Button Bot

(oxypode bottonem)

MakerBot

Assembly Instructions and Parts List

Button Bot

Button Bots were first sighted after the great arcade factory escape of ‘86. Their continued survival in the wild has baffled robot experts. With literally only half-a-mind, a Button Bot is dependent on its buttons for sustenance. Button Bots are fed directly through arcade button presses. Once fed, the button brain wakes up for few moments of scrambled output.

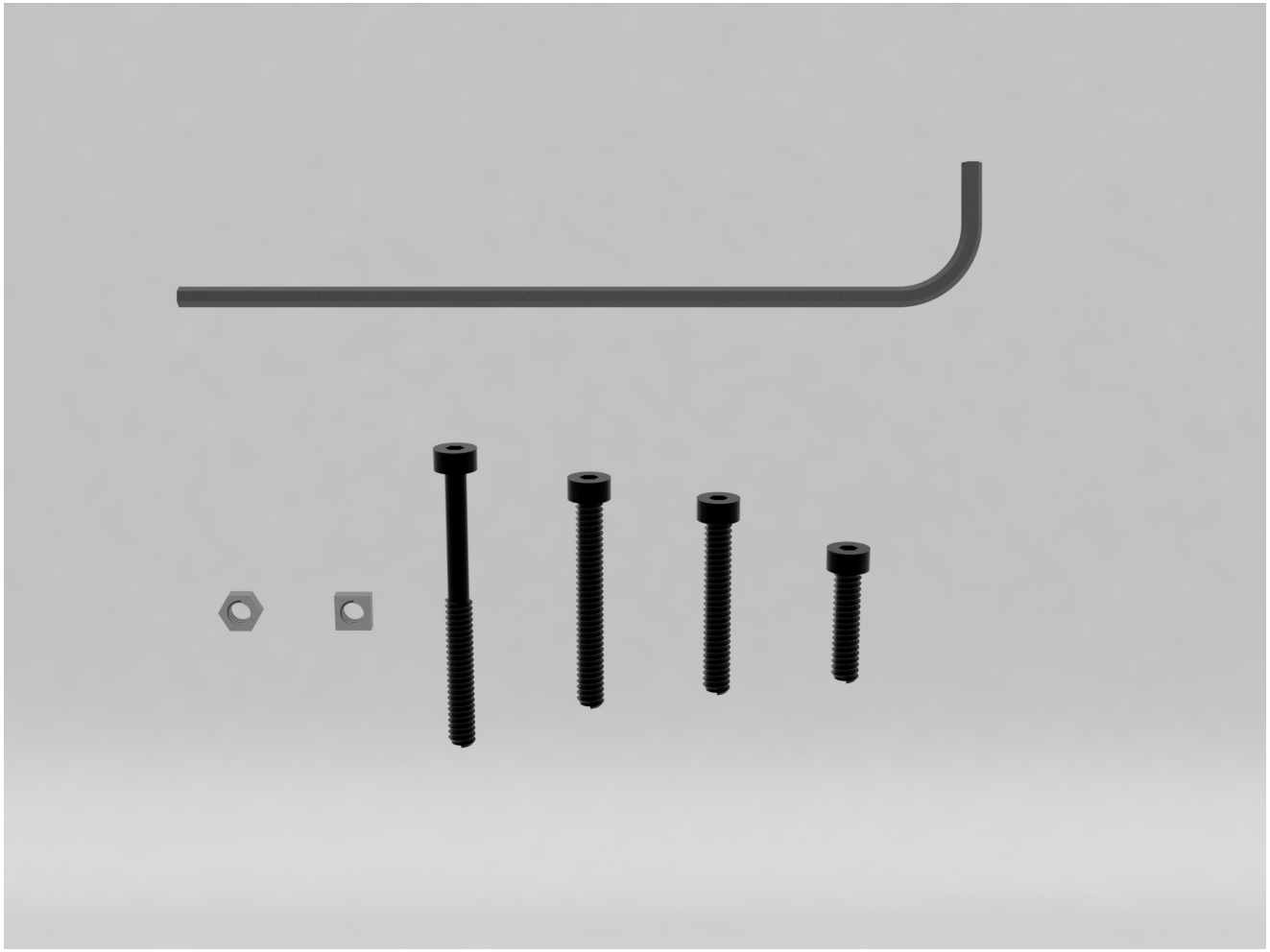
The following is a list of parts and assembly instructions to help you build your very own Button Bot. This project is geared towards advanced hobbyists but everybody and everyone is encouraged to give it a try.

The majority of the printed parts in this build were all skeined at 2 extra shells and 8% infill. Experiment with these settings to get the best results for your parts.

Good luck!

Button Bot

Hardware & Parts



Very few tools are needed to assemble your own Button Bot. Here are the essentials.
Soldering iron (not pictured) M3 allen wrench, m3 nuts (hex is mandatory, square is optional), and an assortment of m3 bolts in various lengths. M3 x 40mm to m3 x 16mm are used in this project.

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2x Headfrontright and 2x headfrontleft Headfrontright can interchange for headbackleft. Headfrontleft can interchange for headbackright.

