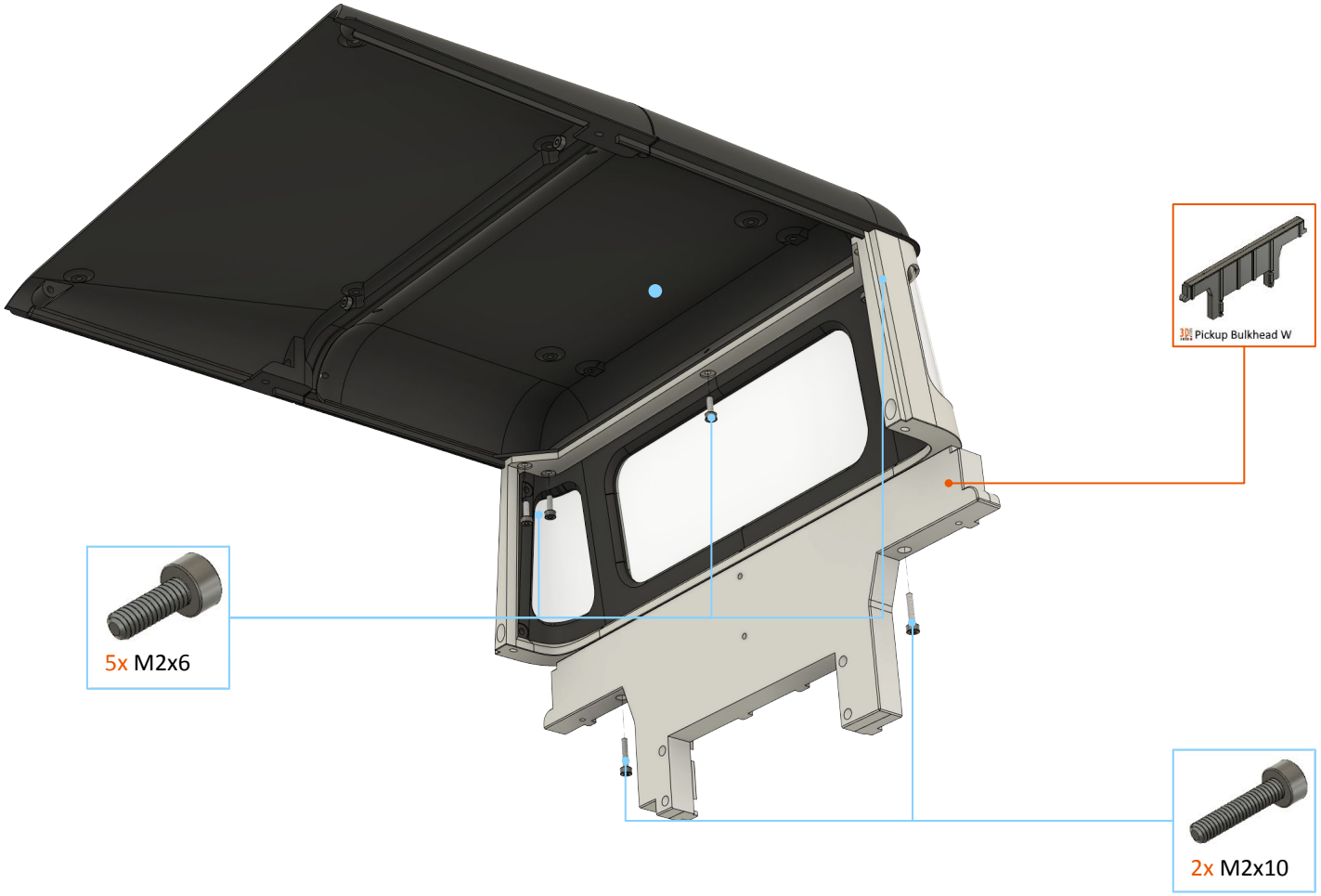
At first, you will make a “rear glass” from any transparent foil up to 0.4 mm thick. Thicker material is more durable than thinner, but we found that “Clear Binding Covers” are OK.

Place the Rear Glass on the foil, sketch the Rear Glass to foil and then cut the Rear glass by scissors or sharp knife.

