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M1 Drive Assembly Guide

Attention!

For best results, follow each step exactly.

To avoid damaging or stripping hardware, use quality metric tools.

Blue threadlocker is highly recommended on all screws.

This guide shows a Kegel adapter with 220mm hangers, but

270mm hangers and other adapters follow a similar process

Preparation:

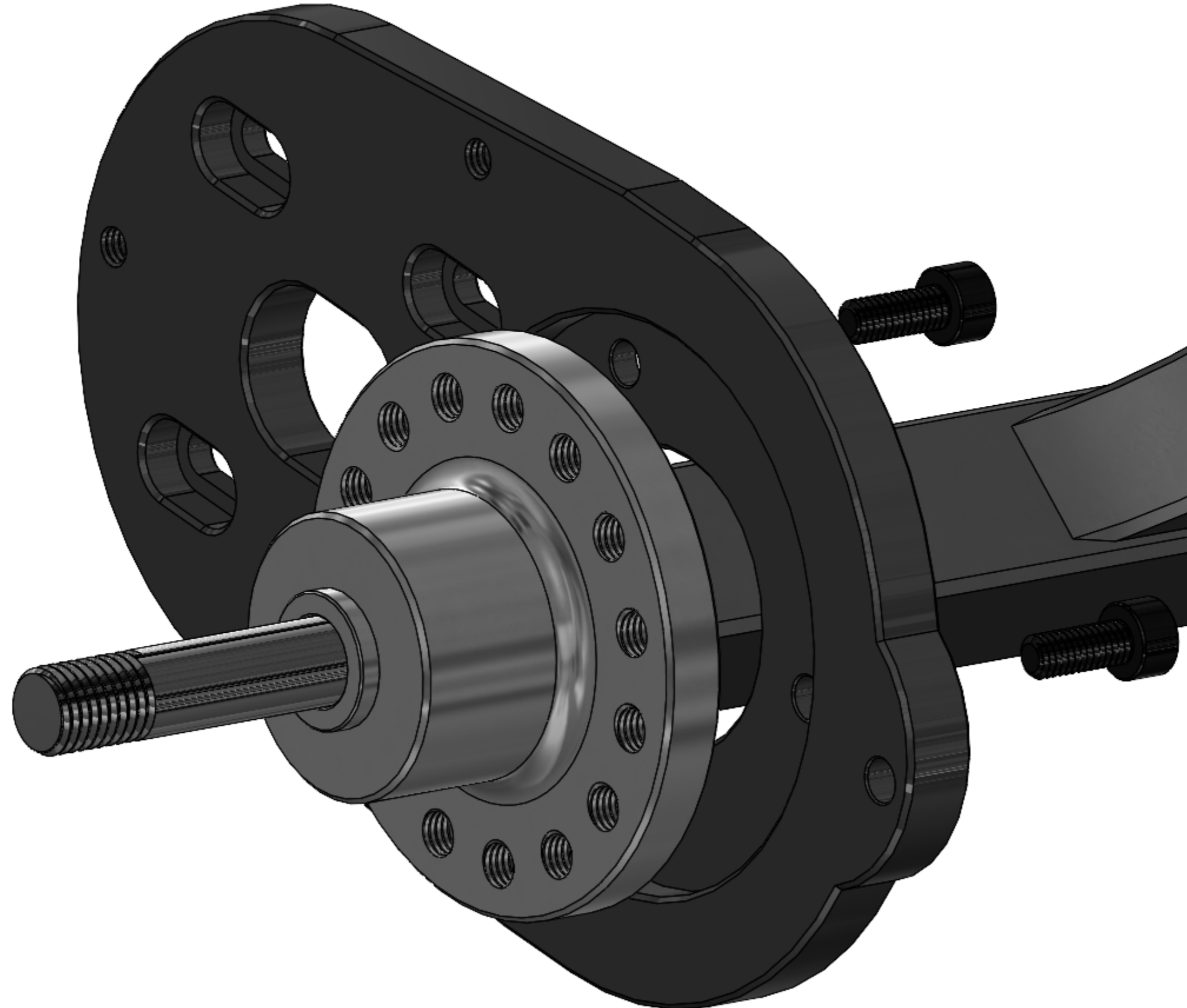
Cut motor shaft to 22mm length using a hacksaw or rotary tool.

You will need 2mm, 2.5mm, and 3mm hex keys.

It's recommended to assemble the gear drive on a hanger that is already installed on a board.

