These are the instructions to assemble the RMU-Mk3. If you have assembled your own Prusa i3 Mk3 printer, this is easy!

To complete the assembly, you will need the parts listed on the next page. You will have received this list if we supplied the components for you to assemble. The instructions apply to assembling the BF002 and BF003.

If you have a BF001, please start on Page 16.

These instructions are showing pictures for the MOD-T but the MOD-S is identical apart from the location of the pass through adaptors.

We have put a lot of effort into the RMU and we hope you are very happy with it. This is not an open-source product as we ask you to respect this and not share the STL files.

We would love to see your setup when you have installed the RMU so please send us photos!

Printed Parts	
Part	**Quantity**
Group 1	
Idler Wheel	5
Group 2	
Axis Pin	2
Axis Pin Washer	4
Catch Base Lower	1
Catch Base Upper	1
Catch Lever	1
Upper Bracket	1
Lower Bracket	1
T Nut	2
Tube Tidy	1
More Tube Tidies can be added as needed.	
Group 3	
Lower Body	1
Top Door (Left or top feed)	1
Upper Body (Left or top feed)	1

Hardware	
Part	**Quantity**
M3x10 Cap Head Screw	14
M3x20 Cap Head Screw	6
M3 Hex Nut	10
PC4-M10 Passthrough fitting	10
4mm OD PTFE Tubing	2m total
608zz ball bearing	5

PTFE Tube Lengths	
Tool	**Length (mm)**
T0	400
T1	410
T2	420
T3	430
T4	450
Total:	2110

Check BOM against supplied parts.

Mod-S & Mod-T Top Section Sub Assembly

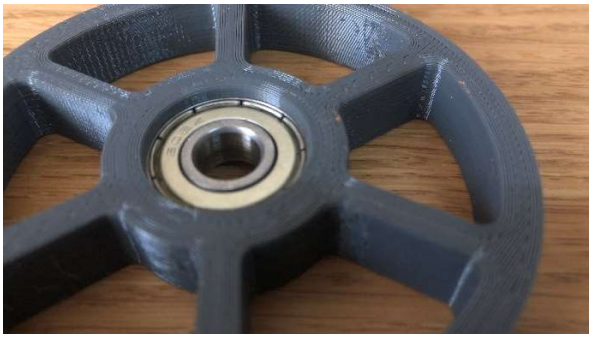
1. Assemble Idler Wheels

Select the following items
5 x 608zz bearing
5 x Idler Wheels

Push the bearings into the wheels - The bearing should push in with a little resistance into each wheel. When in place, turn over the wheel

There should be no gap between the bearing and the face it is pushed into.

Correct



The bearing is pushed to the flange

Incorrect

The bearing is not pushed to the flange

2. Fit Idler Wheels to the Mod-S or Mod-T top

Take each wheel and push it into the top. The ribs will bend open. Push each wheel in until it snaps into place.

Gently prize the ribs of the Top Door apart.

Press each Idler Wheel into position.

Check all wheels spin freely.

Side view of the Idler Wheels in the Top Door

Insert one Axis Pin into the assembly taper end first. You will not have to force the pin in, you will need to align the wheels to help the pin into the assembly. Push it through firmly until the end of the pin is flush with the outer casing of the Mod-S or Mod-T Top Door.

Note the tapered end on the pin to aid assembly.

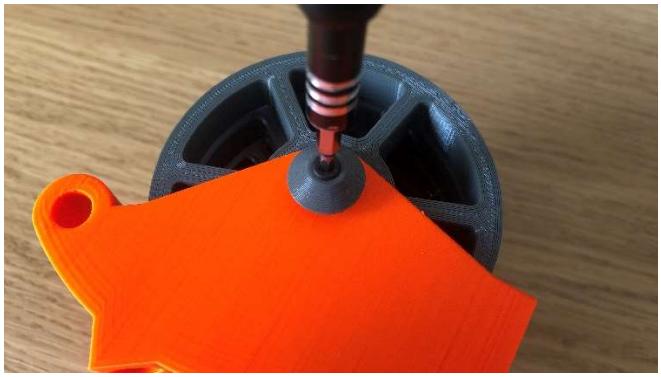
The flat edge of the pin should align with the flat in the hole.

Select the following parts

2 x M3 x 10 screws
2 x Axis Pin Washer

Push one screw into each Axis Pin Washer

Assemble the Axis Pin Washer onto the Mod-S or Mod-T top assembly as shown.



Screw the M3 x 10 pin in until the Axis Pin Washer touches the outside face of the Top Door

Screw the other Axis Pin Washer into the other side. Screw it in until the Axis Pin washer touches the outside face of the Top Door.

The wheels should spin freely but they should have no sideways movement.

