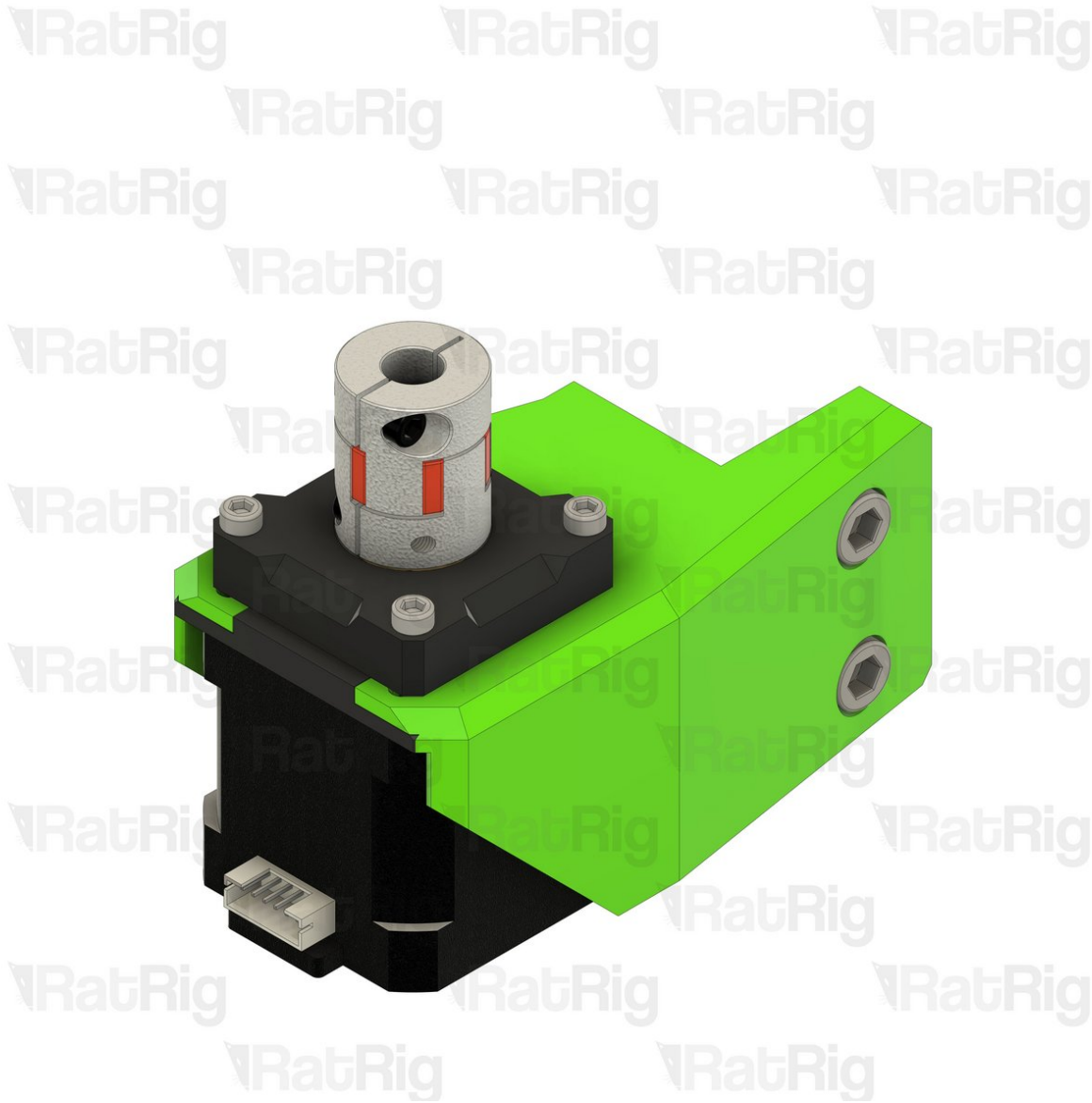


Rat Rig

02. Z-Axis Motor Assembly

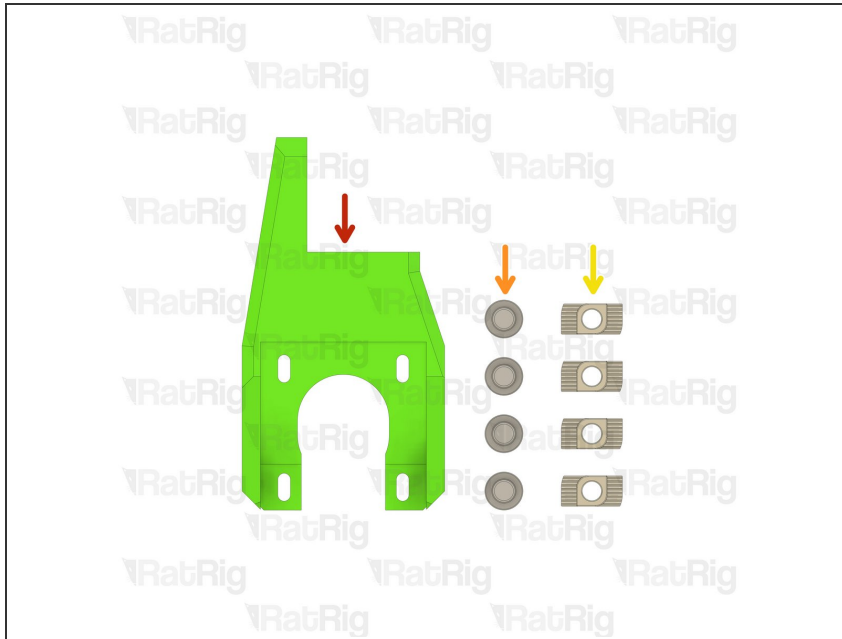