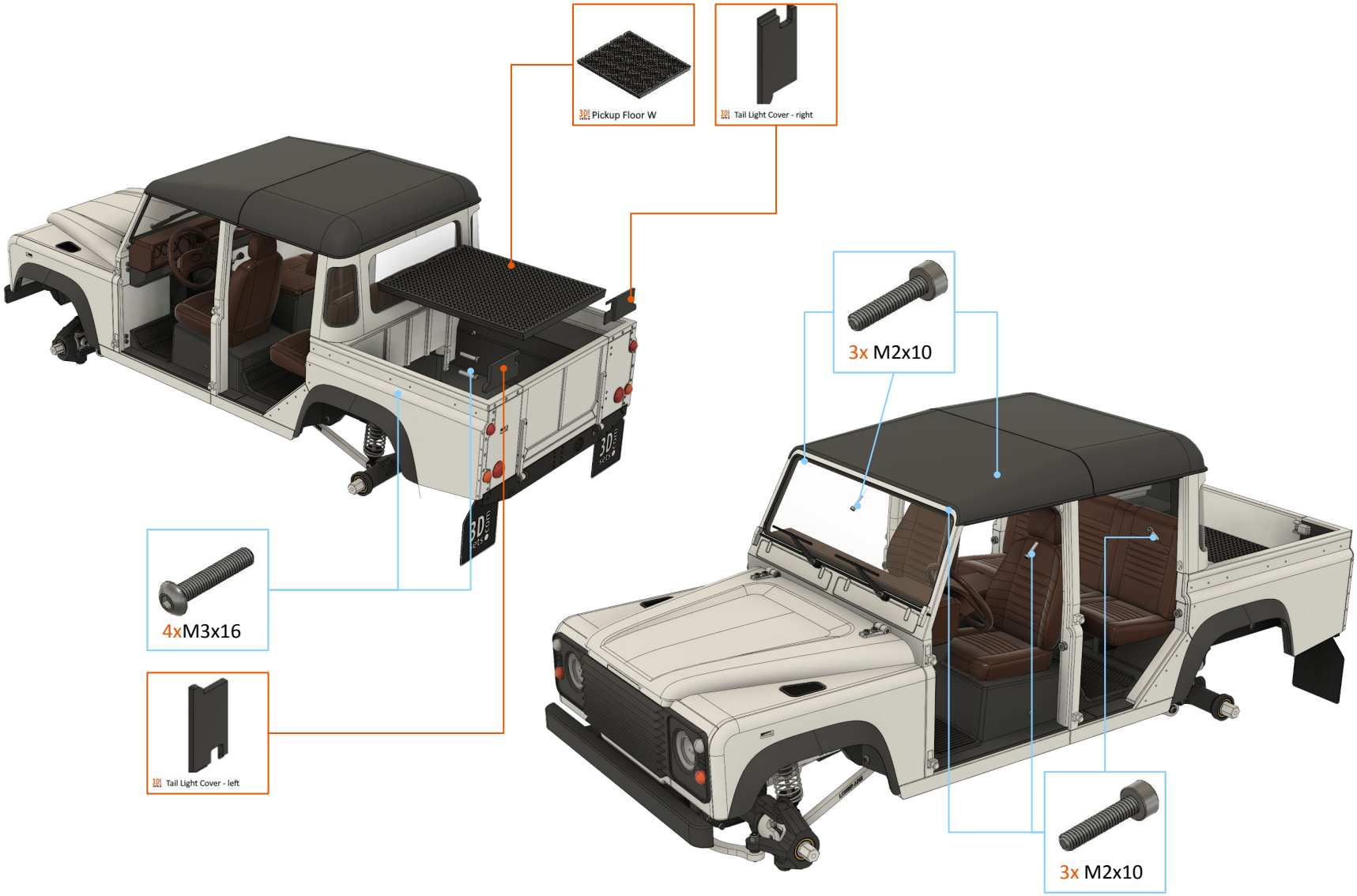
Pickup Upgrade for Model 5: Pickup Roof step 2/5



