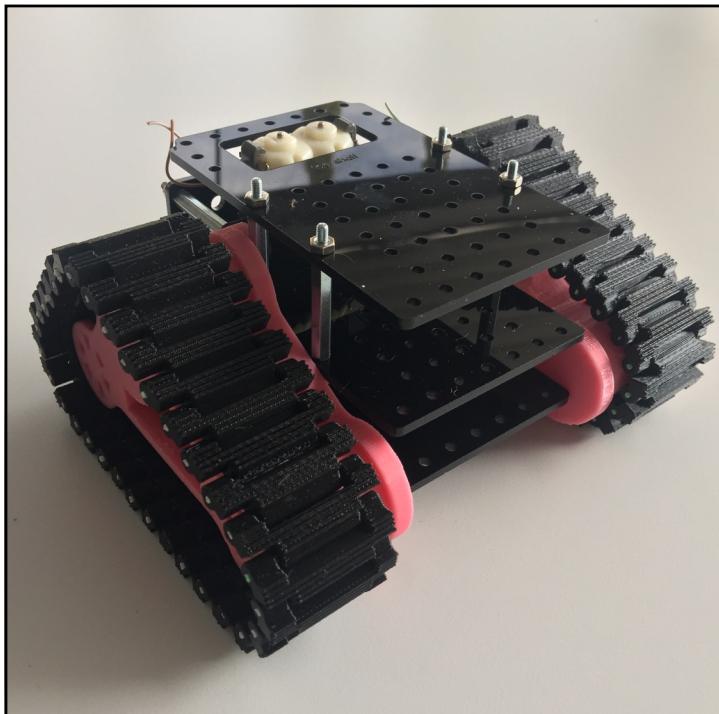


## MR 6 – Prototyping Version

Print Suggestions  
And  
Assembly Guide

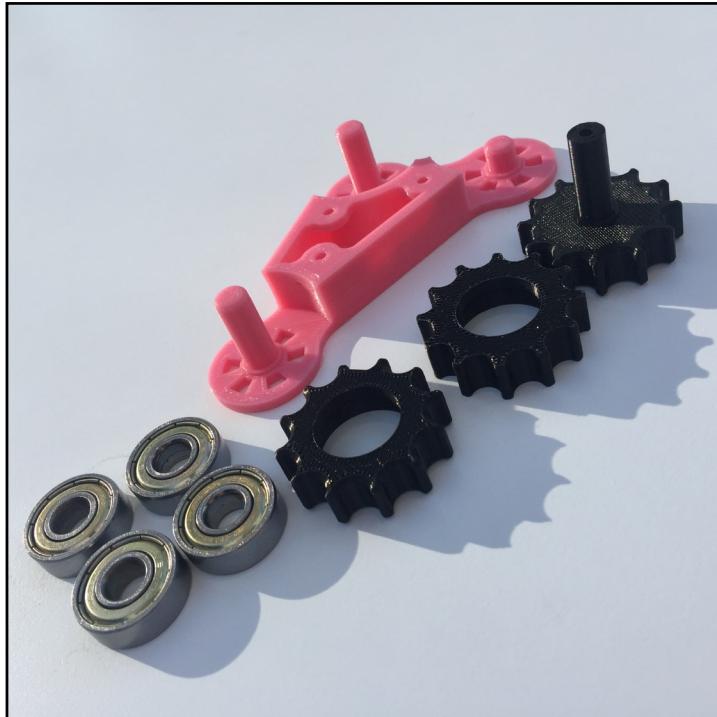


## MR 6 – Prototyping Version

### Important:

The tolerances of this design are very tight. I have had different results using the same print settings, but with different spools of PLA. I have had very limited success with ABS parts. Sometimes the parts go together with ease – other times they are very tight.

NOTE: These instructions do not include any electronics beyond the motors the robot is designed around.