3. Fit the Top Door assembly to the Upper Body

Select the following parts

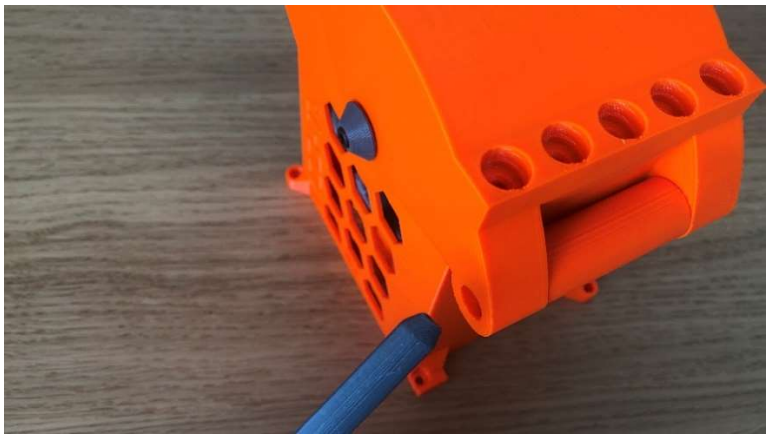
2x M3 x 10 screws
2 x Axis Pin Washer

Push one screw into each Axis Pin Washer

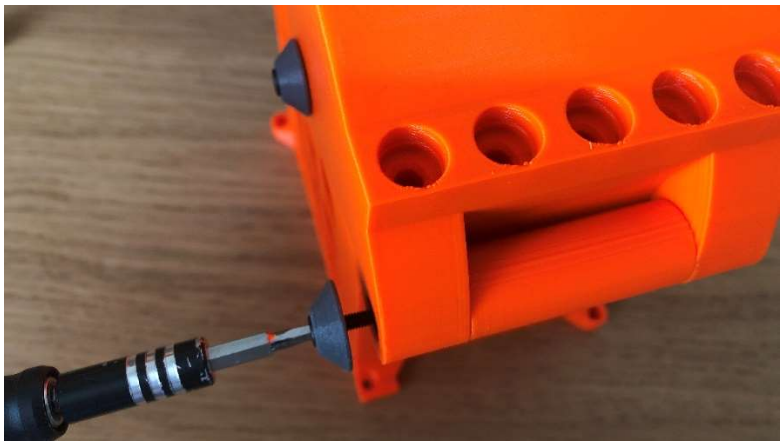
Place the Top Door into the Upper Body

Push the Axis Pin into the hinge hole on the Top Door.

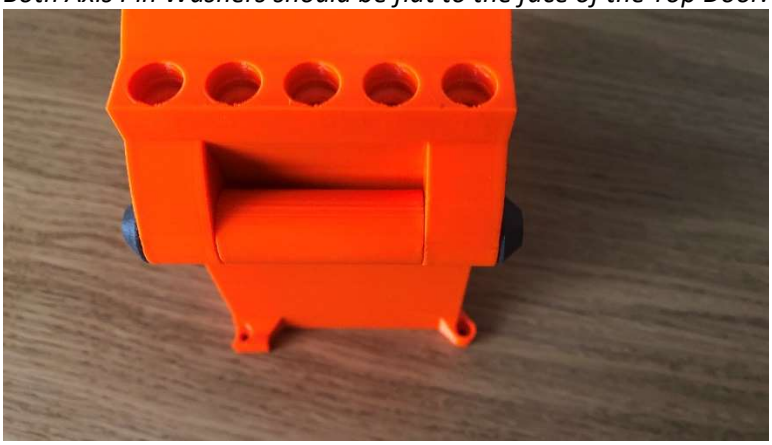
The flat edge of the pin should align with the flat in the hole.



Push the Axis Pin fully in until it is flush with the face of the Top Door.



Both Axis Pin Washers should be flat to the face of the Top Door.



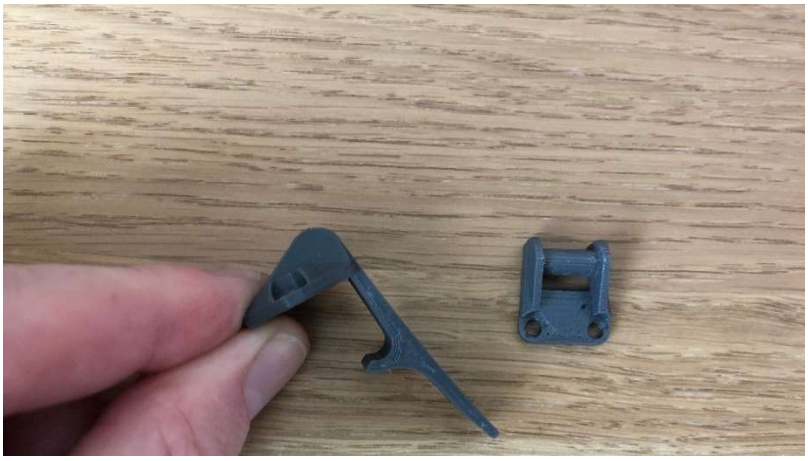
Note! Tighten the pins until the Axis Pin Washer is flat against the face of Top Door. The top door should open and close smoothly but there should not be any play in the hinge. Adjust the Axis Pin Washer tightness until the Top Door moves correctly.

