

Megabot from Baymax (Big Hero 6) movie



Antimaterie

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Summary

Megabot from Baymax (Big Hero 6) movie with real flipping face and magnets everywhere

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Tags: [megabot](#)

This is a derived version of Megabot by gurol (Thingiverse); all major credits go there. Please go there, make likes/downloads, etc.

Additionally, I added a part from wouldstain (Printables) to make this model perfect. Please visit wouldstain's model and honor it there.

What's going on with this model here?

I had some problems with gurol's sizes of the holes for the magnets. They were a tiny bit too large. Also, the head was not fancy enough for my taste. I remade all parts of gurol's model in FreeCAD and changed the hole diameters. Then I made a head with a face that is held by two screws and some magnets. It can spin around like Megabot in the movie, and due to the magnets, it latches in red/yellow face position. BTW, the head itself is a very fidgety fidget toy— you'll be warned!

And a bit of a warning, the assembly of the flip face needs patience. Due to tight tolerances, it will not be easy to put together. You can also use the head part from gurol to make it easy.

List of Parts

Part	amount
belly.stl	2
face.stl	2
head_back.stl	1
head_front.stl	1
leg_base.stl	6
leg.stl	6
abdomen_bottom.stl	1
abdomen_top.stl	1
8x5mm magnets (+1 because off optional fidgety flipping fun)	18+1
3x2mm magnets	4
M2x6mm screws (5mm could be ok, but not tested)	2

Print Instructions

- PLA black (I used Overture Turbo PLA)
- 0.2 layer height
- variable layer height (very important!)
- lightning infill 10% (if this looks to sketchy for you printer, increase it, but lower is better here)
- 3 bottom layers
- 2 perimeters
- no supports

the face:

Multiple options here. You can just print it in black and use acrylic paint to make the red/yellow face - or you make a color change around 3.5mm height to yellow/red and print the face color. Do as you prefer.