Parts 1/4

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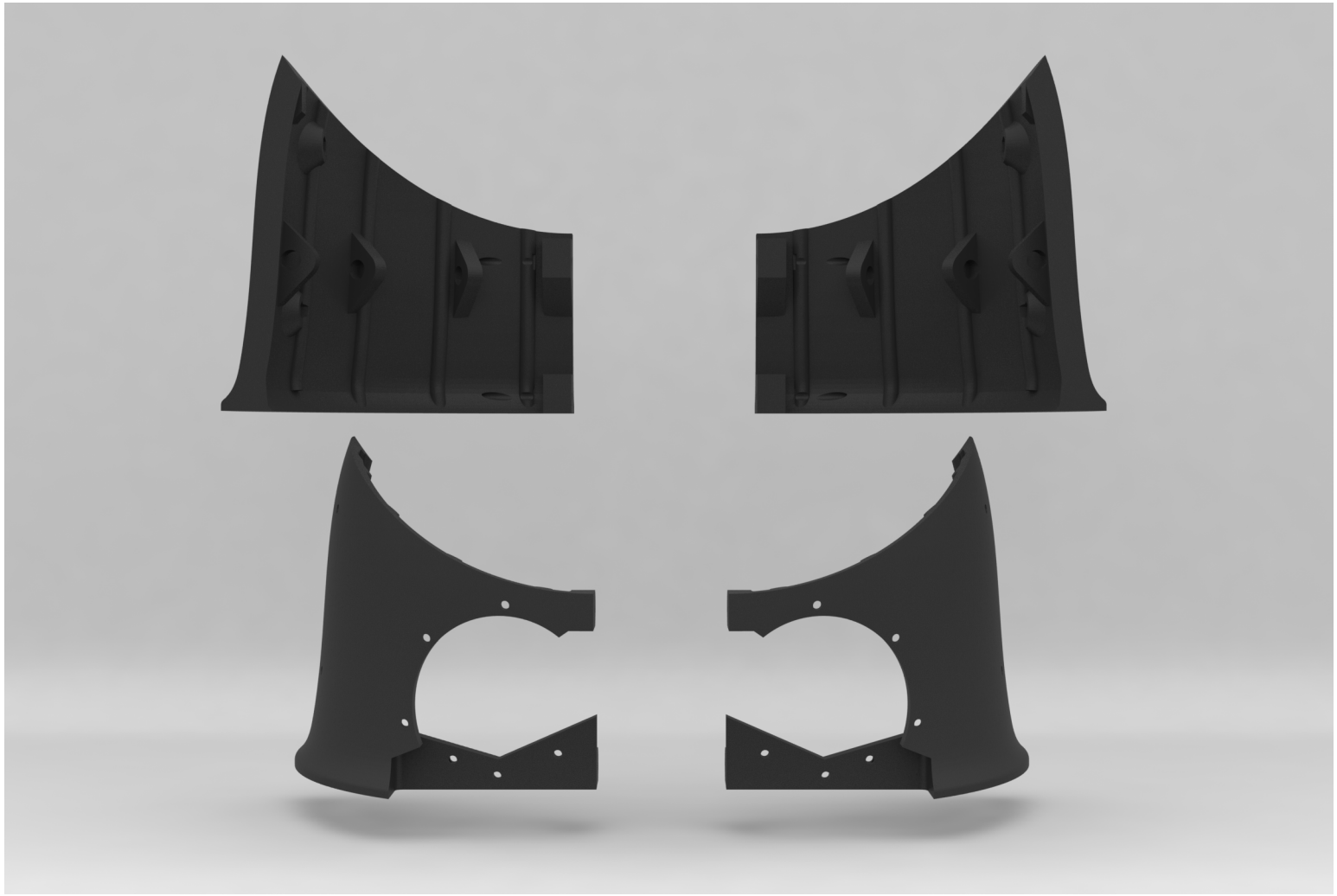

Facefrontright, facefrontleft, facebackright, facebackleft. These printed parts make up the “face” of ButtonBot.

Parts 2/4

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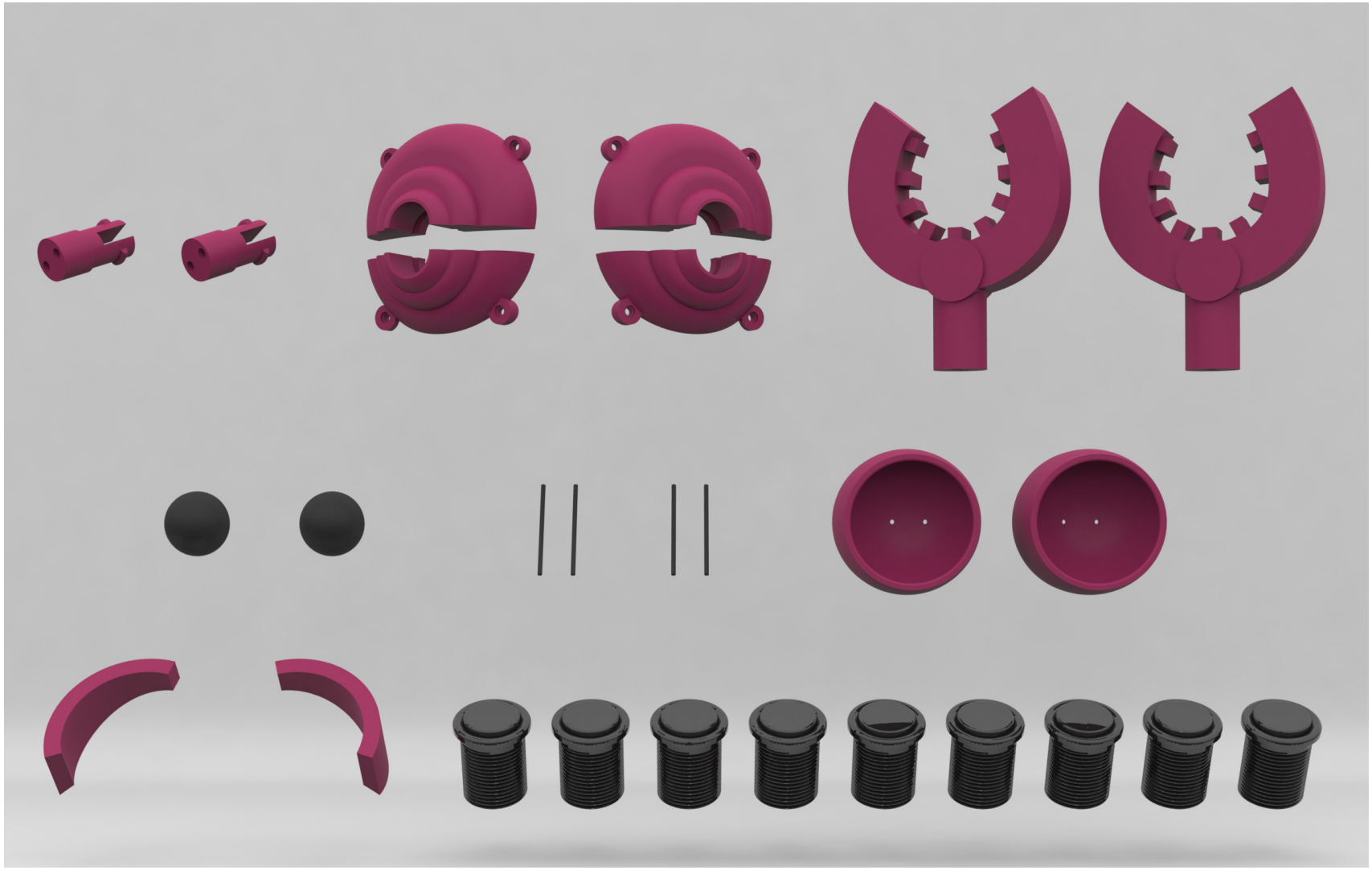