1

**Print Parts:****RHS\_Outer\_Track\_Frame.stl**

Supports=Yes;Infill &gt;60%

**Blank\_Cog.stl**

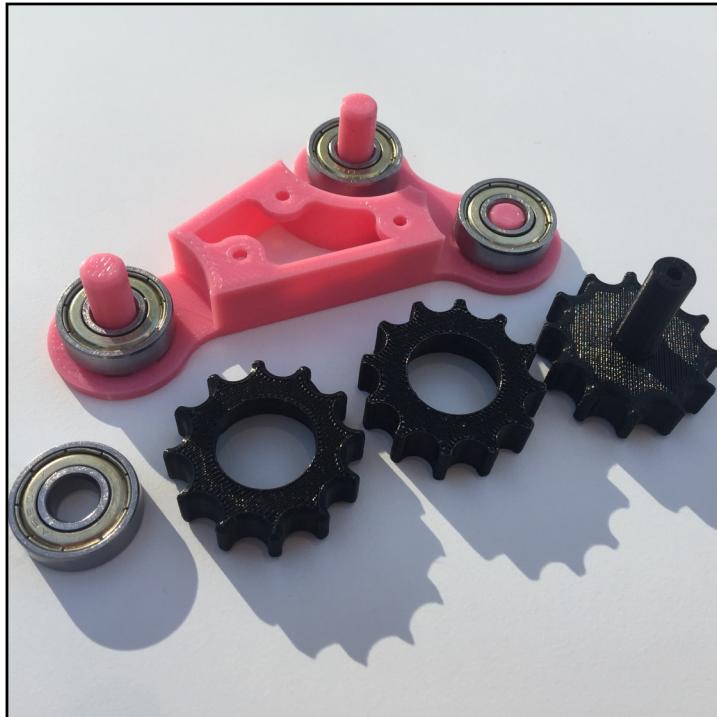
Supports=NO;Infill &gt;20%

**Spindle\_Cog.stl**

Supports=Yes;Infill=as high as possible

**Other Parts:****4 x 22mm skateboard bearings**

(8mm bore, 7mm thick)



2

Carefully push a bearing over each of the three axles.

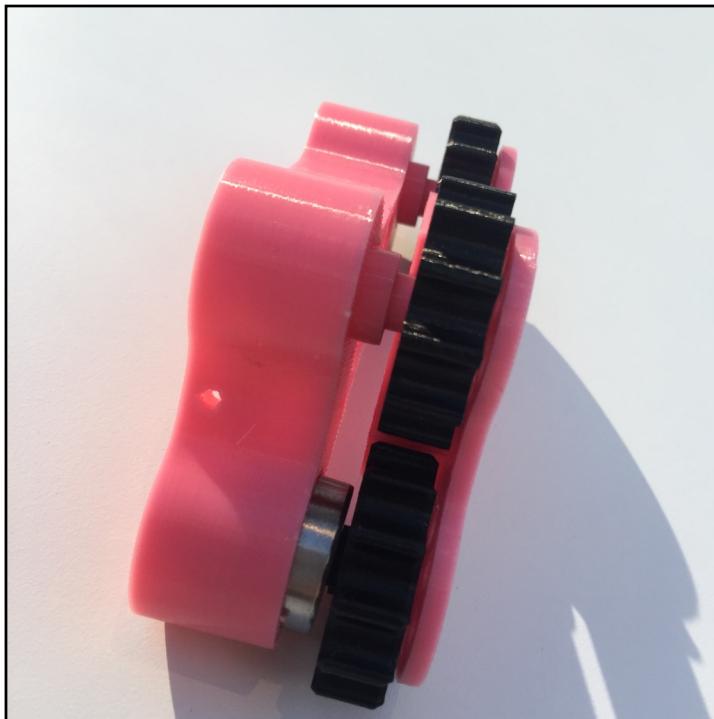
Note: Removal of these bearings is very difficult without breaking the part.



3

Carefully push the cogs over the bearings until they are fully over the bearings.