Written By: Simon Davie



INTRODUCTION

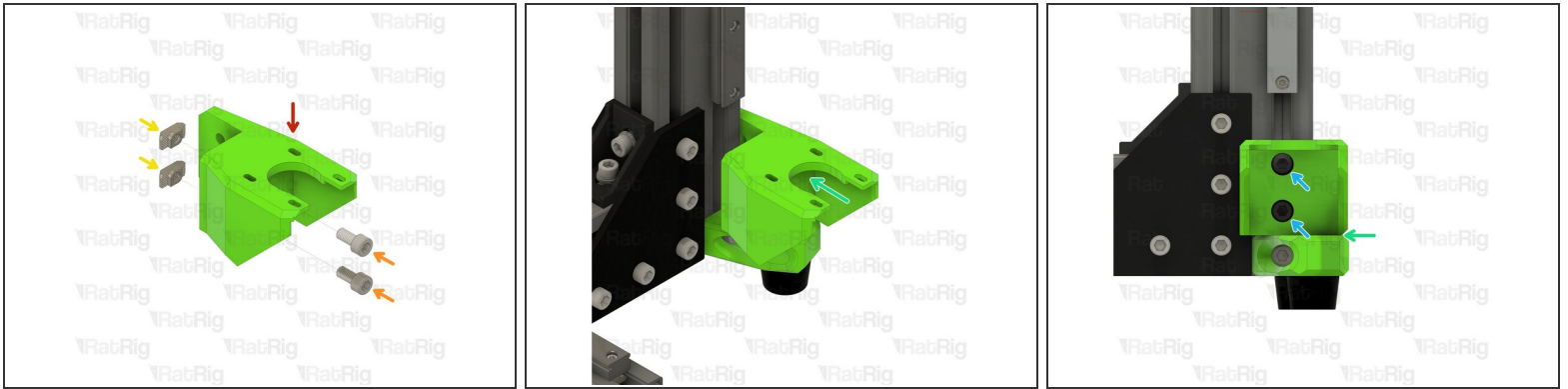
[video: <https://youtu.be/vFvpdAEKcqk>]