Earpin.stl, 2x eartop.stl, 2x earbottom.stl, 2x claw.stl, 2x pupil.stl, 4x 3in. pieces of filament, eyesocketright.stl, eyesocketleft.stl, eyebrowright.stl, eyebrowleft.stl, 9x arcade buttons.

Parts 3/4

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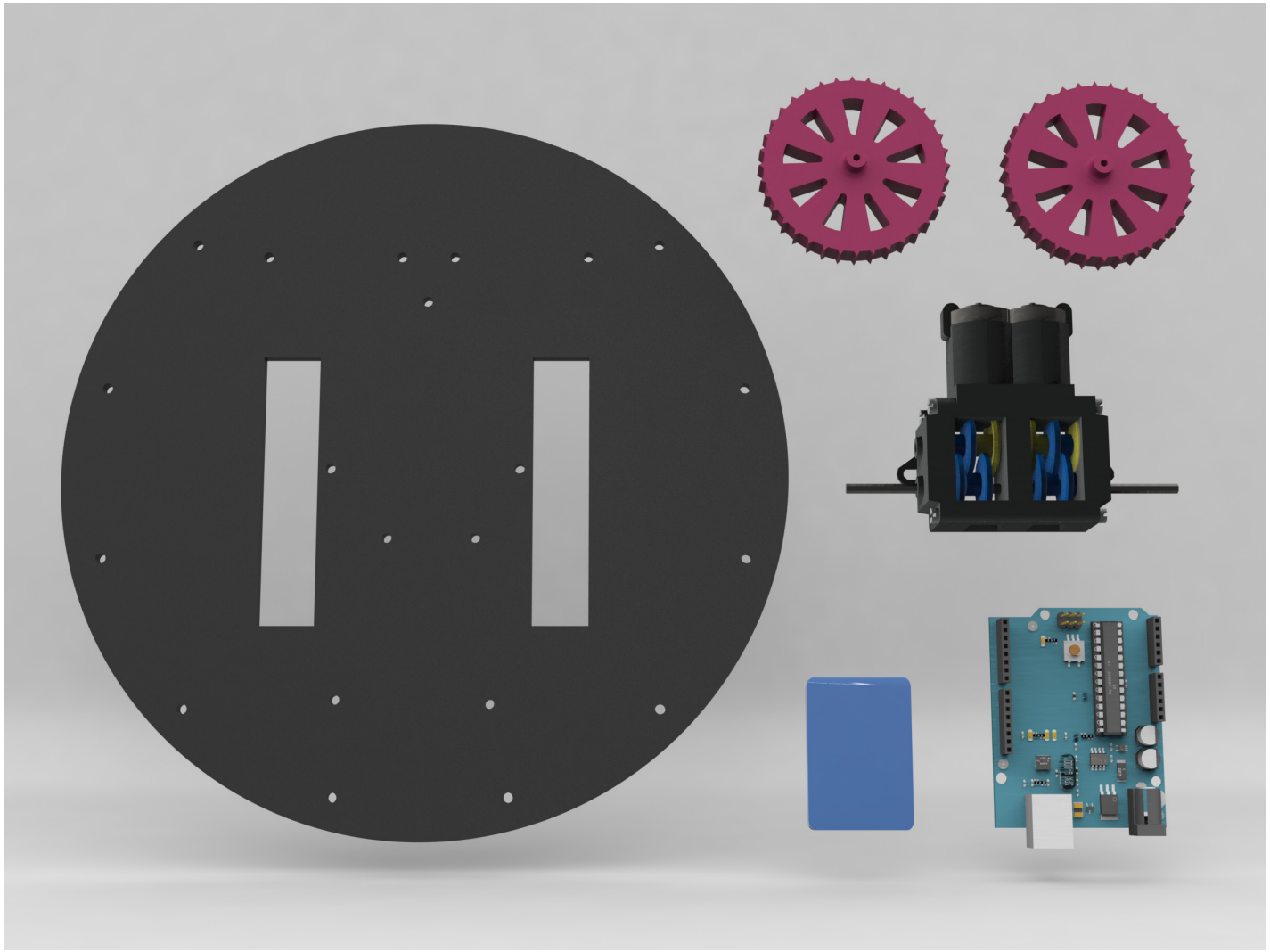

Baseplate.dxf, 2x wheel.stl, Tamiya 70168 Double Gearbox Kit, LiPo Battery 7.4v, 1000mAh, Arduino Uno, Pololu Qik 2s9v1 Dual Serial Motor Controller (not pictured).
The brains, brawn, and support for your ButtonBot.