Pickup Upgrade for Model 5: Pickup Roof step 3/5



Pickup Upgrade for Model 5: Pickup Roof step 4-5/5



Subassembly #8 – Door

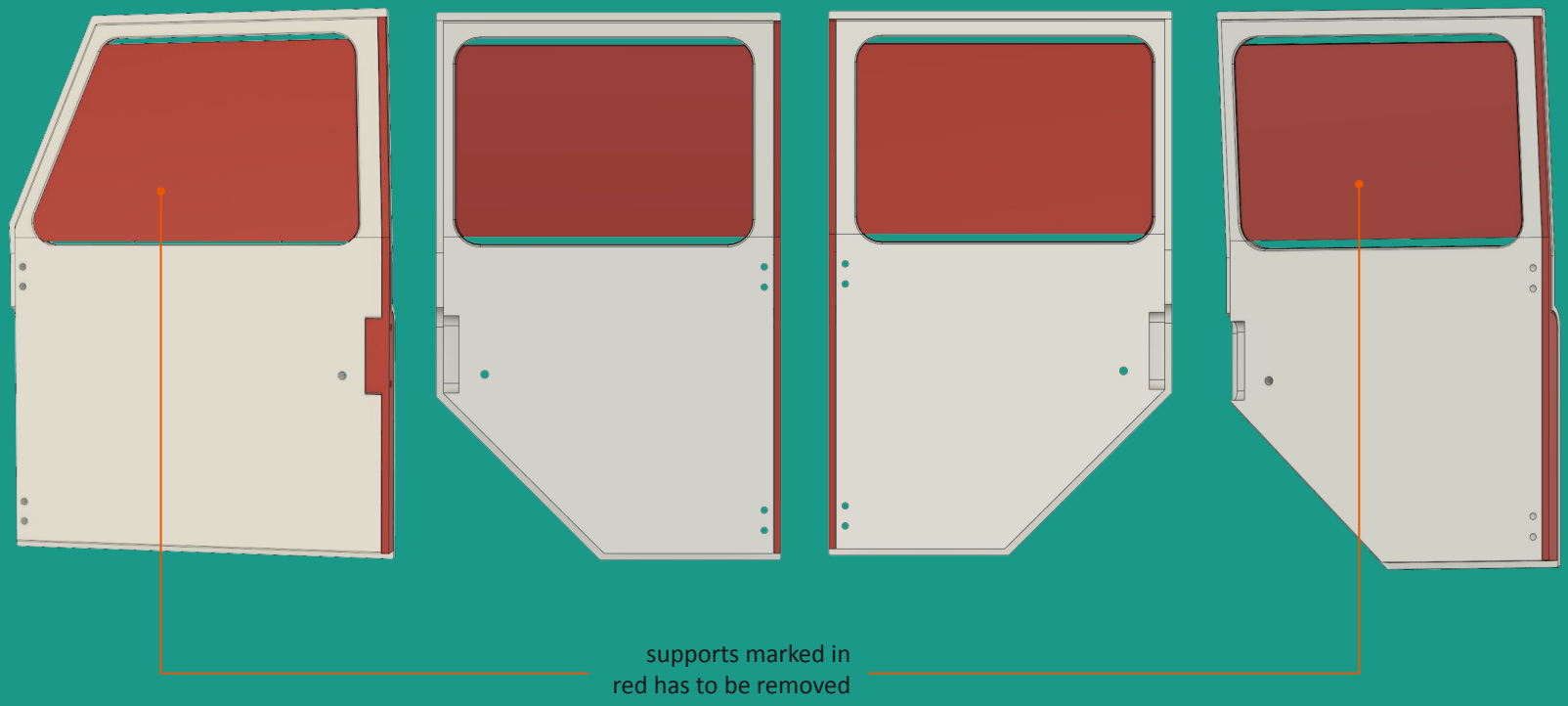
In this 3-step procedure you will assemble doors. To complete this task, get ready all necessary parts:

Non-printed parts:

- Screw M2x6: 9 pcs.
- Screw M2x10: 22 pcs.
- Screw M2x12: 4 pcs.
- Screw M2x 14: 2 pcs.