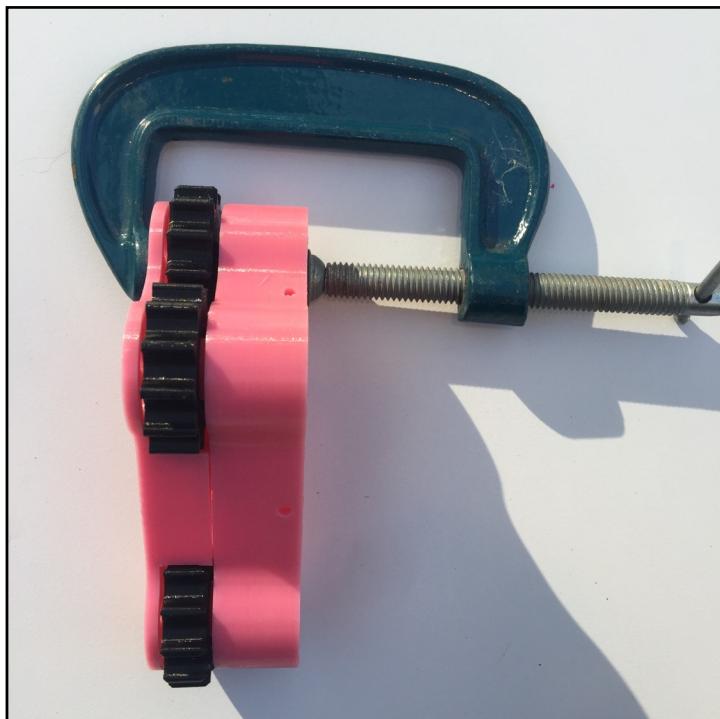
Push the fourth bearing over axle of the spindle cog until it is all the way down.



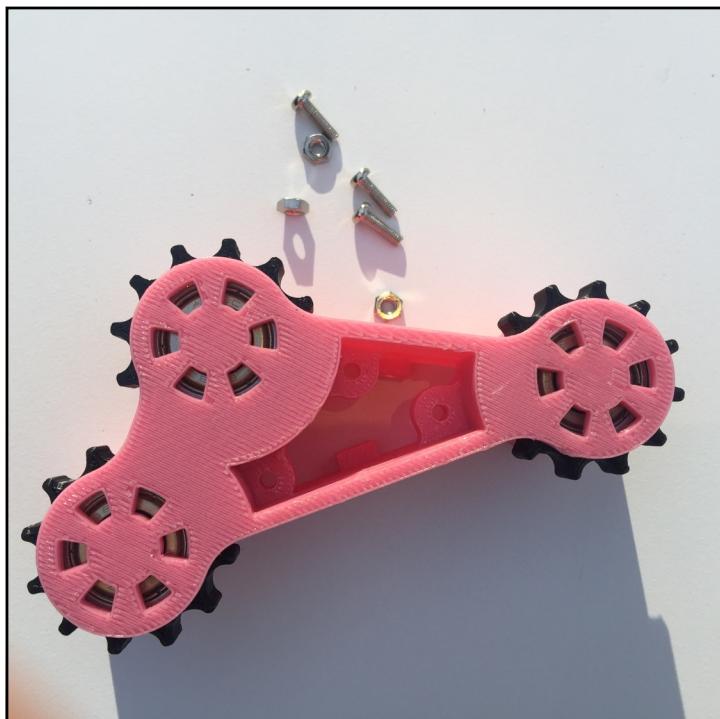
4

Print Part:  
**RHS\_Inner\_Track\_Frame.stl**  
Supports=Yes;Infill >60%

Push the two track frames carefully together. Working your way slowly around putting pressure on each axle a bit at a time, trying to ensure that the frames slowly come together evenly.



Hint: It may be that you need to use a clamp or vice to push the parts fully together.



5

Parts:  
3 x 10mm long M3 Screws  
3 x M3 Nuts



6

Screw the two frames together.

