Y axis assembly

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Y axis sub-assemblies

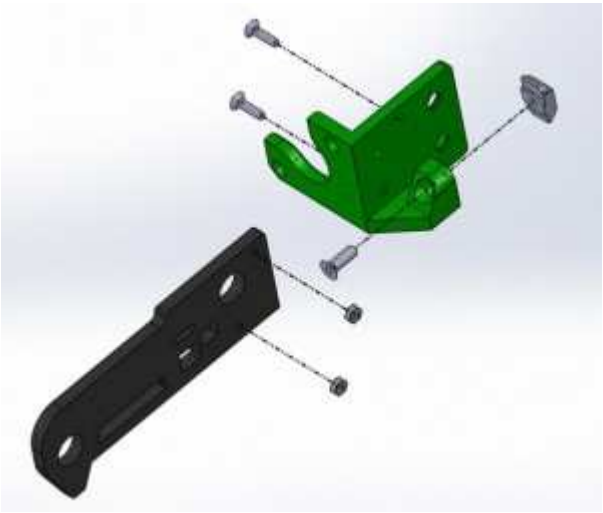
Y-motor-end and Y-idler-end

TIP: Click on the bold names of the printed parts in the component lists. This opens a new window, showing the part in the Github stl viewer, so you can identify the part more easily.

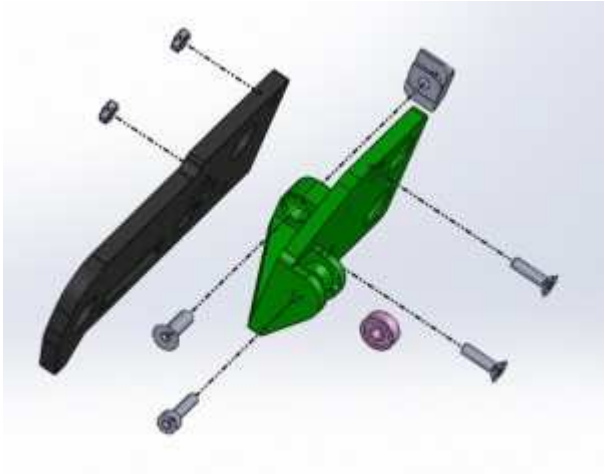
Component	Type	Quantity
y-idler-bracket	Printed	1
y-motor-bracket	Printed	1
y-axis-end-plate	Lasercut	2
M3 Nut	Fastener	4
M4 T-nut	Fastener	2
M4x12mm countersunk socket head screw	Fastener	2
M3x12mm countersunk socket head screw	Fastener	4

TIP: Click on pictures in the instructions to see a larger version.

Begin by assembling the Y-motor-end, as shown. Use y-axis-end-plate ‘A’ with the y-motor-bracket. The 12mm holes will be slightly larger in diameter on one side of the y-axis-end-plate, the side with the letter ‘A’, which will make it easier to insert the 12mm ground steel bar later.



Repeat with the y-axis-idler-bracket, using y-axis-end-plate ‘B’, to build the y-idler-end.



The Y axis ends assembled.

Y-idler-end bearing

Now fit the 623 idler bearing to the y-idler-end, for which the following are required:

Component	Type	Quantity
y-idler-end	Assembled	1
M3x12mm cap head screw	Fastener	1
623 bearing	Hardware	1

The retaining screw (M3x12mm) should self tap into the printed part, with no need for a nut on the free end. It may require a fair bit of force to push the bearing into position.

Y axis frame

The next step is to assemble the Y axis frame. For this you will need the following:

Component	Type	Quantity
y-idler-end	Assembled	1
y-motor-end	Assembled	1
Alumninium extrusion	Hardware	1
LM12UU Linear bearing	Hardware	3
Smooth rod 12x350mm	Hardware	2
M6x16mm countersunk socket head screw	Fastener	4

Screw one of the Y axis ends onto the Aluminium extrusion, using two M6x16mm countersunk socket screws.

Ensure the M4 T-nut is located in the extrusion slot.

Next you will need to fit the ground rods into the y-axis-end-plate. The 12mm diameter holes are sized to be an interference fit with the rods, and the Acrylic laser cut plates are quite brittle so care must be taken when inserting the rods not to break the end plates.

Place the Y axis assembly on the edge of a flat surface to support the end plate, then press each rod in turn into the plate. Keep the rod perpendicular to the plate whilst pushing. You can use a small hammer on a piece of wood on the end of the rods if necessary.

Before fitting the idler end assembly, slide the linear bearings onto the rods. Press the idler end assembly onto the free ends of the rods, making sure you support the other end so as not to break the idler plates. With the ends pushed home, fix the idler end assembly using two M6x16mm countersunk socket screws, and tighten the M4 T-nut.

Y axis motor

Now you can fit the Y axis motor. For this step you will need the following:

Component	Type	Quantity
y-axis-frame	Assembled	1
NEMA17 stepper motor		1
M3x8mm countersunk socket screw	Fasteners	2
M3x40mm	Fasteners	1

socket cap
screw

One screw needs to be removed from the back of the motor as shown.

Fit the motor into the printed y-motor-bracket. Secure the motor in place with 2 x M3x8mm countersunk socket screws in the front face

Put one M3x40mm socket cap screw in the back, where you took out the motor screw.