Parts 4/4

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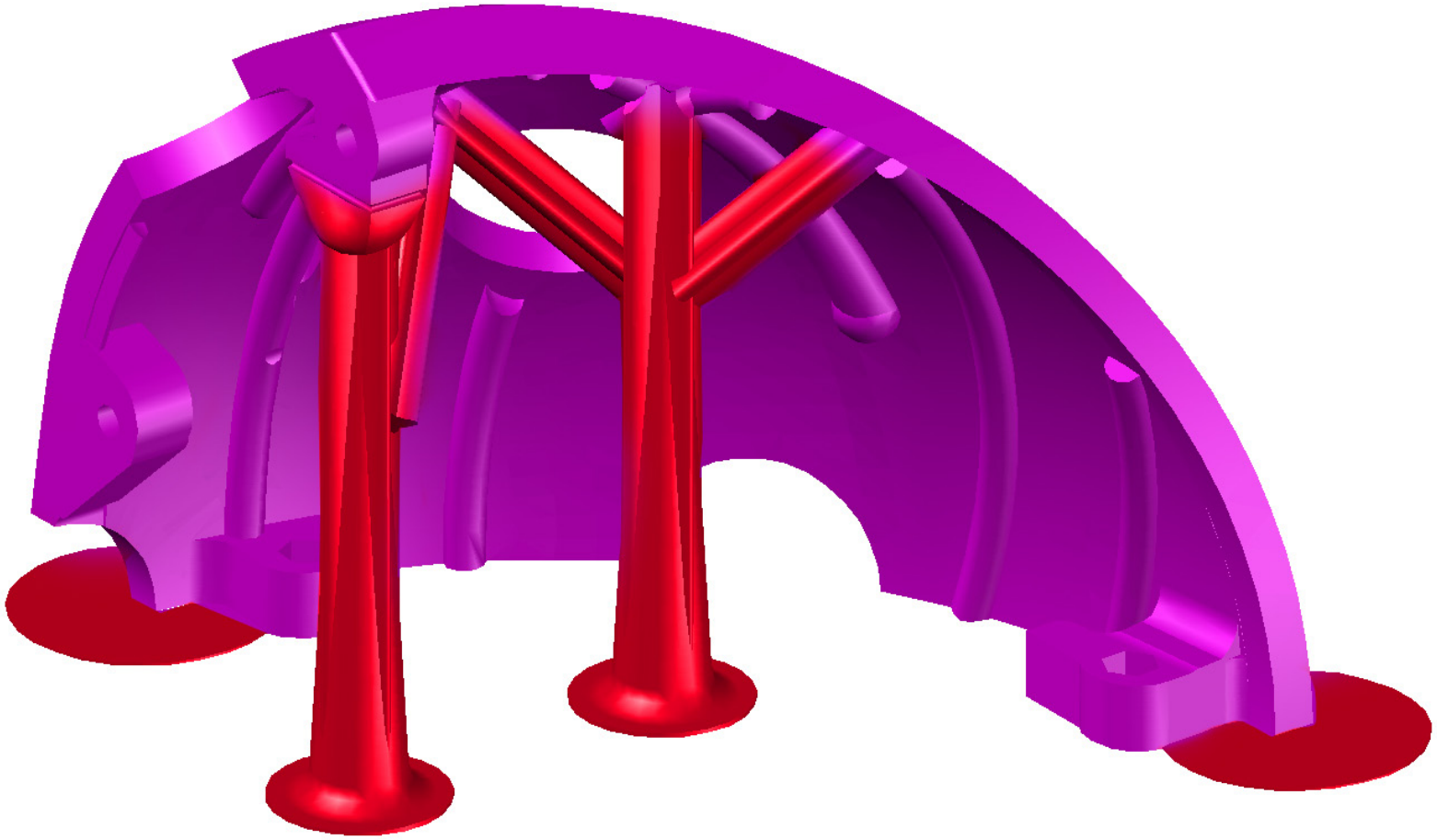
Button Bot

Assembly!!



Using wire cutters, clip off the support columns and mouse ears (shown in red) printed with the part. Repeat this step for all four head pieces.