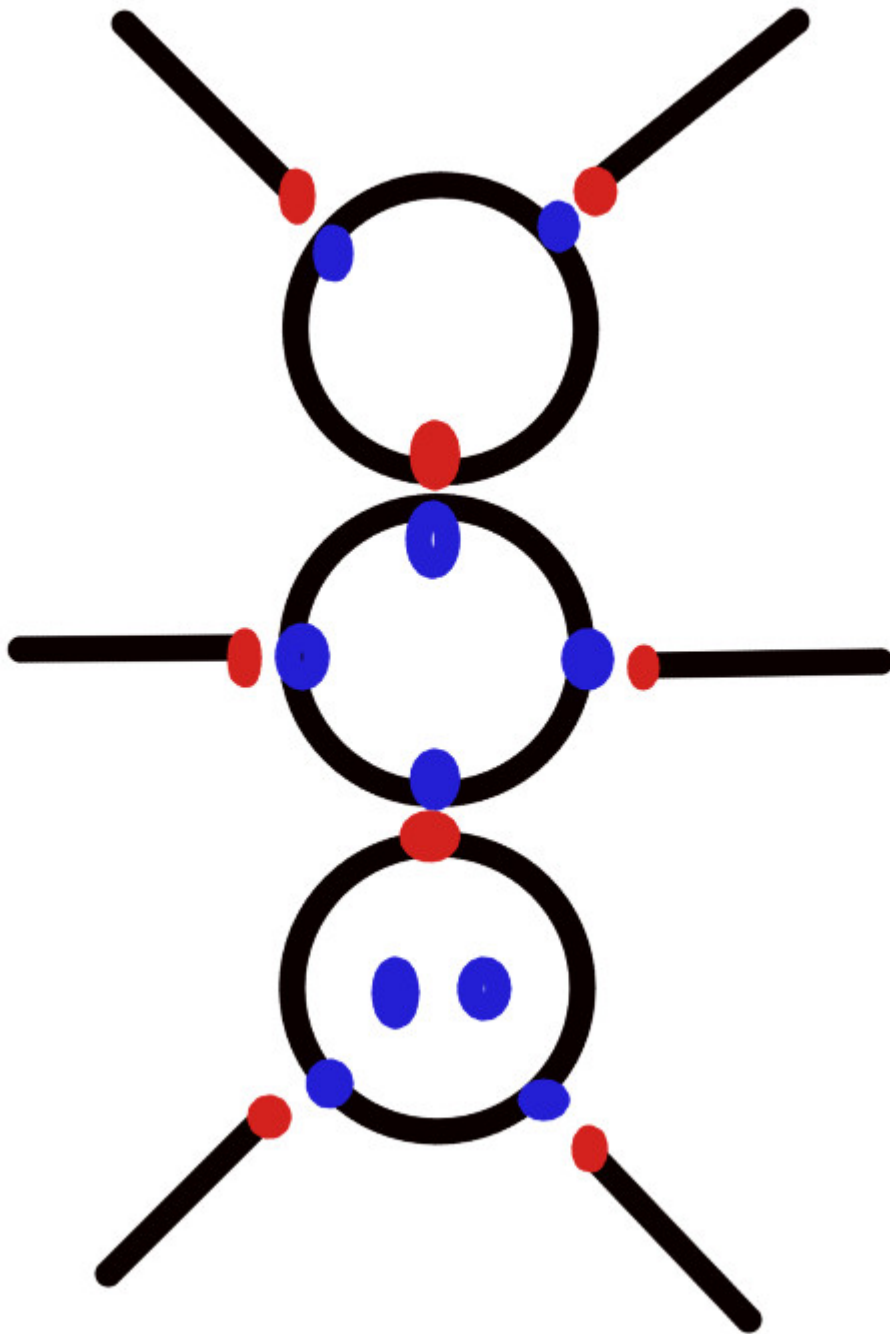
Assembly

I use superglue for gluing the magnets and UHU Hart kunststoff for the plastic parts

General advice: this model has lots of magnets, please check polarity, this is important for a successful build!

Assembly of main Body

1. glue leg and leg base together
2. glue body and abdomen parts together, keep attention of the hole alignment!
3. do not assembly head yet!
4. put all big magnets in place (except head) polarity must match following plan otherwise you will be in trouble:



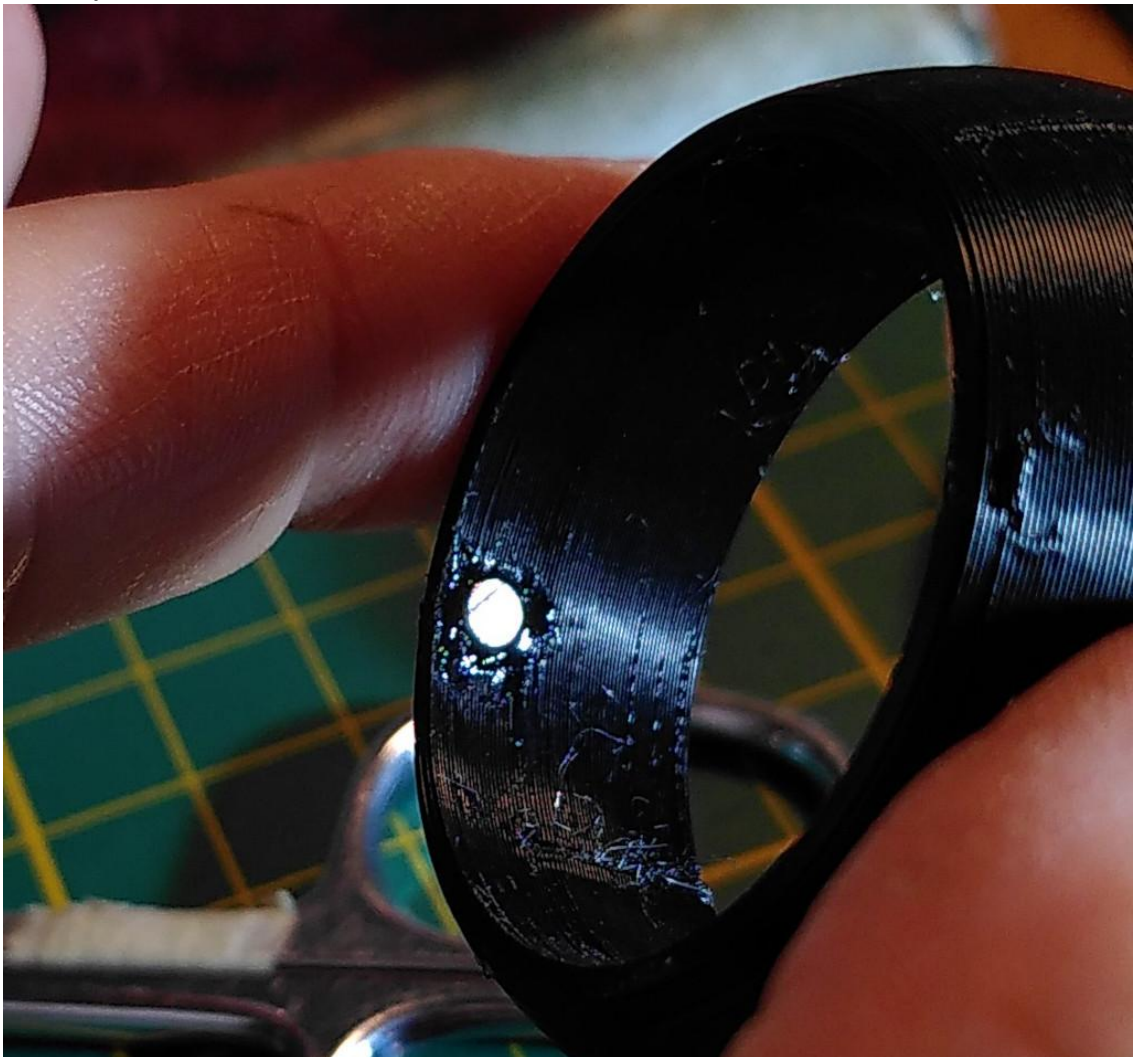
I used a magnet wrapped in painters tape as reference. I marked the polarity on the tape. I used superglue to glue the magnets. Be clean, otherwise you will have residue on you robot. If so, try scrape it with your fingers when dry and perhaps hide it with black sharpie