Doors – postprocessing

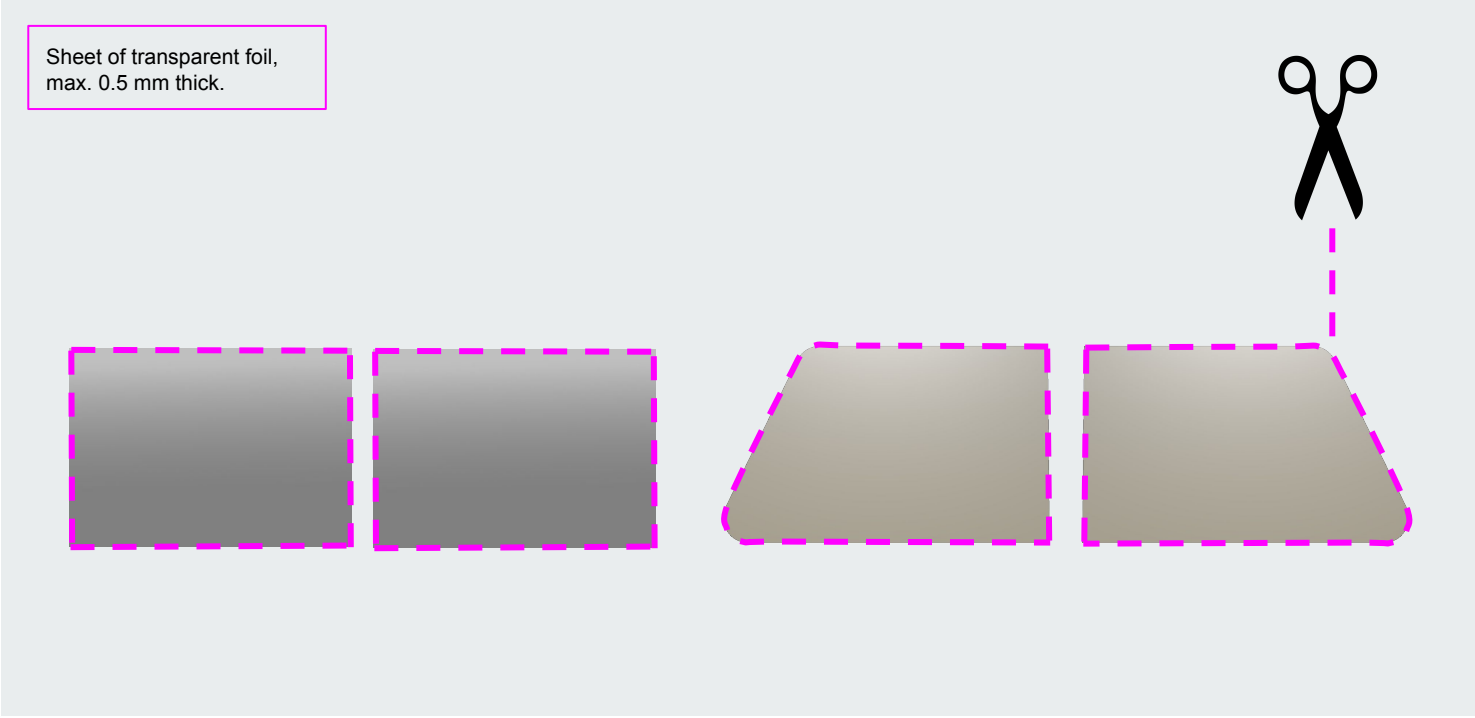
Before you start building Door subassembly, carefully remove printing supports (marked red) integrated to specific parts rendered below. You can use pliers and sharp knife to make the procedure easier. Be very careful as you can harm yourself!