4. Fit the Catch Assembly to the Upper Body Assembly

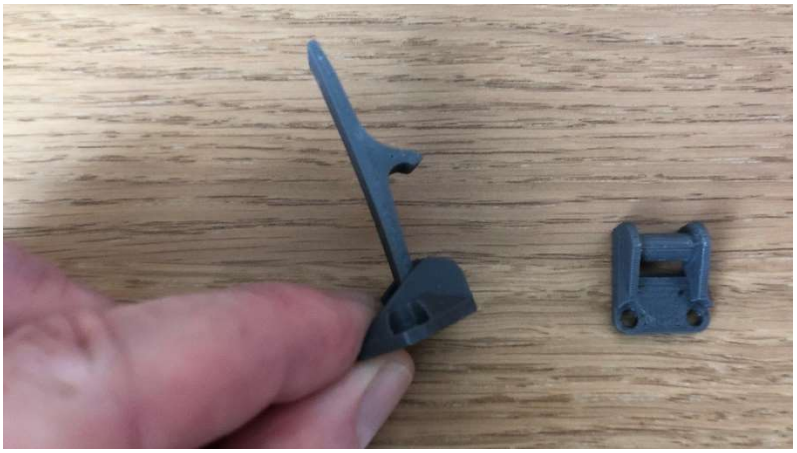
Select the following parts

Catch Base Upper
Catch Base Upper
Catch Lever
4x M3x 10 Screws

Assemble the Catch Lever onto the Catch Base Lower as shown.

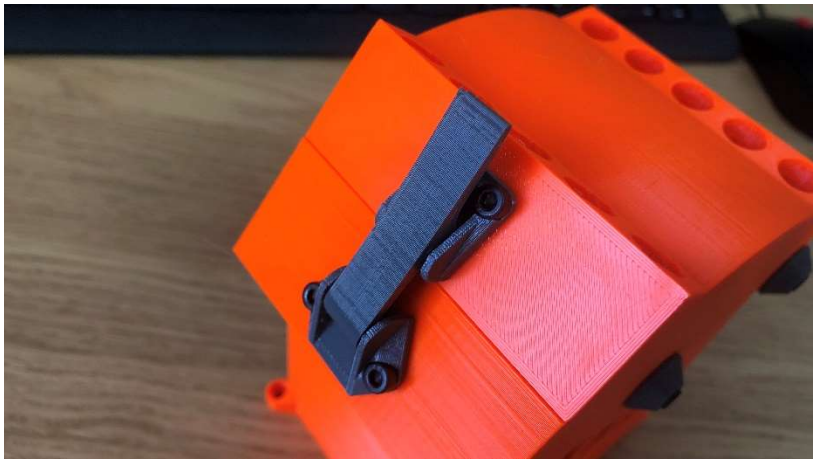


Move the Catch Lever to the position shown, ready to assemble to the Mod-S or Mod-T upper body.



Screw the Catch Base Upper to the Top Door
Screw the Catch Base Lower to the Upper Body

Once assembled. test the catch. It should have a nice firm click action without being too tight and it will hold the Top door securely closed.



5. Fit the Pass Through Adaptors to the Upper Body Assembly

Select the following parts

10 x PC4-M10 pass through adaptor.

Loosely screw the pass through adaptors to the Upper Body Sub Assembly.
The location for the pass through adaptors shown is for the Mod-T. The Mod-S is similar.

As you screw in each pass through adaptor, make sure it aligns with the one next to it. Screw all of them in finger tight.

NOTE! there are different pass through adaptor threads available. smaller threads will go in further by hand. Do not worry. We have carefully designed the RMU-Mk3 to allow all PC4-M10 adaptors to fit.

Carefully tighten each Pass Through Adaptor using a 10mm spanner or Socket

In the picture below, you can see the Pass Through Adaptor. No thread should be visible so the left adaptor is incorrect. The other four adaptors are correct.

When all the Pass Through Adaptors are fitted, they should look like the picture below.

You have completed your Mod-S or Mod-T Upper Body Assembly.