Assembly of the head

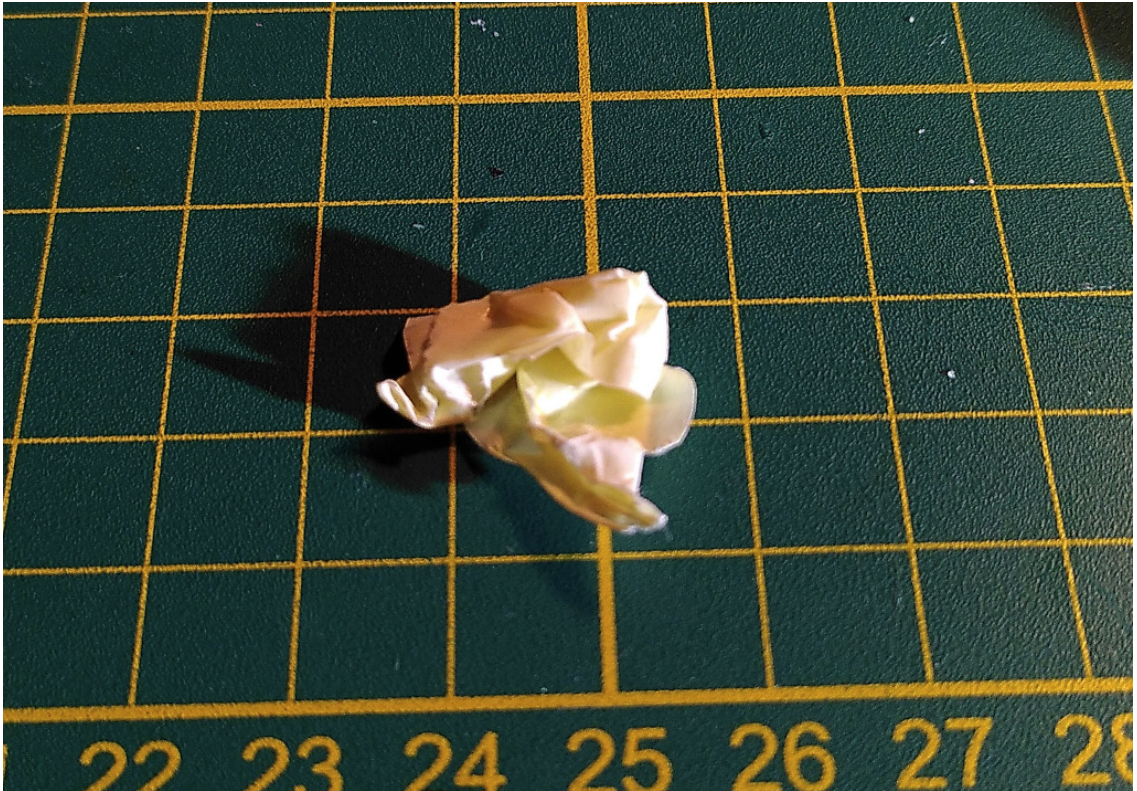
If you didn't want the cool flipping face head and want simpler, just get the original head piece (tete.stl) from gurol. Then skip to point 22 - otherwise continue ...

If head is assembled you cannot undo any error, please triple check your actions, if glued it is irreversible!

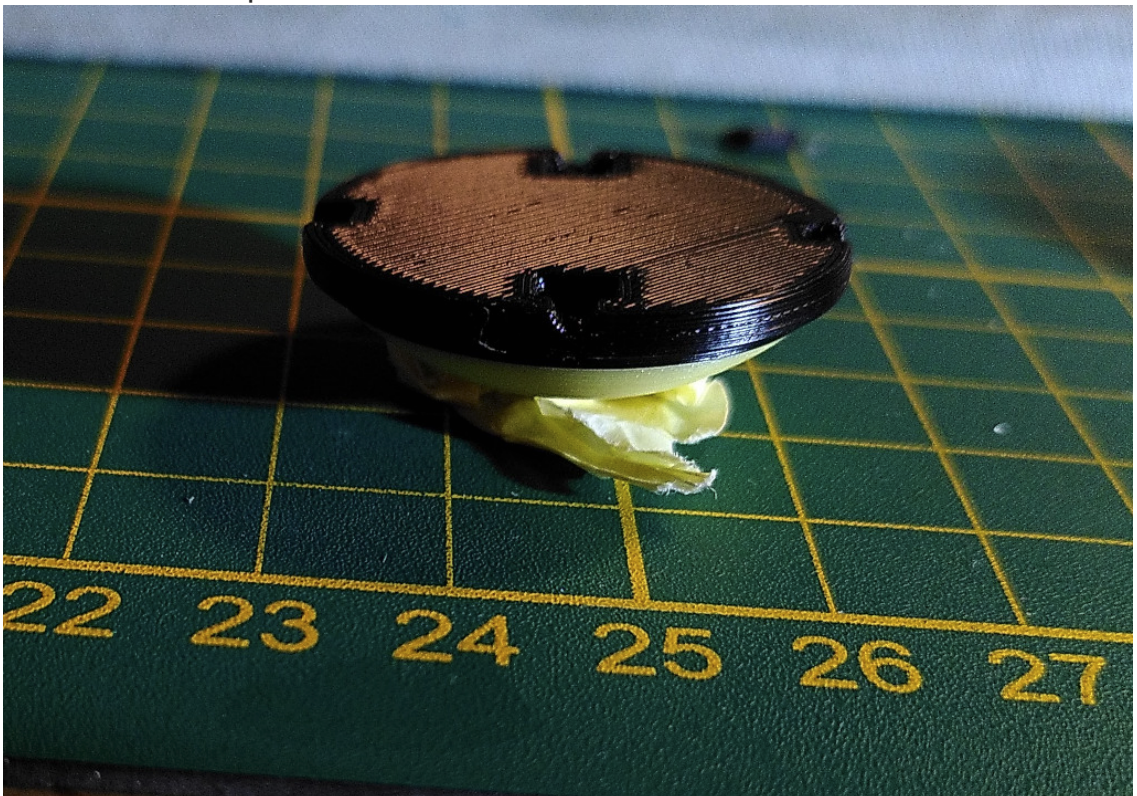
1. take the front part and widen the holes with M2 and M3 screws. The magnet holes (M3) must be deep as possible. Due to small size edges aren't sharp and magnets won't go all in
2. test fit the small magnets. optimal is when they are mostly flush. (if not we can file done it alter a bit)
3. if magnets fit, glue them in and wait until glue is dry. **ATTENTION:** both magnets should have same polarity facing inside. don't mess this up!