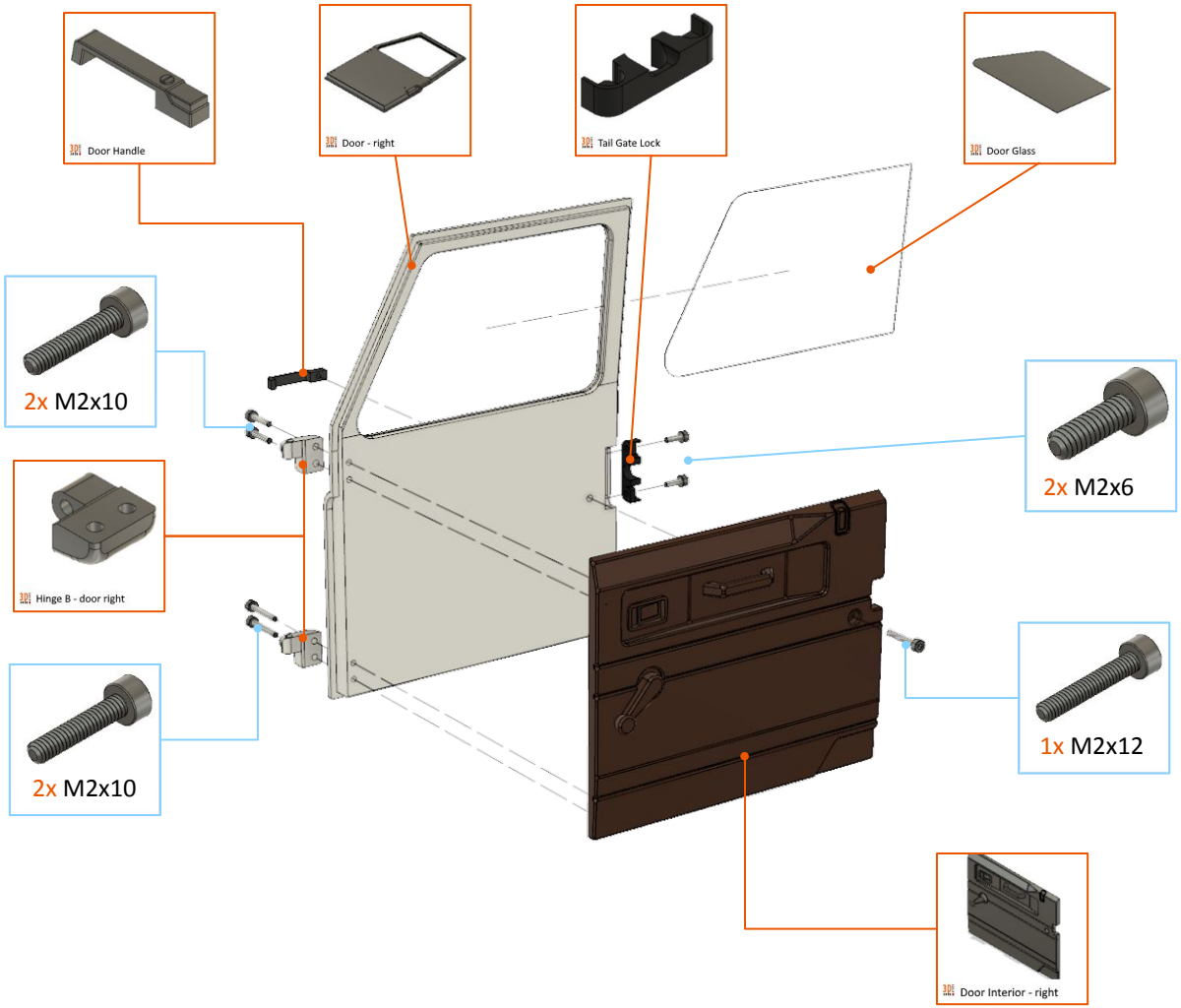
Pickup Upgrade for Model 5: Door step 1/4

At first, you will make a “door glass” from any transparent foil up to 0.4 mm thick. Thicker material is more durable than thinner, but we found that “Clear Binding Covers” are OK.