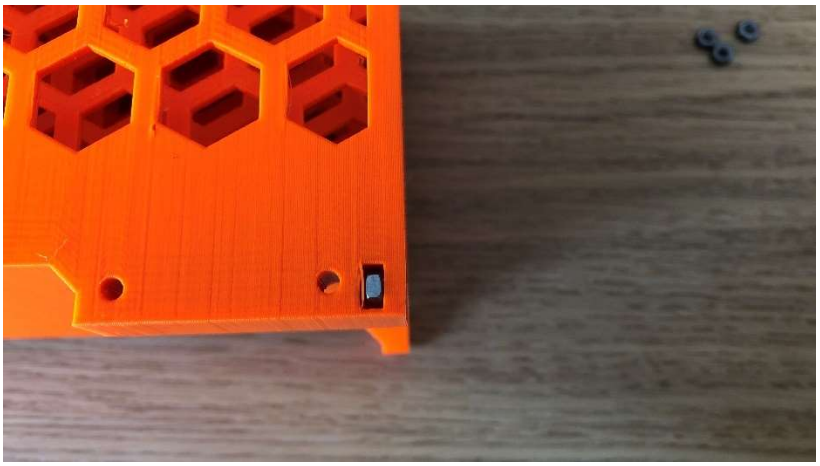
Full Body Assembly of the RMU-Mk3

1. Fit the Upper Body Assembly to the Lower Body

Select the following parts

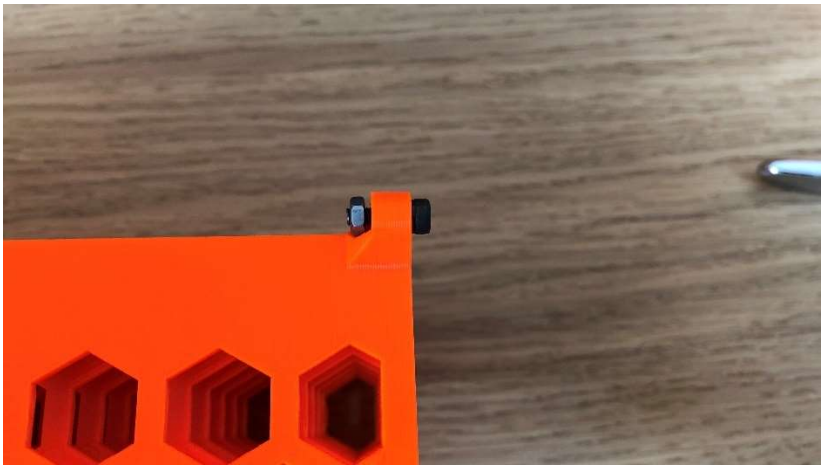
4 x M3 x 10 screws
4 x M3 Hex Nuts
1 x Lower Body
1 x Upper Body Assembly (Mod-S or Mod-T)

Push one Nut into the slot as shown.



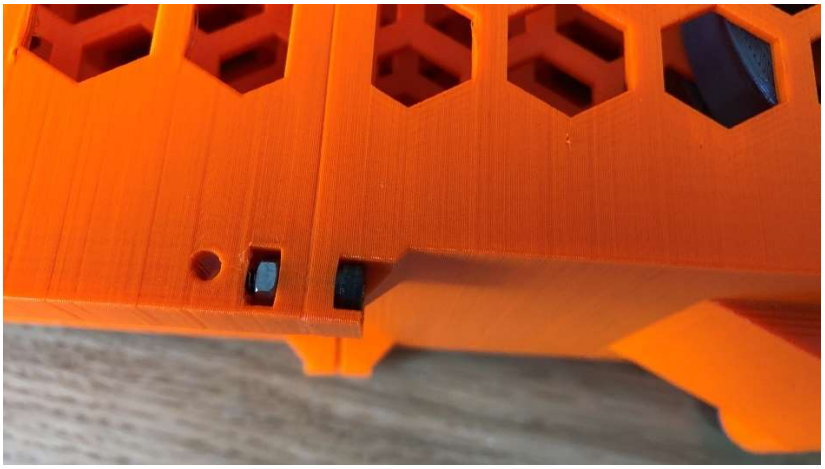
Place the other three nuts into the empty lugs.

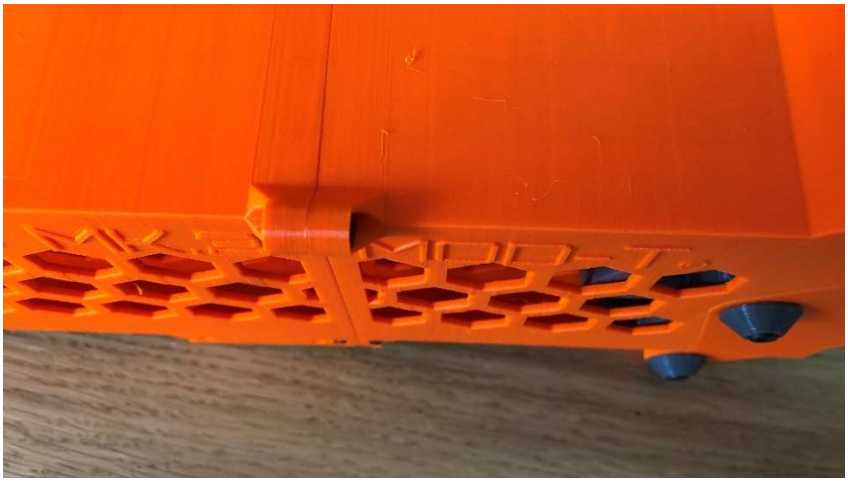
Note! if the nuts are a bit tight, use one of the screws to pull them into place before trying to assemble the Upper and Lower Body Assemblies.

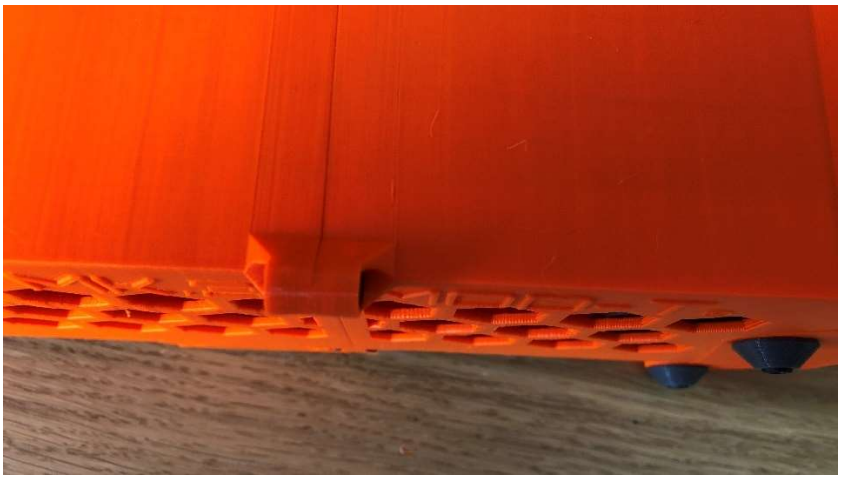


The nuts should all be fitted into the bottom of each lug.