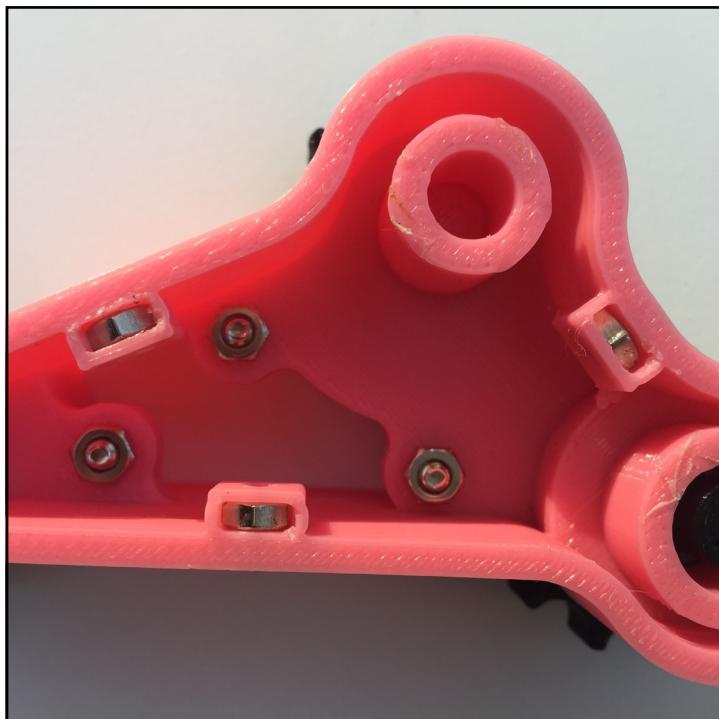
This may seem like overkill, but the parts can work themselves apart over time with vibration.

Some “lock-tight” thread sealer may be advisable.



7

Parts:  
3 x M3 Nuts



8

Push the nuts into the “cages”

They click into place.

I found pushing on one side of the nut and then the other with a flat blade screwdriver quite effective.

You should be able to see that they are in correctly if you look through the screw holes.



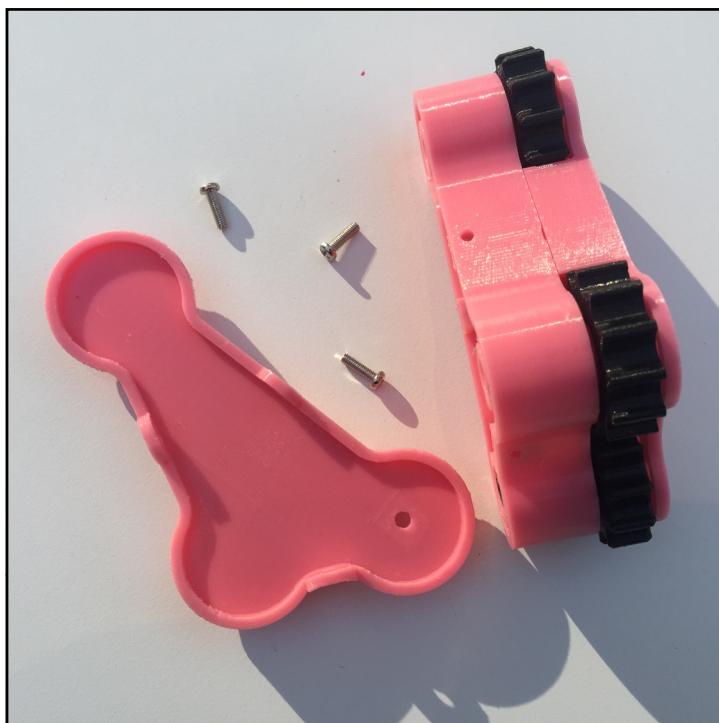
9

Print Part:

RHS\_Trach\_Frame\_Mount.stl

Supports=Yes;Infill=as high as possible

Note: I print this part upright as shown in order to gain the best part strength.



10

Parts:  
3 x 10mm M3 Screws



11

Use the three screws to fix the frame mount onto the track assembly.



12

Print Parts:

Track.stl

**Supports=NO; Infill=as high as possible**

You will need 32 per side.