Step 1/14

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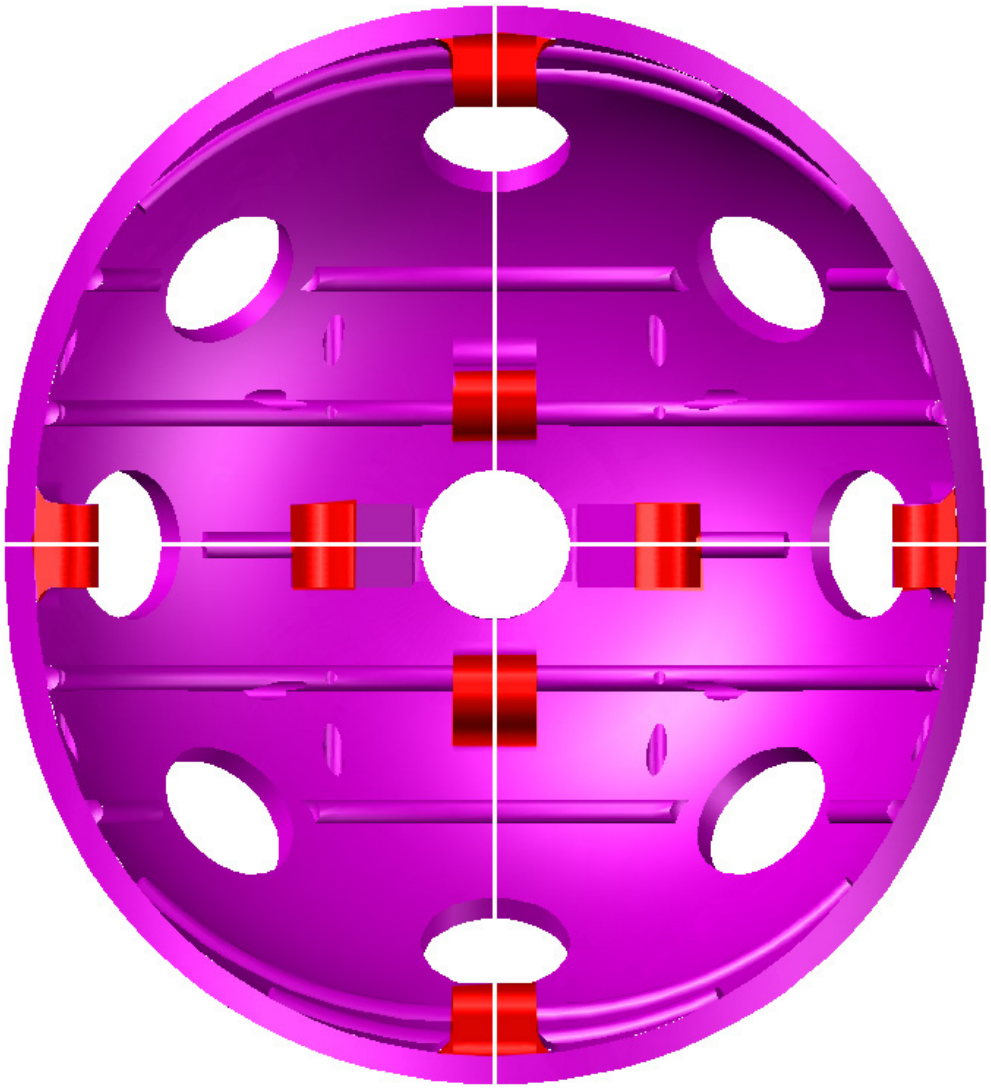

Use 8 m3 x 16mm bolts and 8 m3 hex nuts to secure the head pieces together. (screw holes shown in red) A hex wrench will fit through the small holes in the head to help you in tightening the bolts.

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Insert the 9 arcade buttons through the holes in the head and screw the backings onto them. For the 8 buttons around the edges, the switch clips shoud be oriented so that the tall side of the clip is facing the center. The center button's clip should be oriented so it fits between two of the outside button's clips. Refer to the wiring schematic in the appendix for connecting the buttons.

