

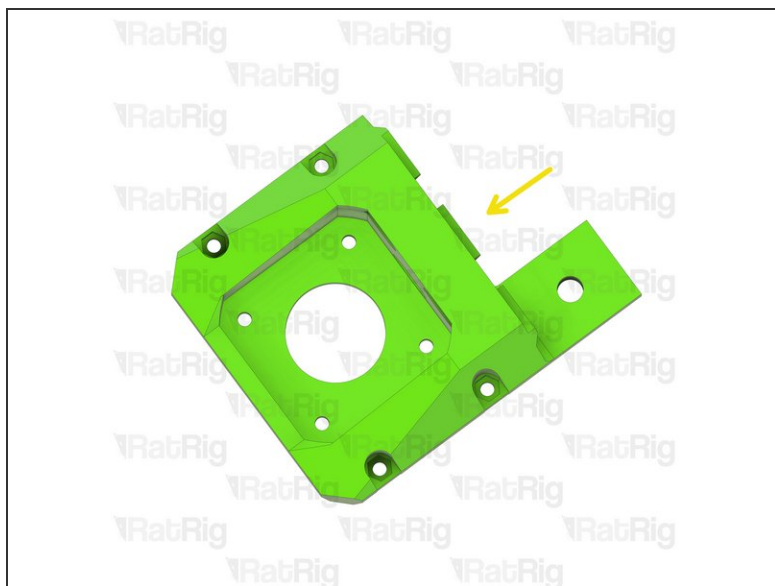
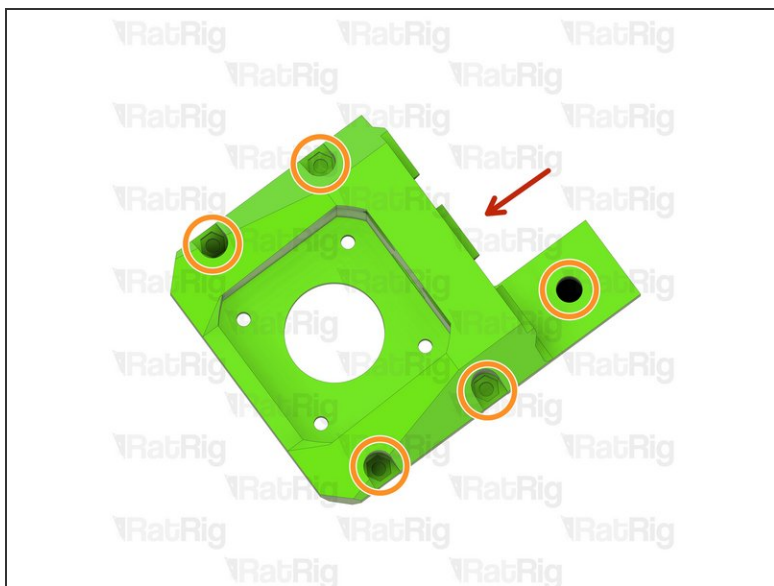
Rat Rig

00. Preparations

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Step 1 — Prepare the printed parts



- ⓘ Several of the V-Core 3.1 printed parts have sacrificial layers which need to be removed prior to assembly
- ⓘ It is recommended to remove them by using a screwdriver, a hex key, or a drill, to push through the layers. This clears the holes for the screws.
- lead_screw_motor_cage_back_3.1 printed part
- Sacrificial layers to be cleared
- Prepared printed part

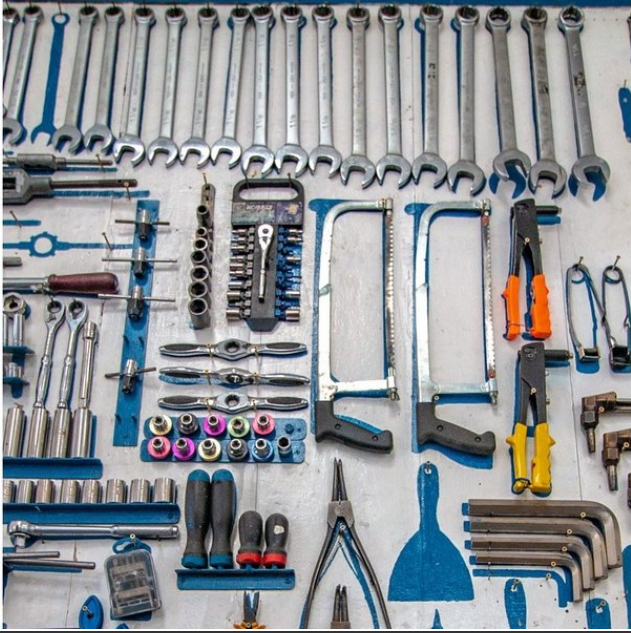
Step 2 — Sacrificial layer part list



 The following printed parts have sacrificial layers which require clearing:

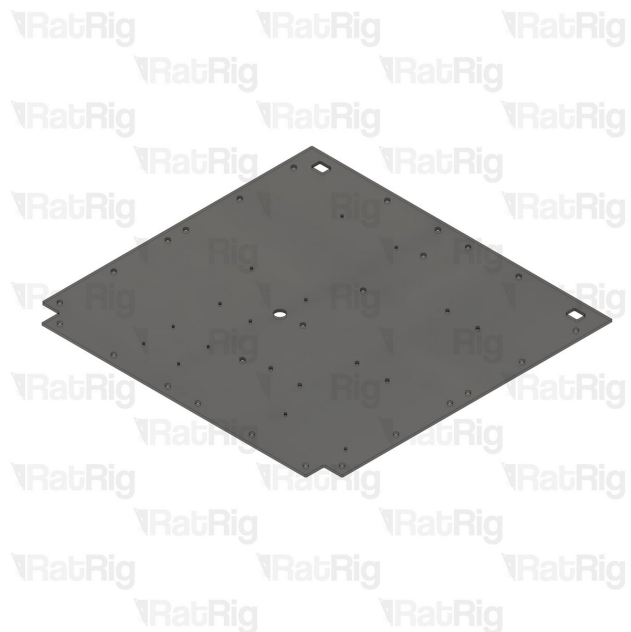
- Bed arms: left, right & rear
- Leadscrew motor cages: front left, front right & rear
- XY Idler: left & right
- XY Motor Cage: top left, top right

Step 3 — Recommended tools



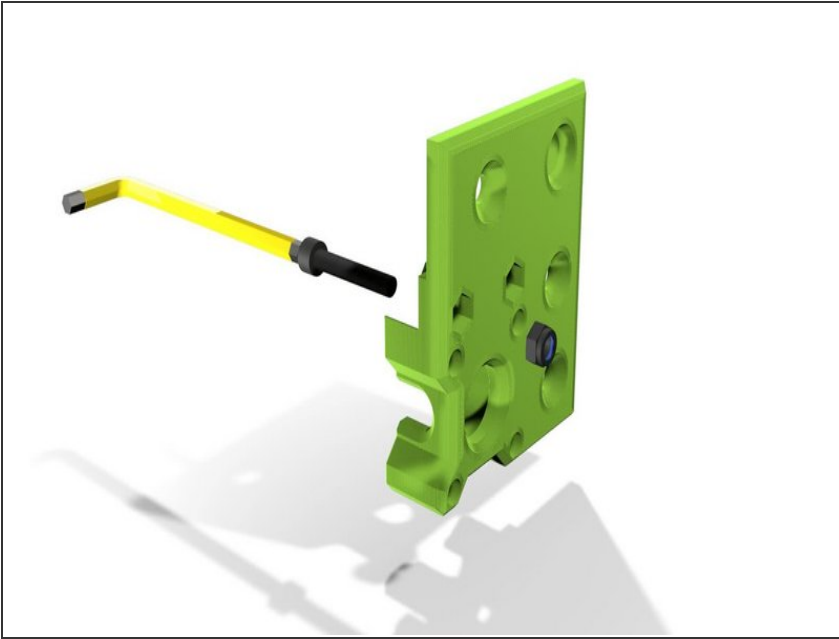
- ❗ It is recommended to have the following tools available for assembling the V-Core 3.1:
 - Allen Key / Hex Wrenches in the following sizes: 2.5mm, 3mm, 4mm, 5mm & 6mm
 - Wire cutters & a wire stripper
 - Tape measure or calipers
 - Crimping tool
 - Cross slot / philips screwdrivers
 - Flat / straight screwdrivers
 - Engineers Square