Ensure the fixed axles' threadlocker is cured prior to gear drive assembly

- 1 Slide hanger adapter on the end of the hanger. Secure the arm plate to the adapter as shown and find the desired angle. Fasten using 3 M4 x 8mm screws.

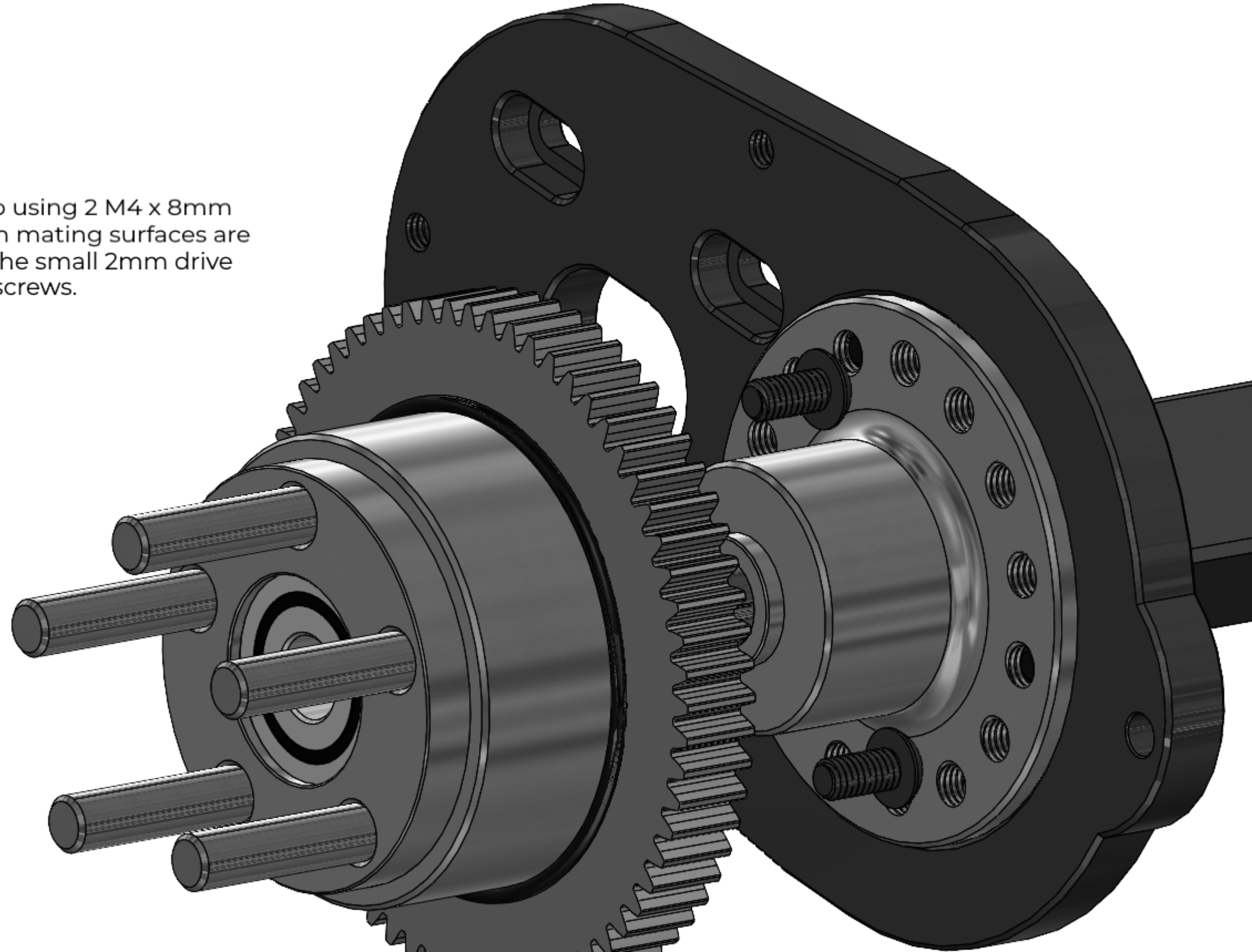


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2 Fasten the 64T gear to the wheel hub using 2 M4 x 8mm button head screws. Ensure that both mating surfaces are clean so the gear sits evenly. Due to the small 2mm drive size, loctite is required for these two screws.