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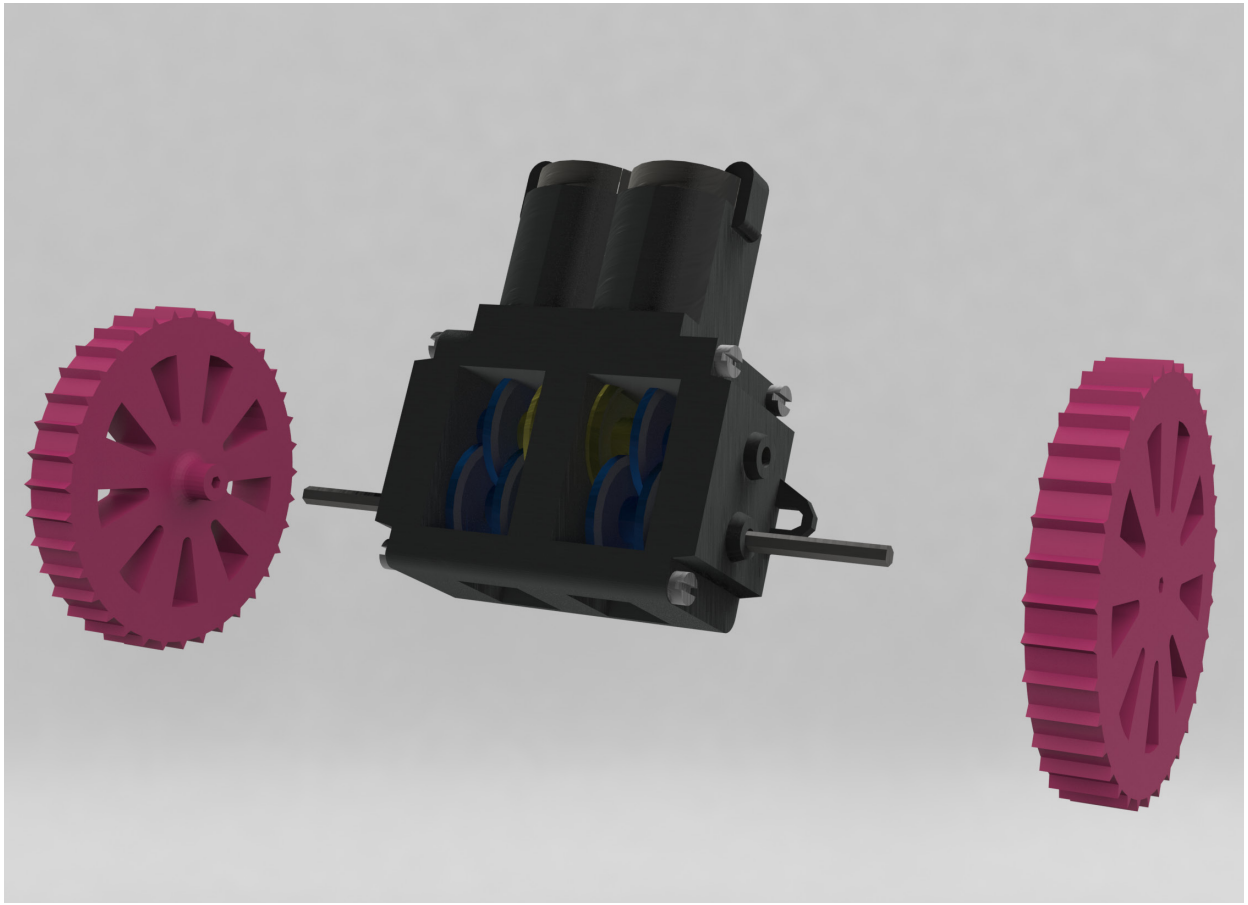
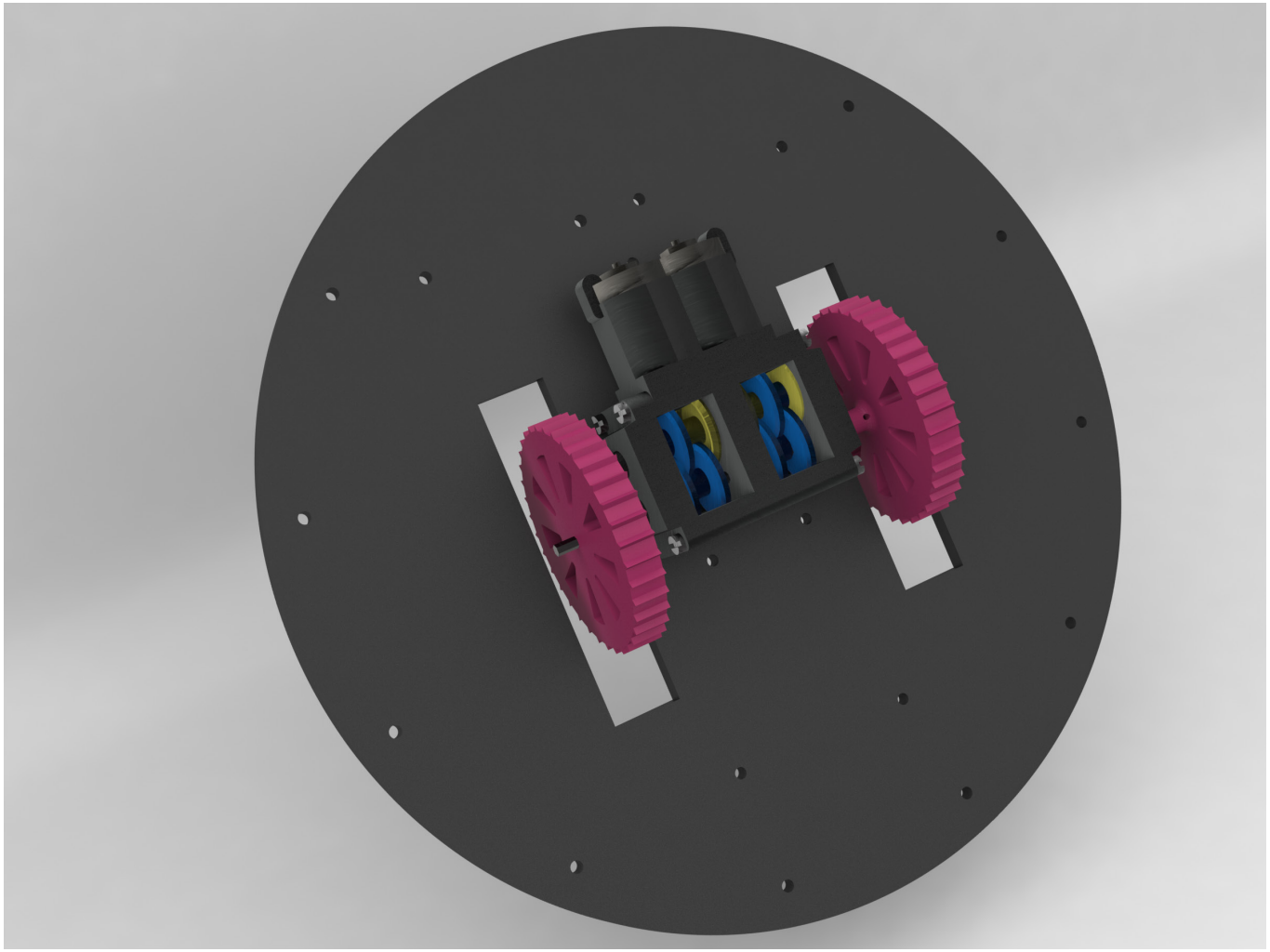


Assemble the gearbox as per the included instructions. Next, press fit the wheels onto the shafts. A set screw may be used to hold the wheels onto the shafts. For better wheel traction, a coat of Plasti-Dip will do the trick. A few spare “Live Strong” bracelets will work as well.

Step 4/14



Using m3 bolts and nuts, secure the gearbox assembly to the base making sure the motors are facing towards the front of ButtonBot.