Step 4 — Electronics panel



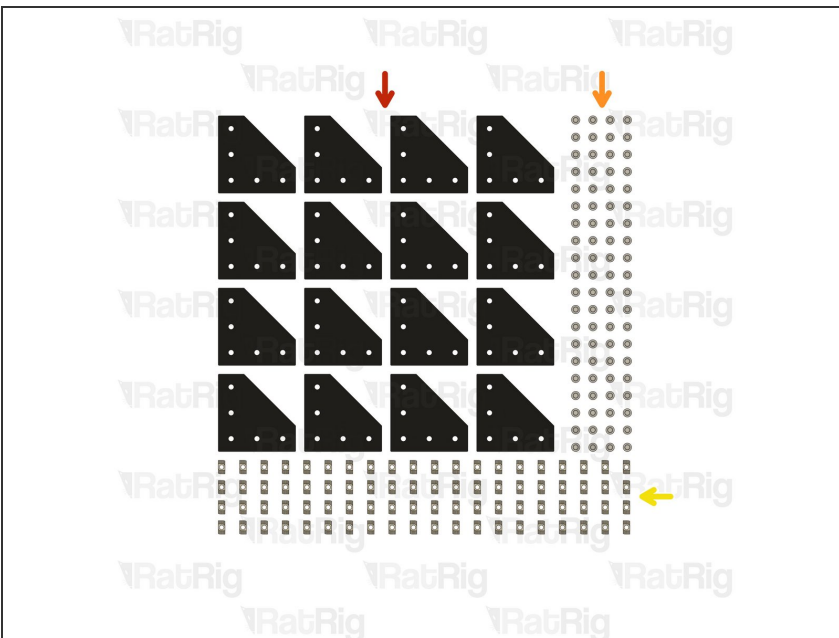
- ⚠ The V-Core 3.1 electronics panel is not provided as part of the kit, and must be sourced separately
- ❗ It is **highly** recommended to source this panel prior to beginning the V-Core 3.1 build, as it is very difficult to install the full panel on an assembled frame
 - Source files, in multiple formats, are available for all panels on [the Rat Rig GitHub repository](#)




Step 5 — Installing hex nuts into printed parts



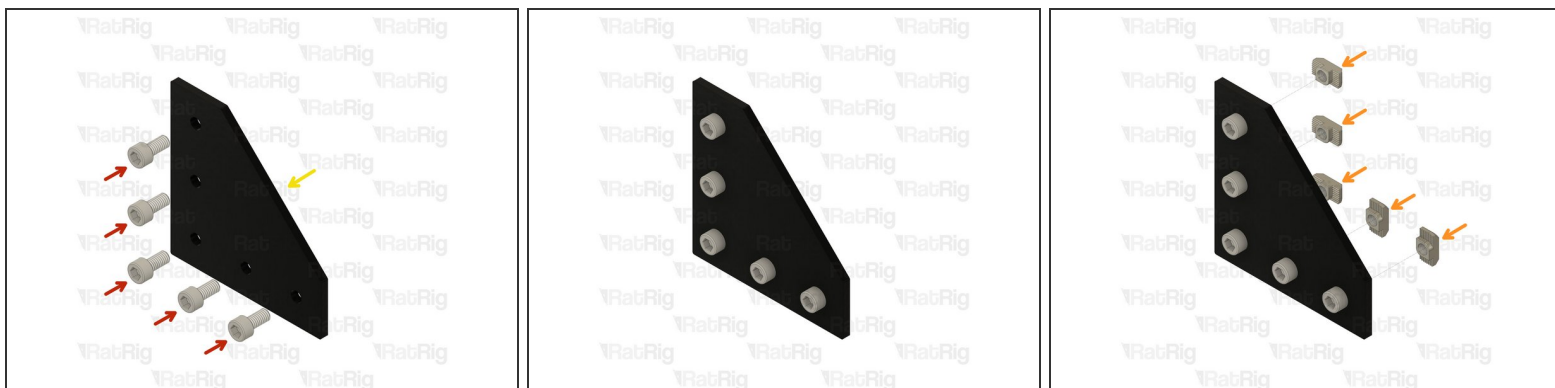
-  Occasionally you will need to install a hex nut into a printed part
-  The hex nut needs to be fully pulled into the printed part to ensure there are no issues with assembly or cross threading
-  This animation shows an example of how to use a cap head screw to pull a hex nut into a printed part

Step 6 — Prepare the parts for the corner plates



-  16x 3030 Corner Plate
-  80x M6x12 Cap Head Screw
-  80x 3030 Drop-in T-Nut - M6

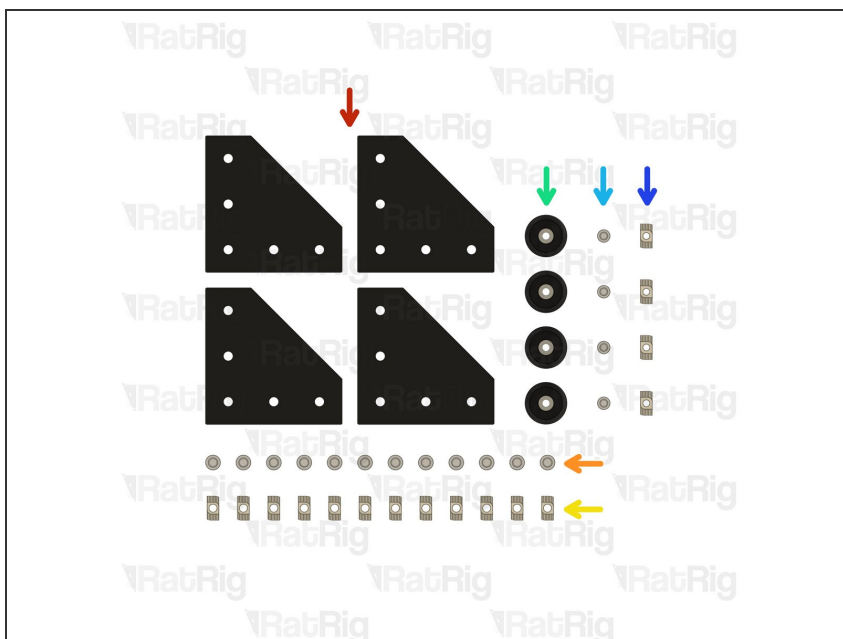
Step 7 — Assemble the corner plates (x16)