Step 1 — Prepare the Z-axis motor mount parts



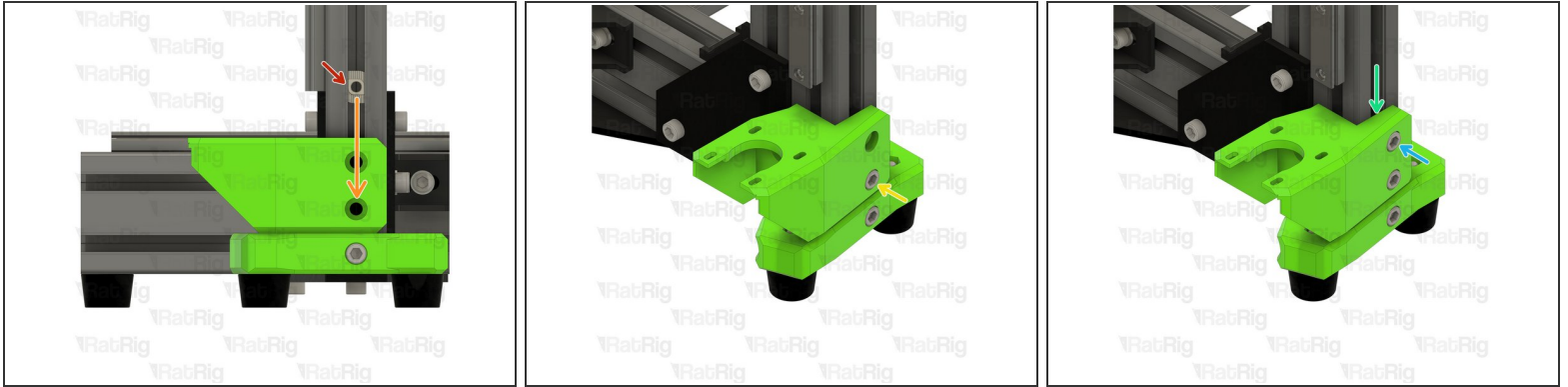
- z_motor_cage printed part
- 4x M6x12 Cap Head Screw
- 4x 3030 Drop-in T-Nut - M6

Step 2 — Assemble & install the Z-axis mount - Part 1



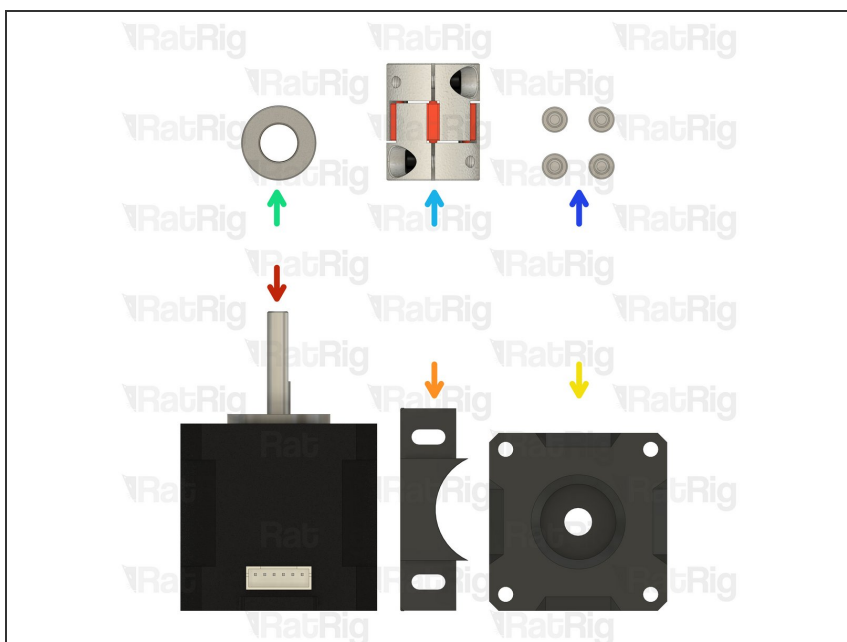
- z_motor_cage printed part
 - 2x M6x12 Cap Head Screw
 - 2x 3030 Drop-in T-Nut - M6
- ⓘ Loosely thread the 3030 T-Nuts onto the M6x12 screws. Do not tighten them at this point.
- Position the Z-axis motor mount as shown. The base should rest on the rear feet
 - Fasten both M6x12 screws to secure the mount to the frame
- ⚠ Take care not to over tighten the M6x12 screws as you can damage the printed part.