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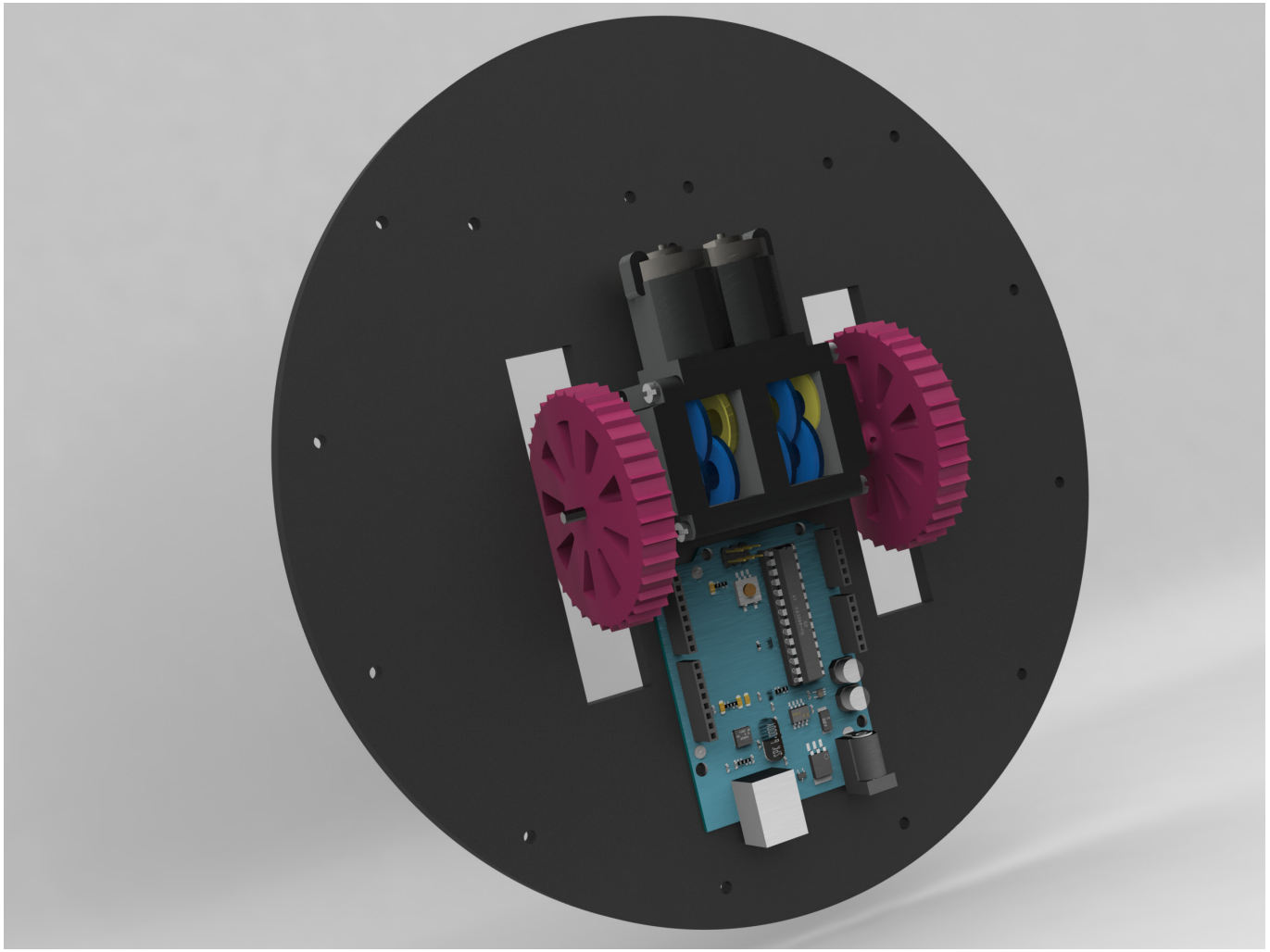

Just like the last step, secure the Arduino to the base using m3 bolts and nuts. Now would be a good time to upload ButtonBot's code to the arduino.

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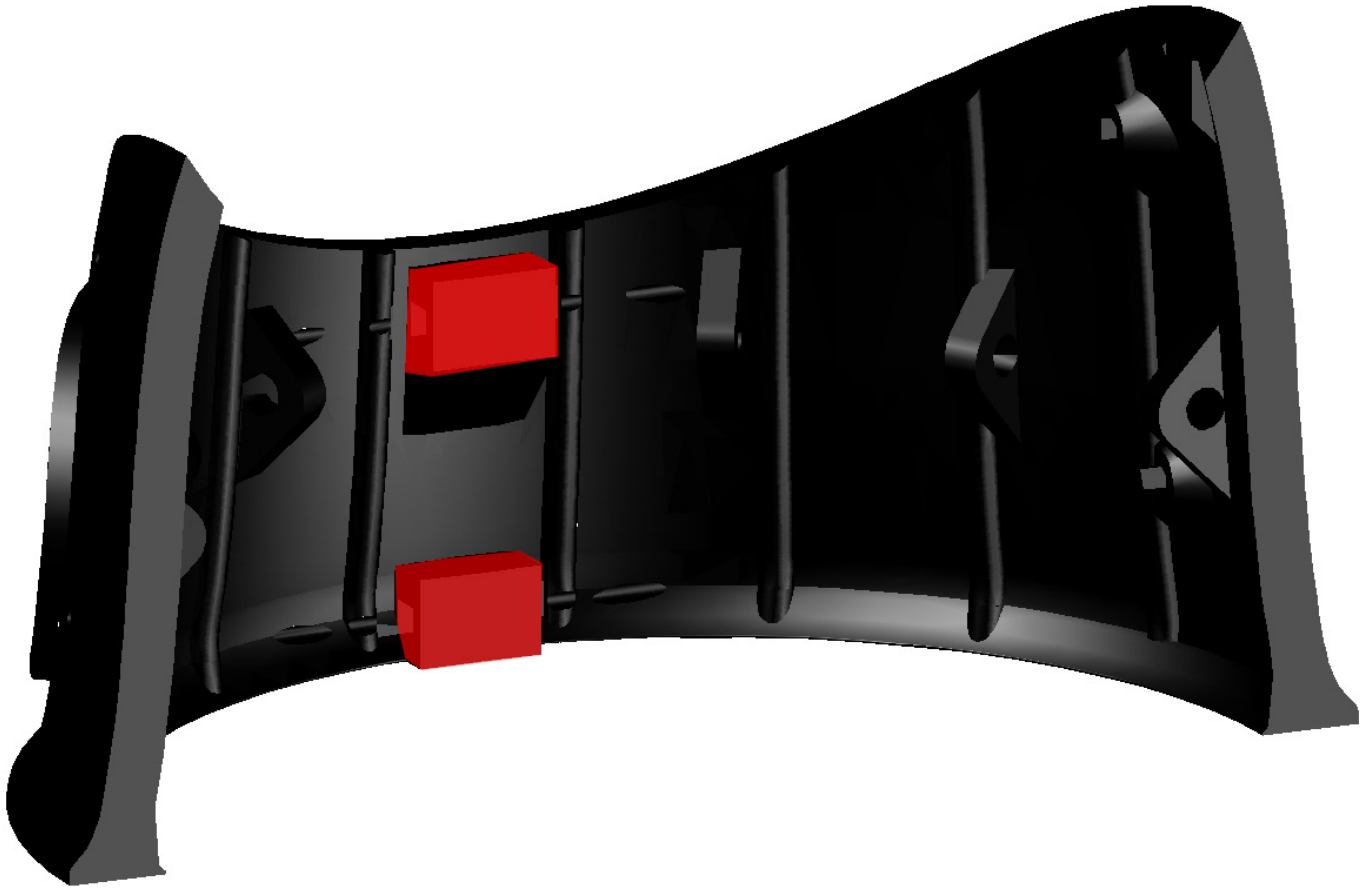