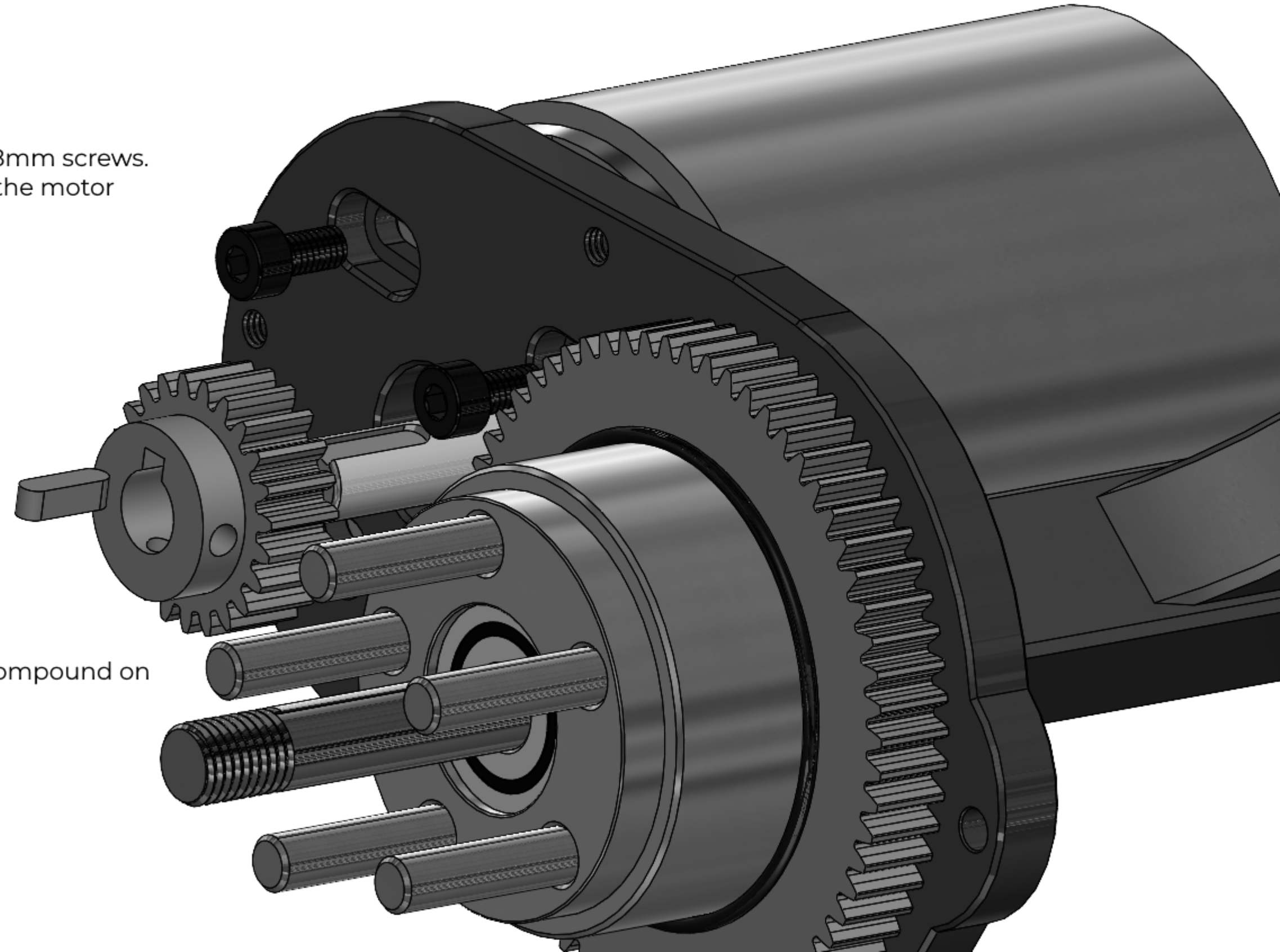
3 Push the o-ring onto the wheel hub until it hits the face of the gear. Insert the 8mm or 10mm bearing into the hub and slide the assembly onto the hanger adapter.



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- 4** Fasten the motor to the plate with 4 M4 x 8mm screws. Do not tighten yet, you will need to adjust the motor in step 6.



- 5** There are two options for securing the motor gear.
Option 1 (Preferred): Use green Loctite 648 or 680 retaining compound on the gear and key. No setscrews. Highly recommended.