Assemble the body. Fit a M3 x 10mm screw and screw it in, tighten until the faces of the upper and lower bodies are touching.

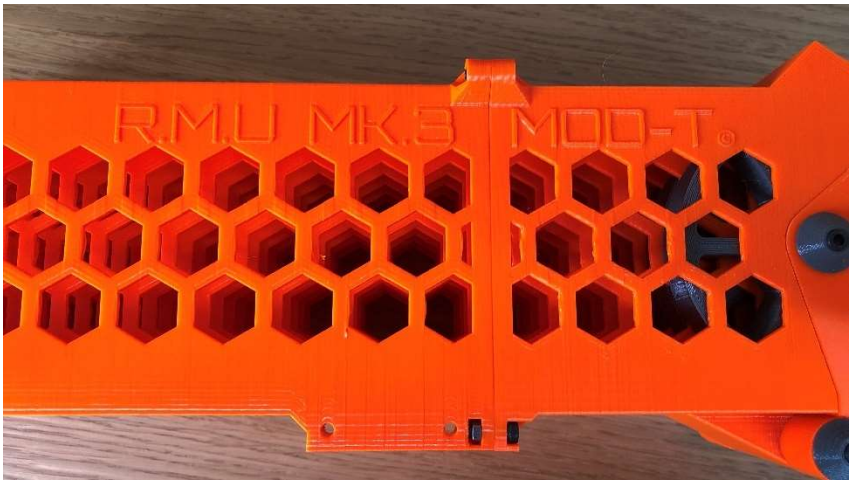






Tighten all 4 screws evenly so the upper Body assembly and Lower body Assembly are joined together properly.

Congratulations. Just a few more steps are required to complete the assembly.

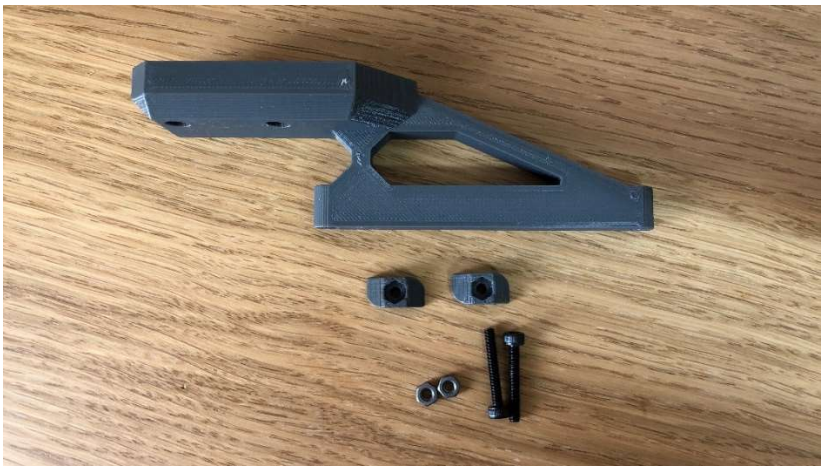


Fitting the RMU-Mk3 to your Prusa i3 Mk3 Printer

1. Assemble the Lower Bracket

Select the following parts

1 x Lower Bracket
2 x T Nuts
4 x M3 Hex Nuts
2 x M3 x 20 Screws



Use a screw to pull the nuts flat into the hole if necessary.

Align the T Nuts as shown ready to fit to the frame in the i3 Mk3 printer.

2. Assemble Upper Bracket

Select the following parts

Upper Bracket
2 x M3 Hex Nut

Fit the Nuts in the small end of the Upper Bracket. Use the same method to seat the nuts if they are tight in the holes.