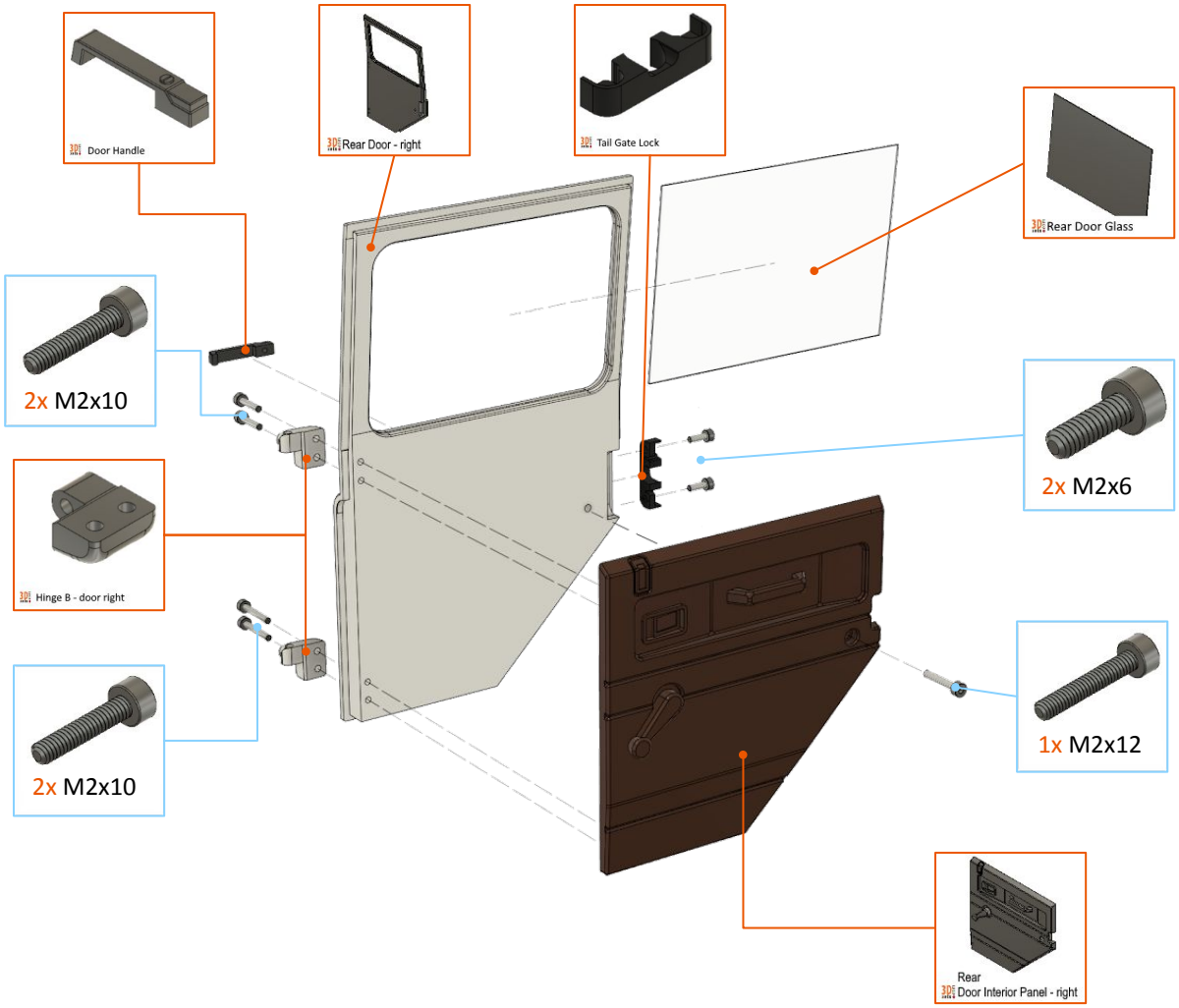
Place the Door Glass on the foil, sketch the Door Glass to foil and then cut the Door glass by scissors or sharp knife.