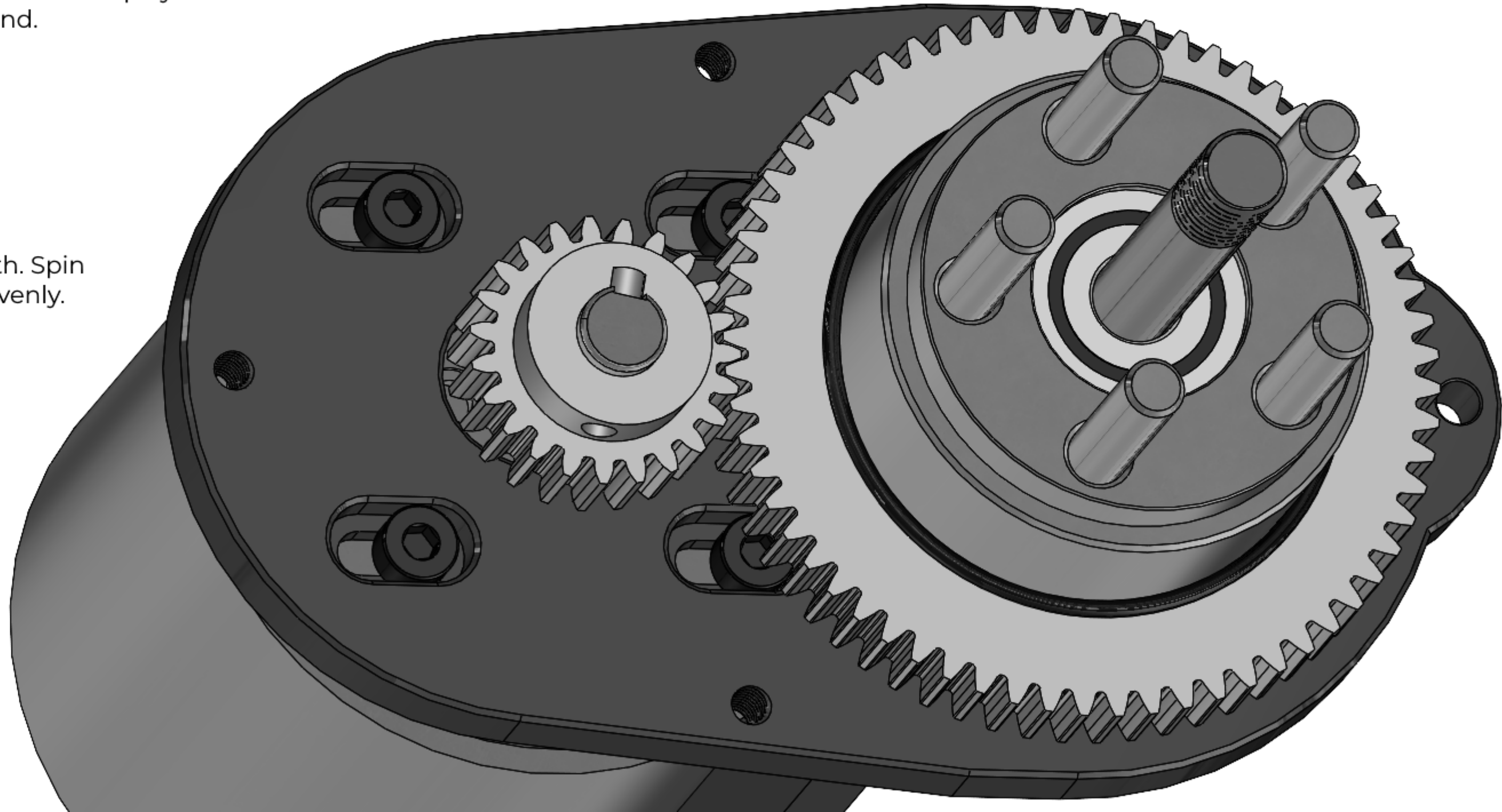
Option 2: Use two M4 set screws. Blue threadlocker required. If the set screws fall out, the gears will become jammed resulting in serious personal injury and permanent damage to the gearbox

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6 Slide the motor to set the gear backlash. Too tight will grind the gears and create excess heat. Too loose will chip and damage the teeth under heavy loading. To properly test the gear mesh, temporarily tighten the 4 motor screws and finish the assembly. Hold the motor with your hands and rotate the wheel. There should be a very small amount of play between the gears, producing a small clicking sound.

7 Place included red grease on the gear teeth. Spin the gears to spread grease onto all teeth evenly. Only a little grease is necessary. Excess grease will increase drag and make a mess.