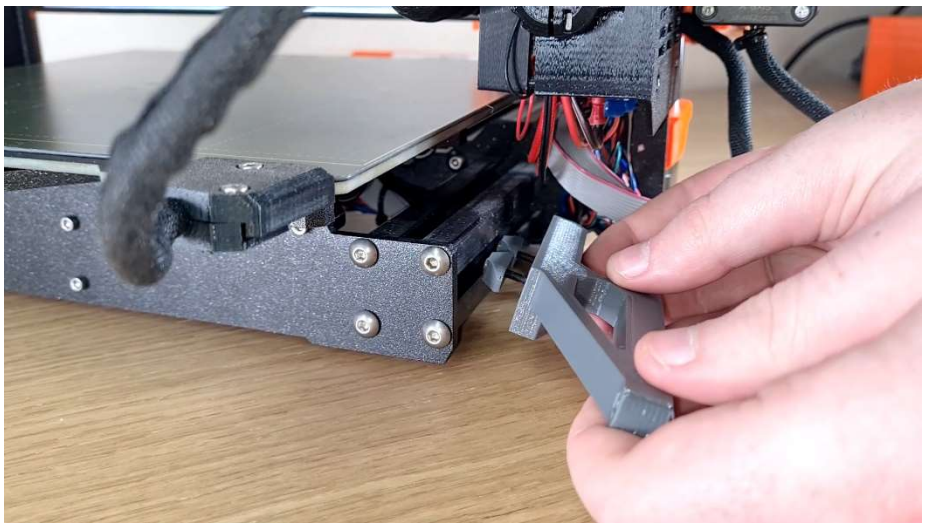
Final Assembly: RMU to i3

1. Assemble Lower Bracket to i3 Mk3 Printer

Select the following items

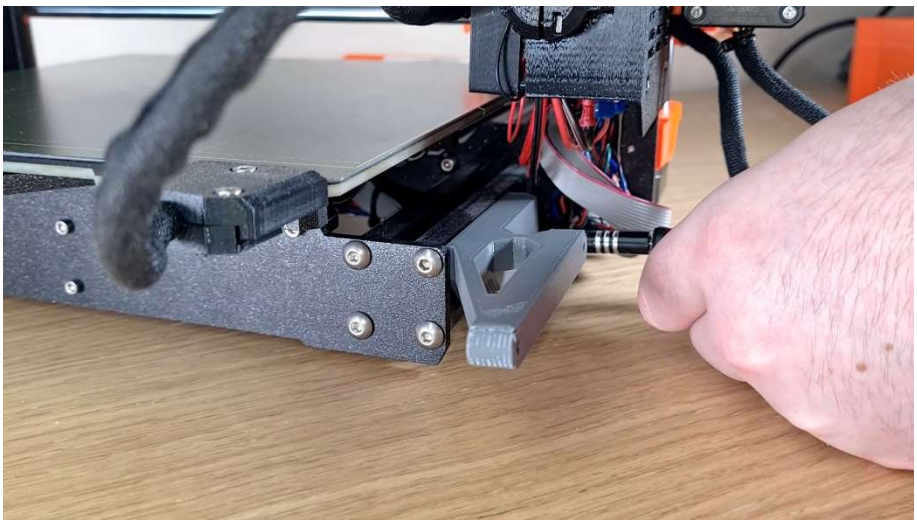
Lower Bracket Assembly

Present the Lower bracket to the rear frame of the i3 printer, below the Einsy Rambo casing.
Push the T Nuts into the slot



Turn in the two screws until the Lower Bracket is close to the face of the i3 printer.
Slide the Lower Bracket backwards on the i3 printer frame until it touches the rear face of the i3 printer and then tighten the screws.

Check bot T Nuts engage properly. The bracket will not tighten to the frame if they are not.



Assemble Upper Bracket to i3

Select the following items

Upper Bracket Assembly
2 x M3 x 10 screw

The top Bracket is fitted to the rear of the Z axis frame. The top hole is shown here.

Using the two M3 x 10 screws, attach the large end of the Upper Bracket the frame of the i3 as shown.

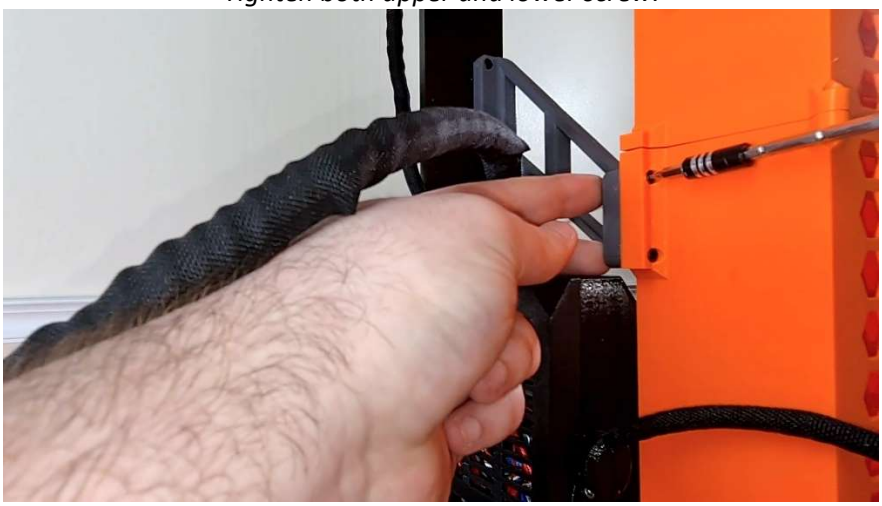
2. Assemble RMU-Mk3 Body Assembly to the Upper and Lower Brackets

Select the following items

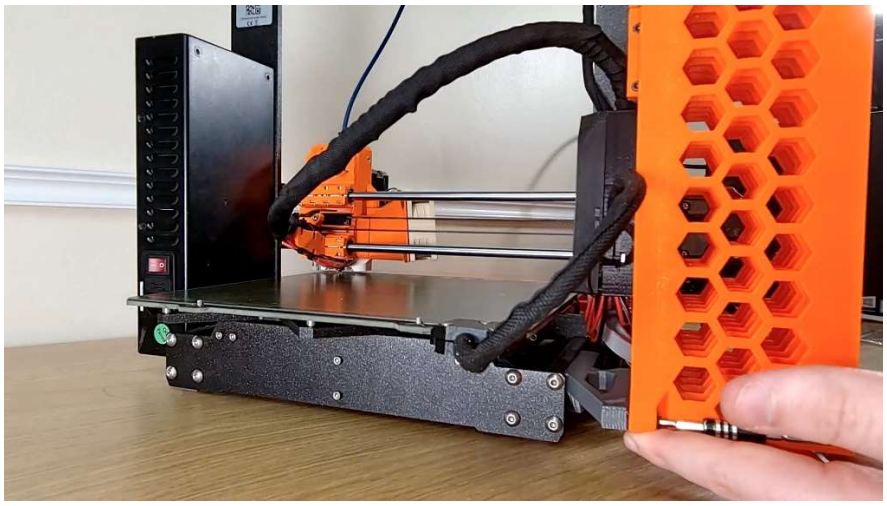
RMU-Mk3 body assembly
4 x M3 x 20 screws

Hold the RMU next to the Upper Bracket and insert one M3 x 20 screw into the upper hole. Screw it into the Upper Bracket as shown
Add the lower screw.