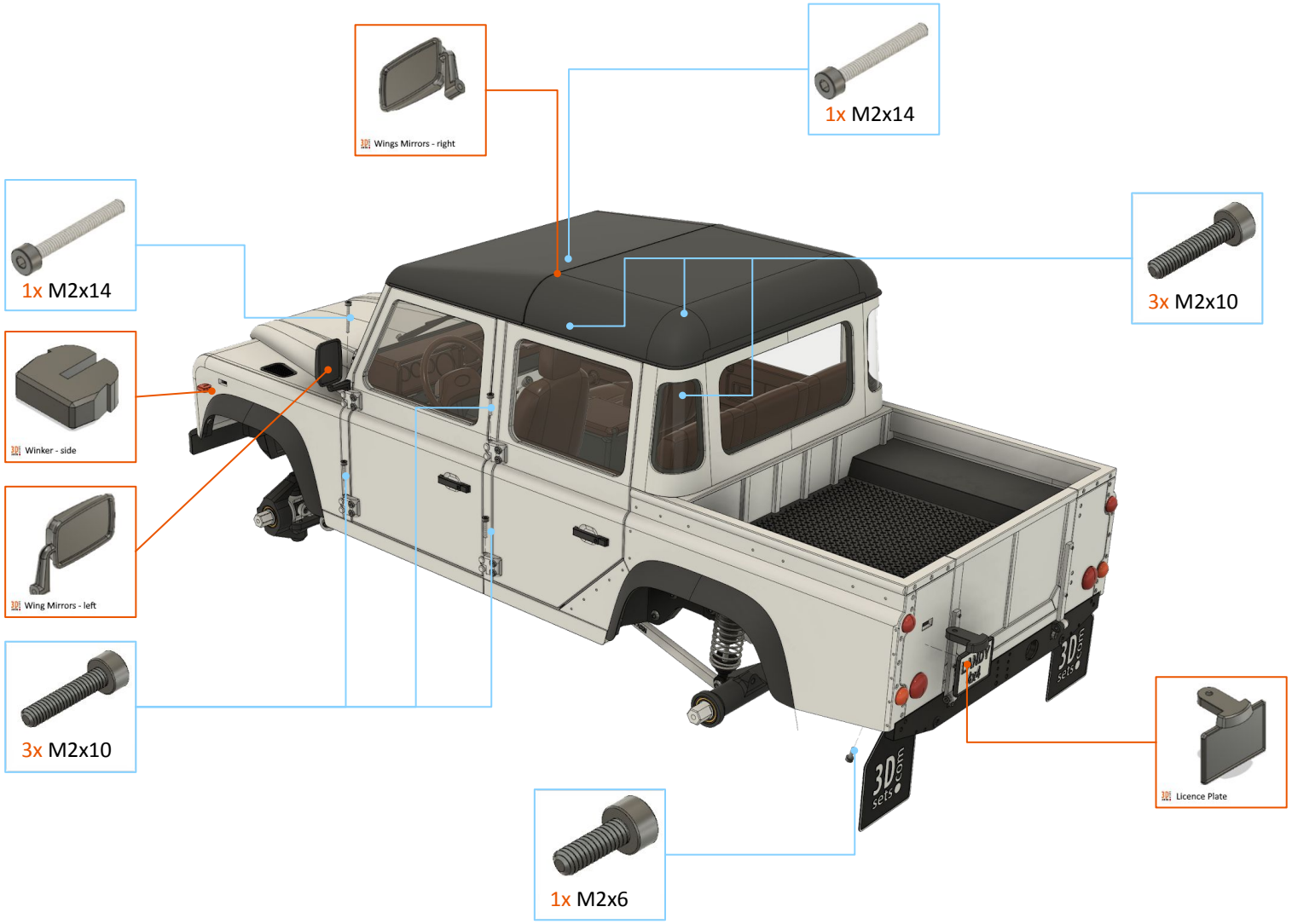
Pickup Upgrade for Model 5: Door step 2/4



Pickup Upgrade for Model 5: Door step 3/4



Pickup Upgrade for Model 5: Door step 4/4



Subassembly #9 – Wheel (C or D)

Now you will assemble wheels. You can choose between 2 designs (wheel C/wheel D):

Wheel C:

Non-printed parts:

- Screw M2x10: 20 pcs.

Wheel D:

Non-printed parts:

- Screw M3x8: 20 pcs.