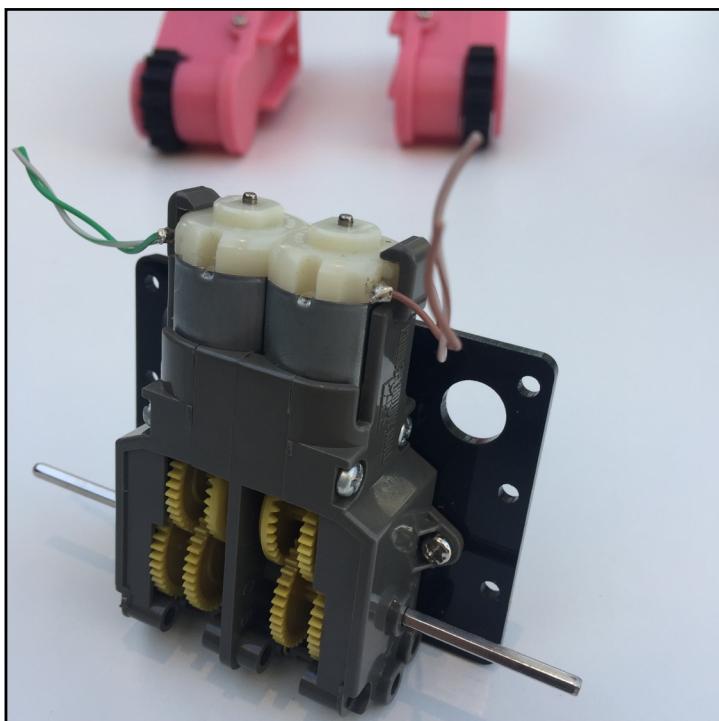
They are joined together with  
1.75mm ABS filament

PLA filament breaks over time.  
(while the tank is just sitting there)



13

Repeat steps 1 – 12 for the Left Hand Side.

**14****Parts:**

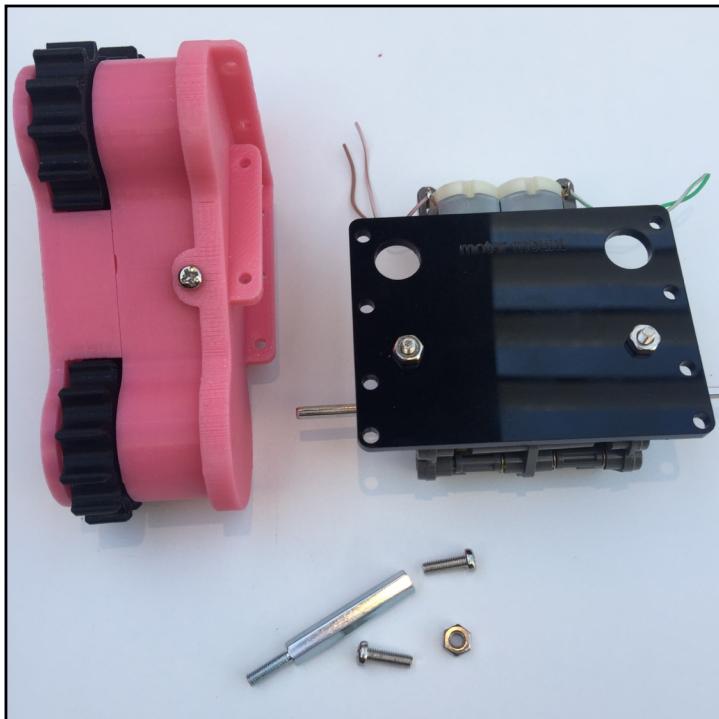
- Tamiya 70097 Twin-Motor Gearbox Kit – Configured in the 203:1
- 2 x 10mm M3 Screws
- 2 x M3 Nuts