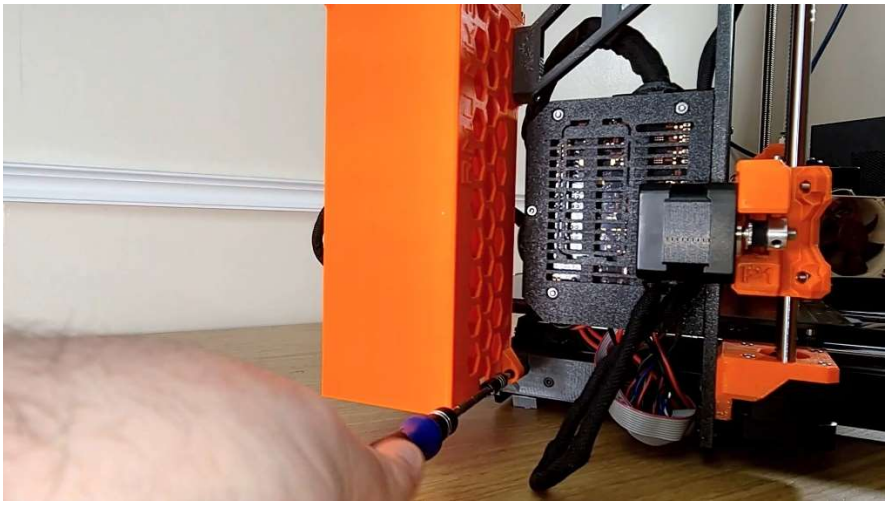
Tighten both upper and lower screw.



Insert the M3 x 20 screw to the lower rear mounting on the RMU and screw it to the Lower Bracket



Finally, fit the last M3 x 20 screw into the final mounting hole on the RMU-Mk3, Screw it into the Lower Bracket as shown

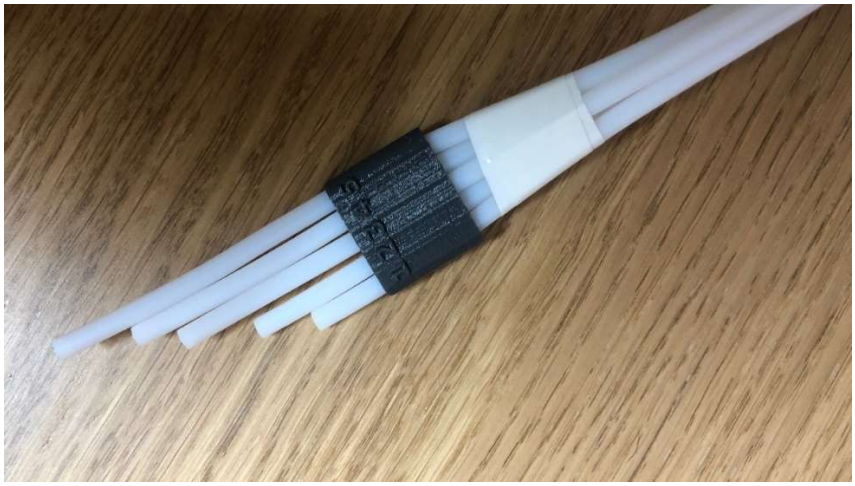


1. Assemble PTFE Tubes to the RMU and MMU

Select the following items

5 x PTFE tubes
1 x Tube Tidy

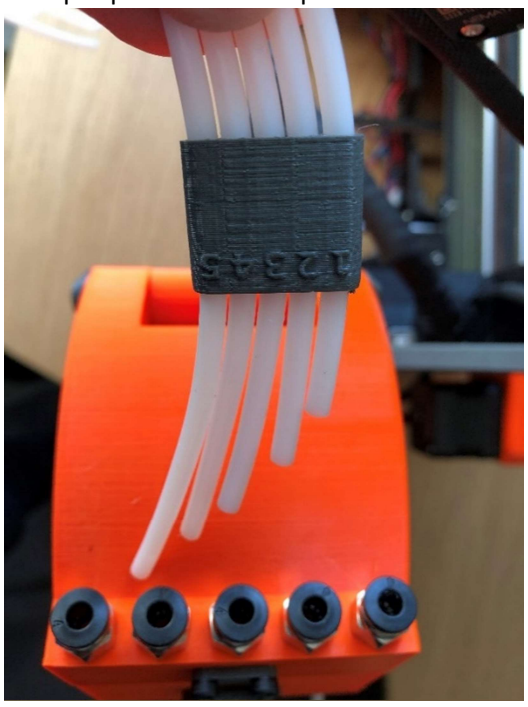
Do not cut the tape on the tubes.
One end of the bundle of PTFE tubes has different lengths.
Slide the Tube Tidy onto the end of the tubes as shown.