Wheel C

Wheel D

Pickup Upgrade for Model 5 - Wheels D

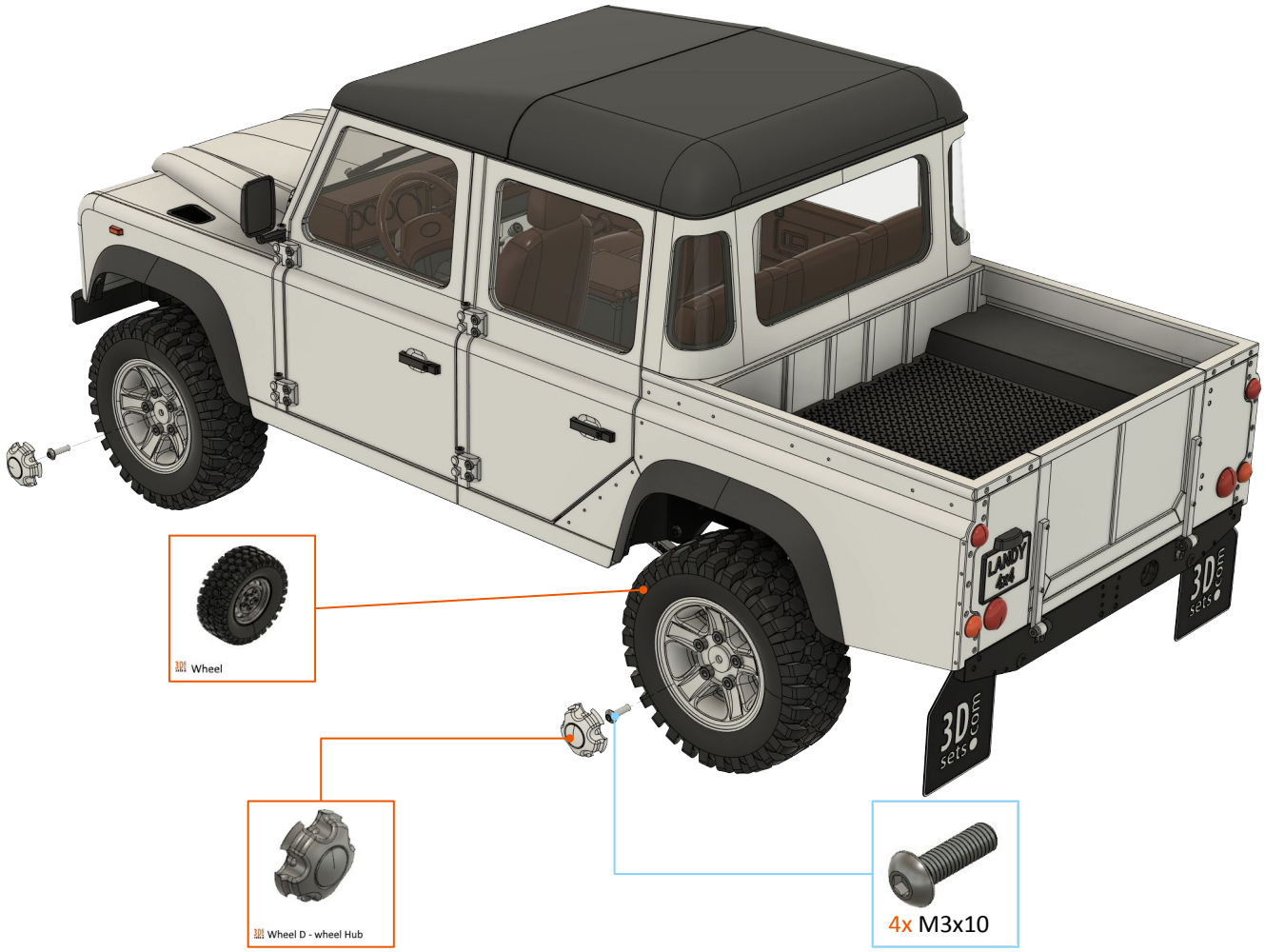
In this 1-step procedure, you will mount 4 wheels on axles.

- Wheel subassemblies

Non-printed parts:

- Screw M2x6: 1 pcs.
- Screw M3x10: 4 pcs.

Pickup Upgrade for Model 5: Wheels D



Pickup Upgrade for Model 5 – final

Pickup Upgrade for Model 5 – general tips

- Always use a proper battery charger. Bad charging of the Li-Pol battery may lead to a risk of fire!
- Disconnect the battery when the model is not used. The small switch on the ESC doesn't disconnect the battery and the ESC may draw a small amount of current even in OFF-state and can fully empty your battery in few days, which can lead to battery damage.
- Do not go into the water unless you have waterproof electronics! Water can damage bearings.

- Adjust the front wheels steering in such a way that the maximum steering angle is about 35 °.
  A greater range of steering angle leads to high stress on the cardan joints and may cause damage.
  If your steering angle is too high, you can shorten the servo arm (use hole closer to servo axis) to reduce it.