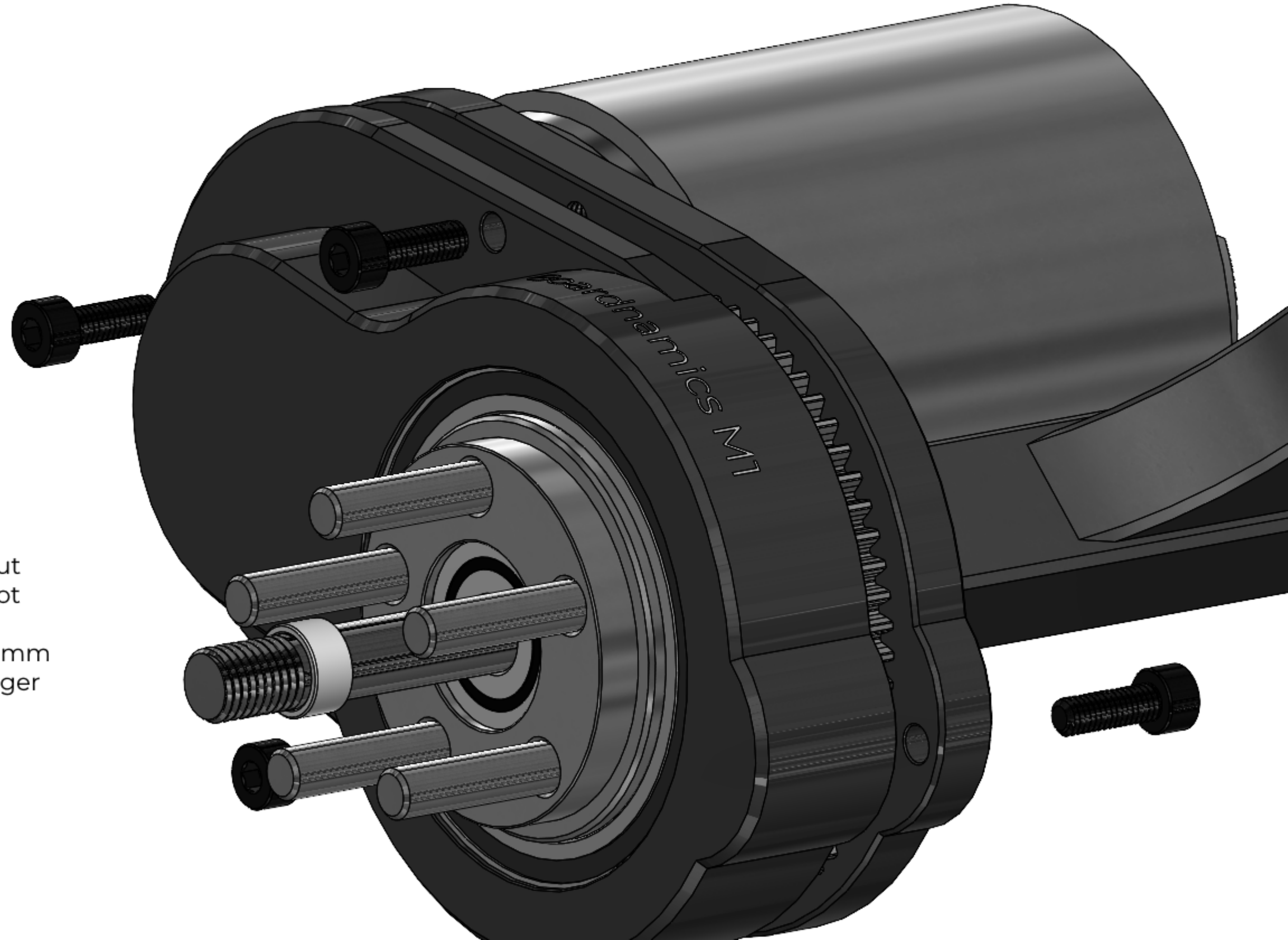


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8 Place the case over the hub and secure using 4 M4x12mm screws. The case bearing has a close fit over the hub. Align case straight to prevent the case bearing from getting stuck on the hub. When tightening the screws, the o-ring will compress, providing a nice seal.

9 Place included spacer on the axle. Without this spacer, tightening the axle nut will not transfer pressure to the gearbox adapter. 184mm/220mm adapter version has an 8mm spacer. 270mm adapter version has a bigger 10mm spacer.



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10 Use wheel of choice, then tighten with an axle nut. The axle nut should be tight, it applies force to the gear drive adapter keeping it from moving.

There is a break-in period. The drag from the drive will decrease after the first 100km as the bearings wear in and the surface of the gear teeth break in.

The future of M1 Drive

Steel helical gear set (ratio 2.85) and straight cut high speed gear set (ratio 2.3)

Helical mountain board gear drive (ratio 4.0)