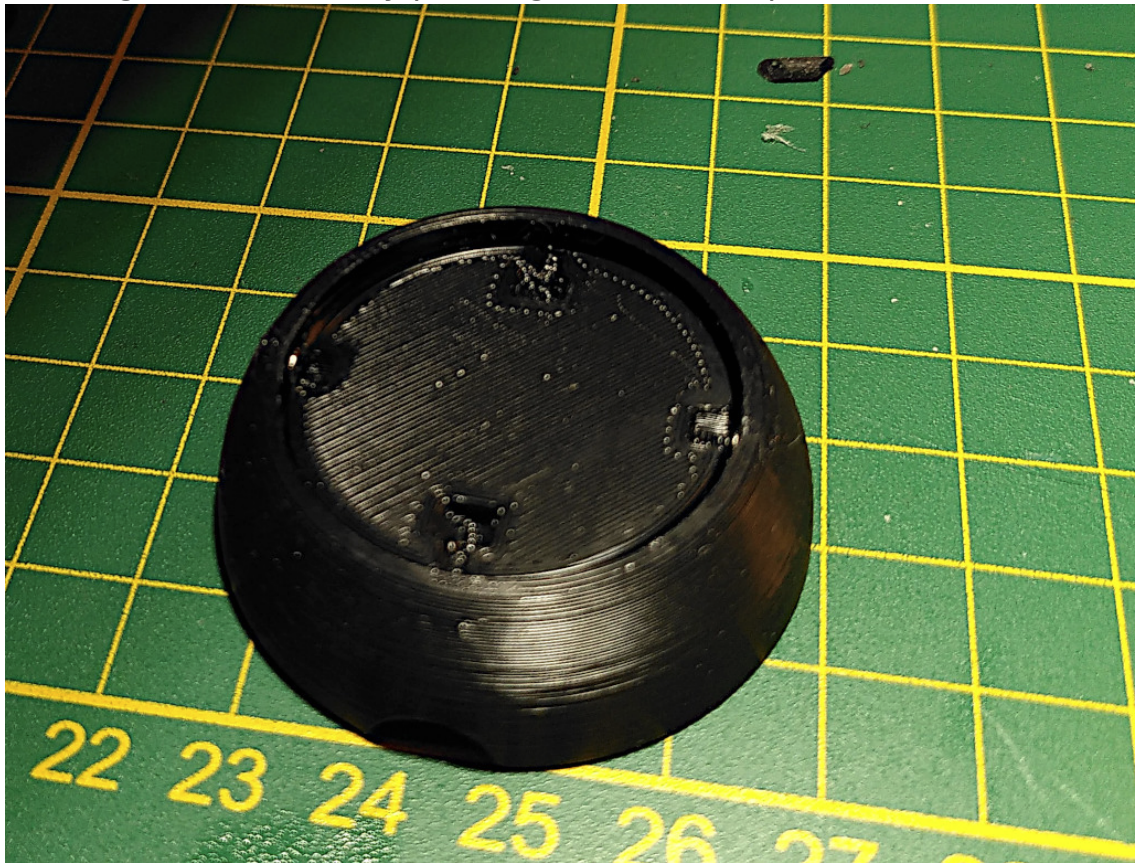
4. place a blob of painter tape on flat surface. Upside should be sticky