Step 3 — Assemble & install the Z-axis mount - Part 2



- 3030 Drop In T-Nut M6
- Slide the 3030 T-Nut behind the lower screw hole on the Z-axis motor mount as shown
- Fasten the M6x12 screw into the 3030 T-Nut
- ⚠ Take care not to over tighten the M6x12 screw as you can damage the printed part
- Slide the 3030 T-Nut behind the upper screw hole on the Z-axis motor mount as shown
- Fasten the M6x12 screw into the 3030 T-Nut
- ⚠ Take care not to over tighten the M6x12 screw as you can damage the printed part

Step 4 — Prepare the Z-axis motor parts



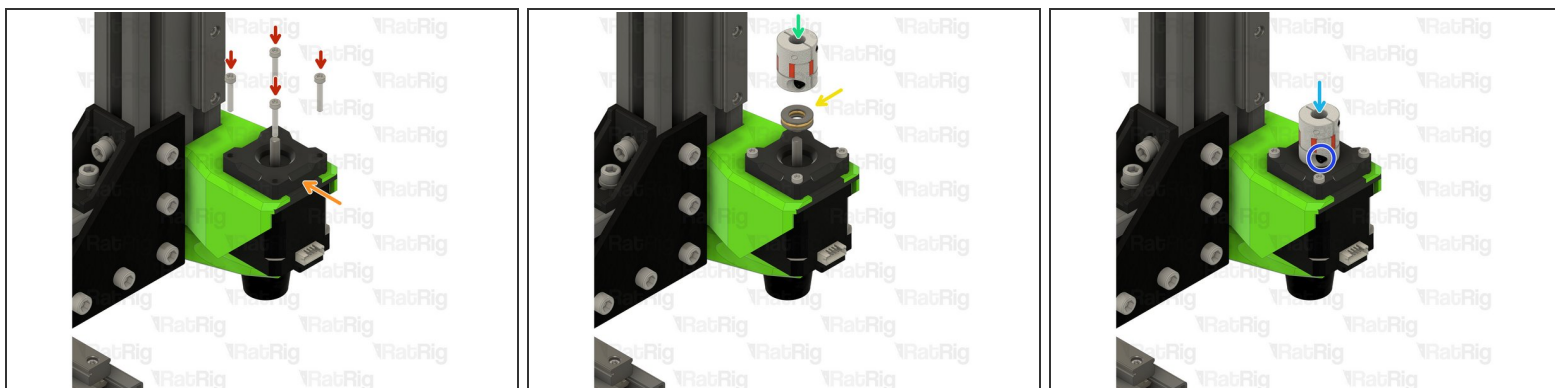
- 1x 40mm NEMA17 Stepper Motor
- z_motor_cage_plug printed part
- pillow_block printed part
- 1x Axial Thrust Bearing
- 1x Spider Coupler
- 4x M3x18 Cap Head Screw

Step 5 — Install the Z-axis motor - Part 1



- 40mm NEMA17 Stepper Motor
 - Slide the stepper motor into the mount as shown
- z_motor_cage_plug printed part
 - Insert the z_motor_cage_plug to fill the gap after the motor is installed
- pillow_block printed part
 - Place the pillow_block printed part on top of the motor mount. The stepper motor shaft should pass through the middle

Step 6 — Install the Z-axis motor - Part 2



- 4x M3x18 Cap Head Screw
 - The holes in the Z-axis motor mount are slotted to allow adjustment. This will be performed at a later step. For now, push the motor as far back (towards the frame) as possible and fasten all four M3x18 screws
- ⚠ Take care not to over tighten the M3x18 screws as you can damage the printed parts
- Install the axial thrust bearing over the shaft of the stepper motor. It should sit within the pillow_block printed part
- Spider Coupler
 - Apply downwards pressure on the spider coupler to compress the axial thrust bearing
 - Tighten the lower screw on the spider coupler whilst applying downwards force as stated above

Step 7 — Next guide



i Continue with the next guide: [03. Y-Axis Motor & Idler Assemblies](#)