**Print Part:****Motor\_Mount.stl**

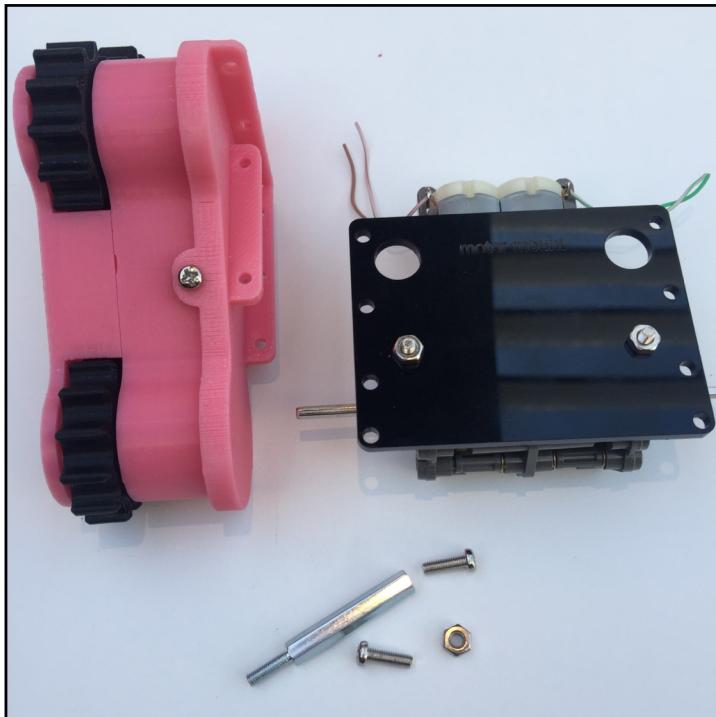
Supports=No;Infill=&gt;20%

**OR****Laser Cut Part:****Motor\_Mount.DXF**

3mm Thick Material

**15****Parts:**

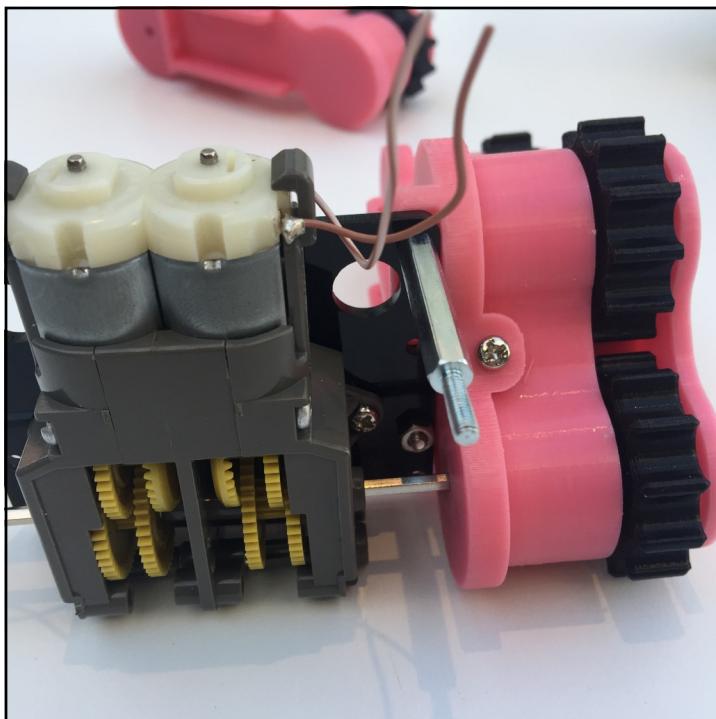
- 2 x 10mm M3 Screws
- 1 x M3 Nut
- 1 x 30mm M3 Standoff



16

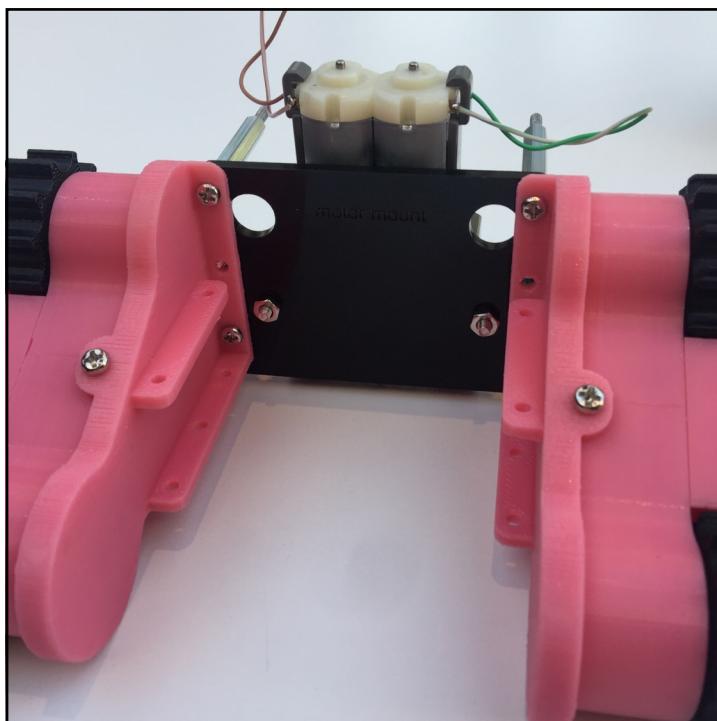
## Parts:

- 2 x 10mm M3 Screws
- 1 x M3 Nut
- 1 x 30mm M3 Standoff



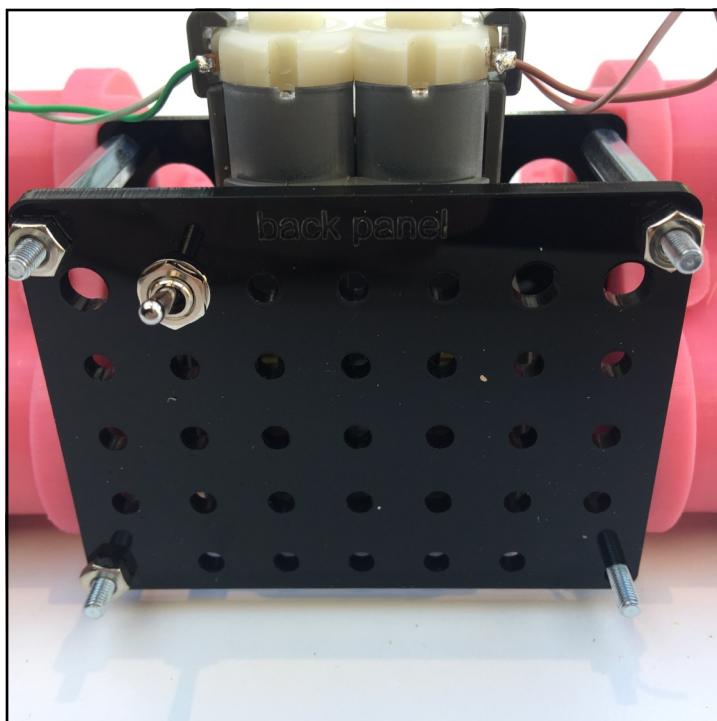
17

Push the motor spindle into hole on the spindle cog. Use an M3 Screw and the standoff on the top hole and the screw and nut on the bottom hole.



18

Repeat step 17 for the other track assembly



19

Print Part (or Laser Cut):  
Back\_Panel.stl  
Supports=No;Infill=>20%

Parts:

- 4 x M3 nuts
- 2 x 10mm M3 Screws
- 2 x 30mm M3 Standoffs

Attach the back panel as shown

Note: Provision for a 6mm Switch is built into the back panel as shown.



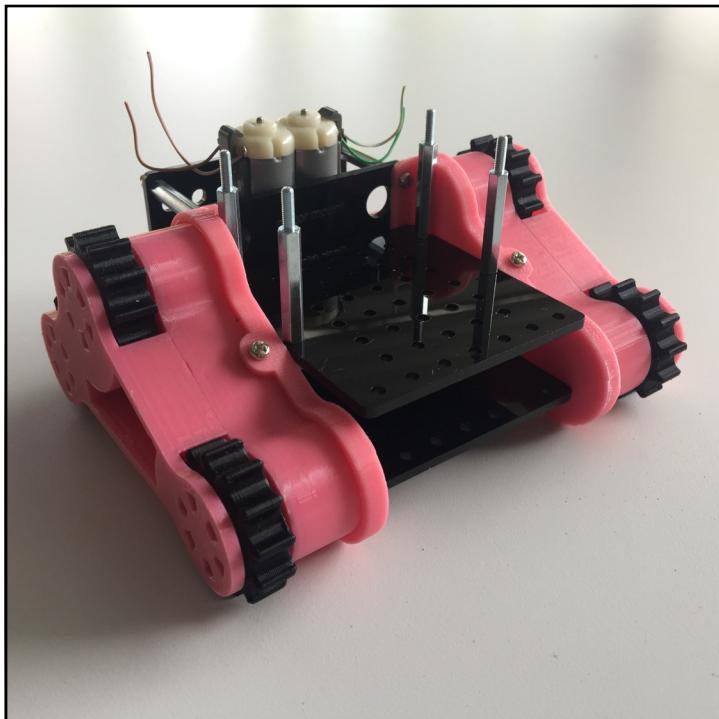
20

Print Part (or Laser Cut):  
**Bottom\_Shelf.stl**  
Supports=No;Infill=>20%

Parts:

- 4 x M3 nuts
- 4 x 10mm M3 Screws

Attach the bottom shelf as shown



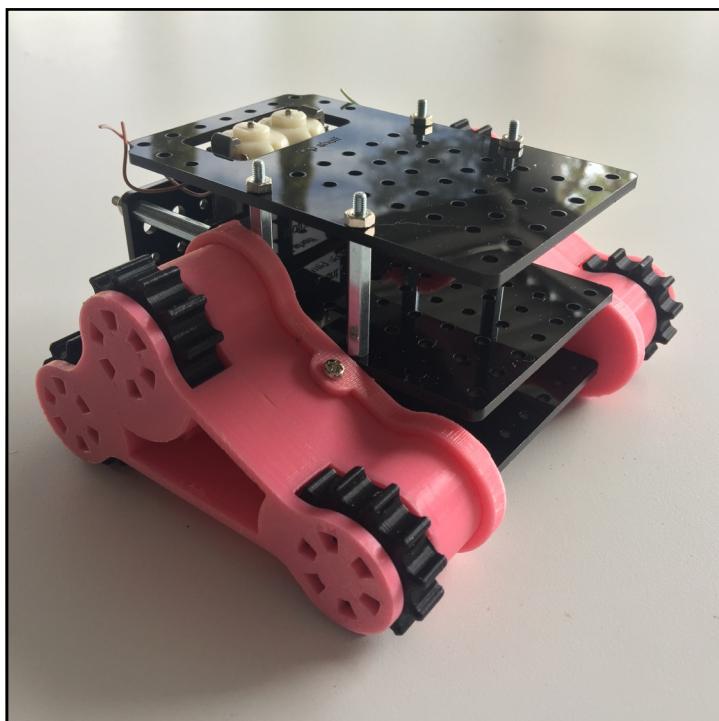
21

Print Part (or Laser Cut):  
**Middle\_Shelf.stl**  
Supports=No;Infill=>20%

Parts:

- 4 x M3 nuts
- 4 x 30mm M3 Standoffs

Attach the middle shelf as shown



22

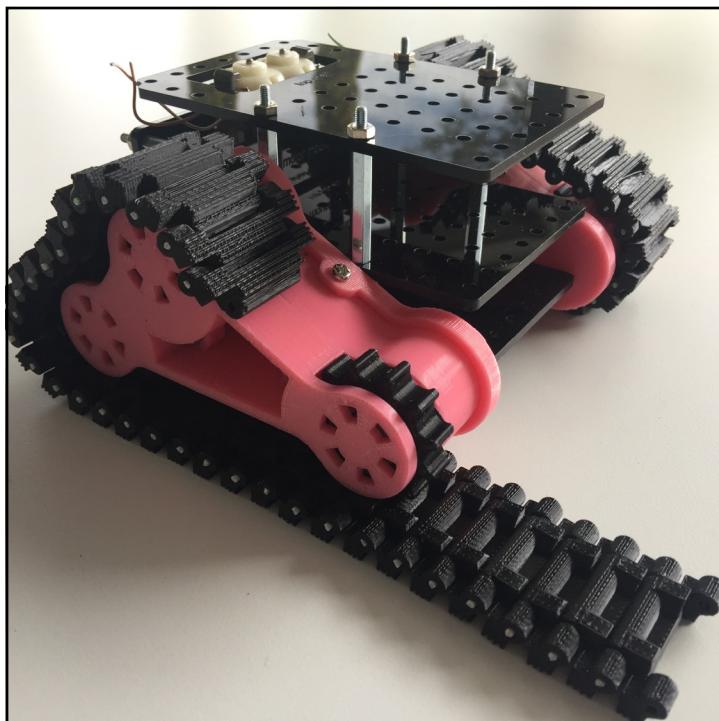
Print Part (or Laser Cut):  
Top\_Shelf.stl

Supports=No;Infill=>20%

Parts:

- 4 x M3 nuts

Attach the top shelf as shown



22

Add the tracks and you are  
done! 😊