5. Place one face part face down on the blob, Like so



6. Put Front part over this arrangement like so, holes should align. Adjust the height of the blob by pressing down on the part.



7. Put the M2 screws in it like so. This could be a bit under tension



8. make test fit with the other face part. you can use a bit of double sided tape to make a test fit. Then you can check if the double face spins freely. If not take a file and file over the magnets to remove any obstacle. Always file from the back of the front part, otherwise you leave unnecessary scars on the outside.
Also take the back and hold it together for a check.
As I said already, after gluing no changes possible.
9. Now you have to decide if you want to paint the faces (would be the best) or if you impatient and want it assembled. Doing it later means no second try
10. repeat the steps 4-7 and align all things perfectly
11. put glue on the other face part
12. hold your breath and put the face part with the glue onto the other part stuck to the table. Keep alignment of the screws! press gently in the middle of the face.
13. Now caution! nothing should move. take something flat (e.g. knife) and go under the painters tape blob to loosen it.
14. try to gently press both faces together and hold it for a while until the glue starts bonding

15. make a very cautious check if face move correctly. If not try to separate the faces and start over, otherwise let this dry.
16. meanwhile take the back part of the head. If you want the extra fidgety magnet, then it's now the time, otherwise skip this step
 1. there is a hidden cavity in the middle of the part, use a small drill to get through 2 layers
 2. use bigger drill, knife whatever to fully open the cavity (this is 8x5mm)
 3. add glue and place the magnet in. ATTENTION the magnet polarity of the side facing up should be the opposite of the small magnets.
 4. let glue dry
17. if all parts dry, check polarities of the magnets and if all things OK, the continue
18. now rotate the face 90° so you can see the tiny holes for the magnets
19. test fit the small magnets into the face sides and glue them in. ATTENTION the magnet polarity of the side facing up should be the opposite of the other small magnets in the front part
Idea is that the side magnets attracts/latches the face and the back magnet helps to push the face in the other direction
20. if this is done, glue dry you can paint the magnets on the face side with a sharpie to hide them a bit
21. glue back and front part of the head together - keep alignment if the magnet holes!
22. glue the magnets in, watch the polarity from the sketch above
23. if all glue is dried you can paint the faces if you didn't do that already

FINISH :-)

just a note, the I didn't paint my bot yet, so I just made a prototype with painters tape ...

Additional notes

I'm interested in your feedback to improve my stuff! So give me likes, post makes, comment and rate the print to show others and me how well it goes.

If you post a make, let me know which filament you use.

If you want to support me by donating a coffee go to <https://ko-fi.com/antimaterie> I would really happy about it. The money will be invested in all stuff regarding 3d printing to give more and better quality models.

In general my Prints are not for commercial use, but if you are a print farm owner and want to sell some of my stuff, please contact me.

Hope you enjoy my models.

This remix is based on



Megabot - Sitting

by wouldstain



Big Hero 6 - Megabot

by gurol

Model files



head_back.stl

 print 1x




head_front.stl

 print 1x




face.stl

 print 2x



belly.stl

 print 2x



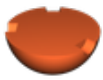
leg_base.stl

 print 6x




leg.stl

 print 6x




abdomen_bottom.stl

 print 1x



abdomen_top.stl

 print 1x

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