- M6x12 Cap Head Screw
- 3030 Drop In T-Nut M6
- Corner Joining Plate for 3030

i Loosely thread the 3030 T-Nuts onto the M6x12 screws. Do not tighten them at this point.

Step 8 — Prepare the parts for the base corner plates



- 4x 3030 Corner Plate
- 12x M6x12 Cap Head Screw
- 12x 3030 Drop-in T-Nut - M6
- 4x Rubber Foot with Metal Insert
- 4x M5x18 Cap Head Screw
- 4x 3030 Drop-in T-Nut - M5

Step 9 — Assemble the base corner plates A (x2)

- M6x12 Cap Head Screw
- M5x18 Cap Head Screw
- Rubber Foot with Metal Insert
- 3030 Corner Plate
- 3030 Drop-in T-Nut - M6
- 3030 Drop-in T-Nut - M5

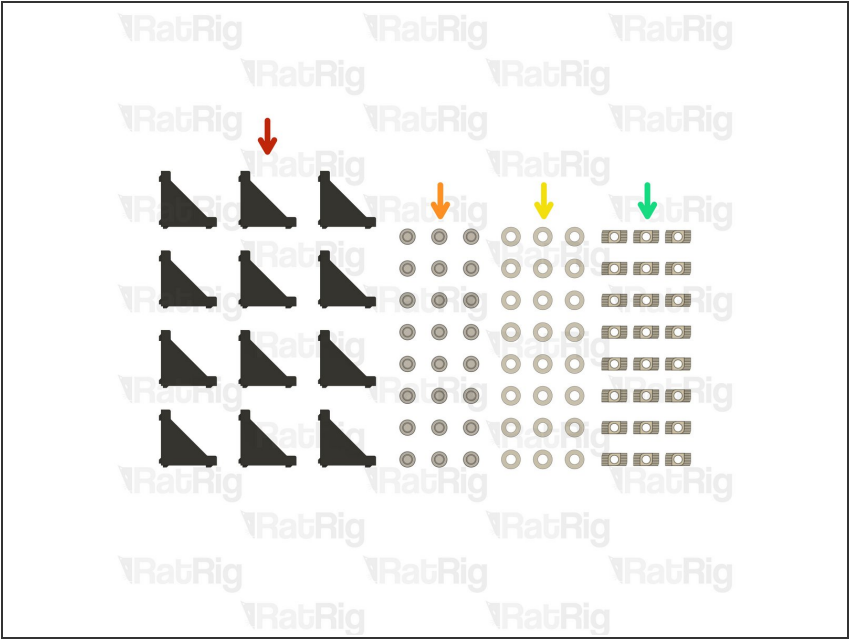
i Loosely thread the 3030 T-Nuts onto the screws. Do not tighten them at this point.

Step 10 — Assemble the base corner plates B (x2)

- M6x12 Cap Head Screw
- M5x18 Cap Head Screw
- Rubber Foot with Metal Insert
- 3030 Corner Plate
- 3030 Drop-in T-Nut - M6
- 3030 Drop-in T-Nut - M5

i Loosely thread the 3030 T-Nuts onto the screws. Do not tighten them at this point.

Step 11 — Prepare the 90 degree corner parts



- 12x 90 Degree Cast Corner
- 24x M6x12 Cap Head Screw
- 24x M6 Washer
- 24x 3030 Drop-in T-Nut - M6

Step 12 — Assemble the 90 degree corners (x12)

- M6x12 Cap Head Screw
- M6 Washer
- 3030 Drop-in T-Nut - M6
- Cast 90 Degree Corner Bracket for 3030

 Loosely thread the 3030 T-Nuts onto the M6x12 screws. Do not tighten them at this point.

Step 13 — Next guide

- Continue with the next guide: [01. Frame Assembly](#)