Select the PTFE Tube set. With the Tube tidy still attached.

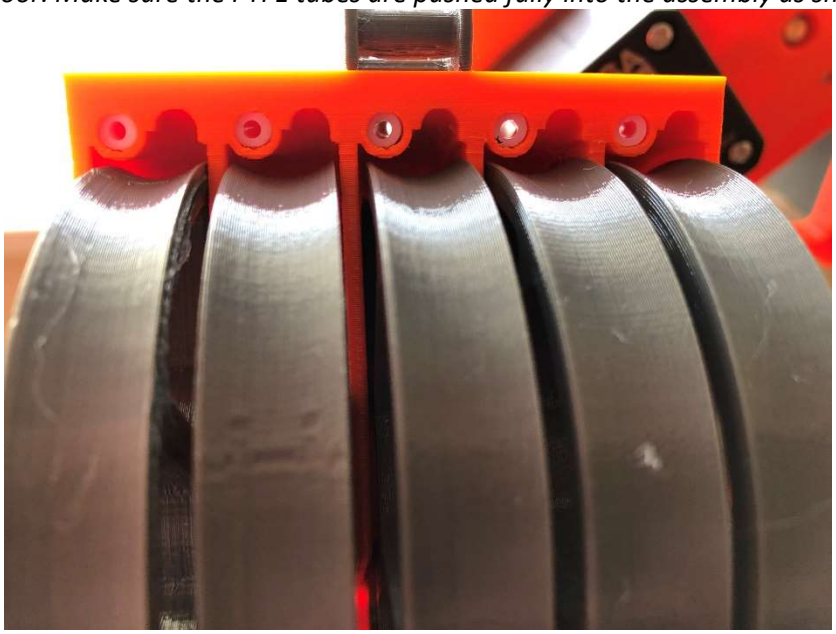
Carefully cut the tape. **DO NOT DAMAGE THE TUBES!!!!**

Insert the PTFE tubes into the output points on the top of the RMU-Mk3 as shown below.

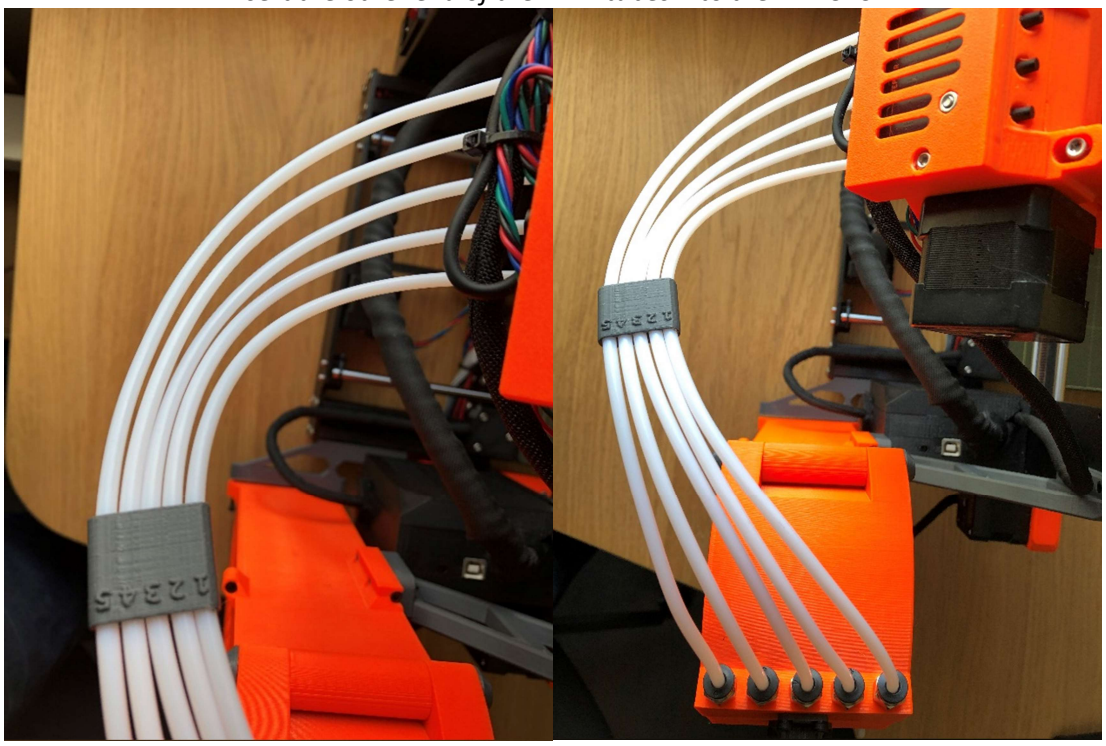


NOTE! The tube tidy is numbered to aid assembly.

Open the Top Door. Make sure the PTFE tubes are pushed fully into the assembly as shown.



Insert the other end of the PTFE tubes into the MMU2S.



WELL DONE!

That is the end of the assembly of the RMU-Mk3.

We hope that the RMU will be trouble free but you can contact us info@filamentbuffer.co.uk if you are having any problems.

We may make small changes periodically to the design to improve it. We will keep all of our customers up to date on changes as they occur and you will be able to print out your own updates if you want them.