For the bottom hole, use an m3 x 16mm bolt and an m3 nut to secure **facebackleft to facebackright**. The top hole will be used later in Step 12 to attach the face assembly to the head assembly.

Step 7/14

Using m3 x16mm bolts, m3 nuts, and the printed **eartop and earbottom** pieces, attach the front face assembly to the back face assembly. Do this on both the right and left side of your ButtonBot.

Step 8/14

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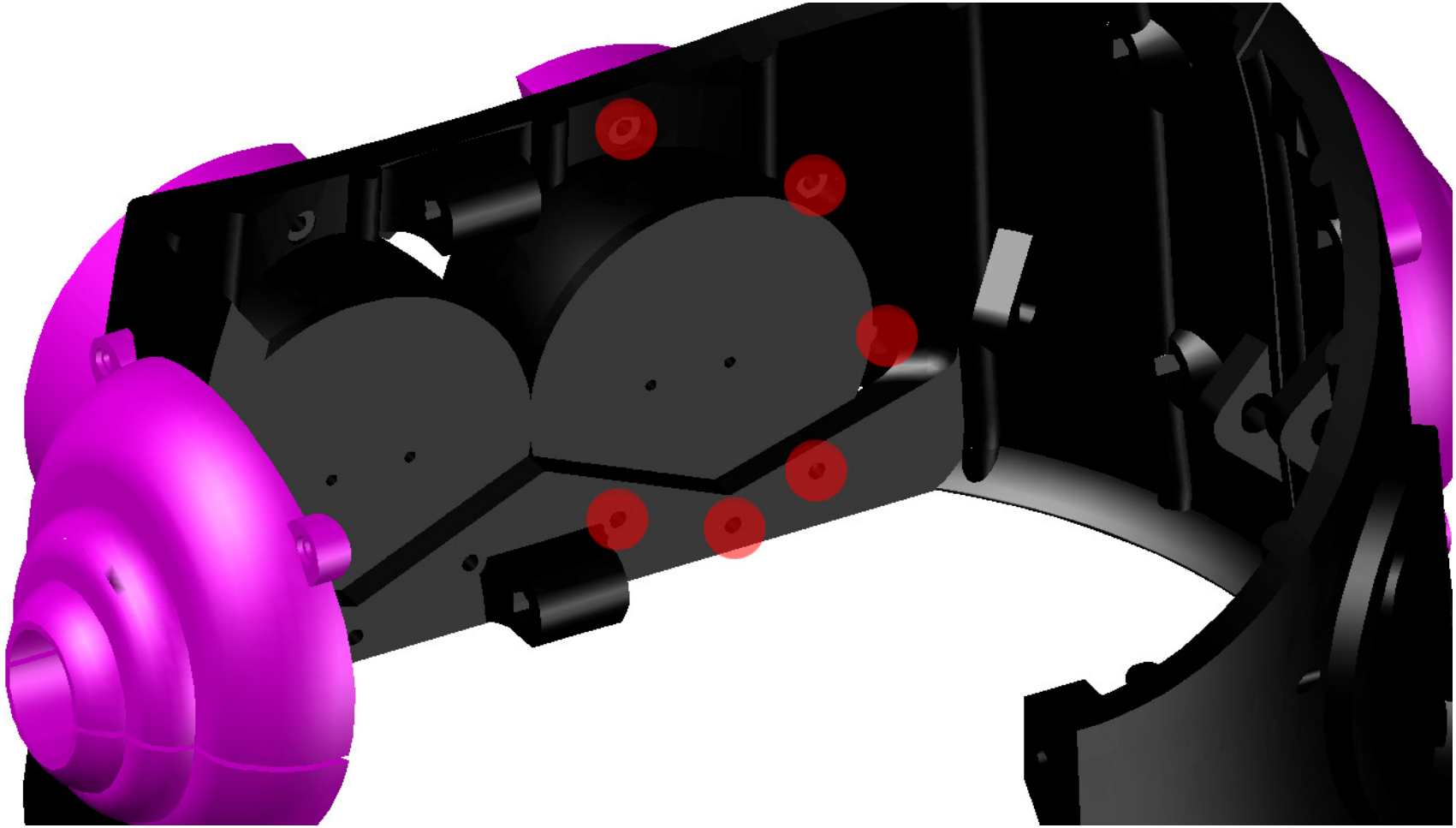

Use m3 x16mm bolts to attach both the **eyesockets, eyebrowleft, and eyebrowright**.
(Picture only shows bolt holes for the right side)

Step 9/14

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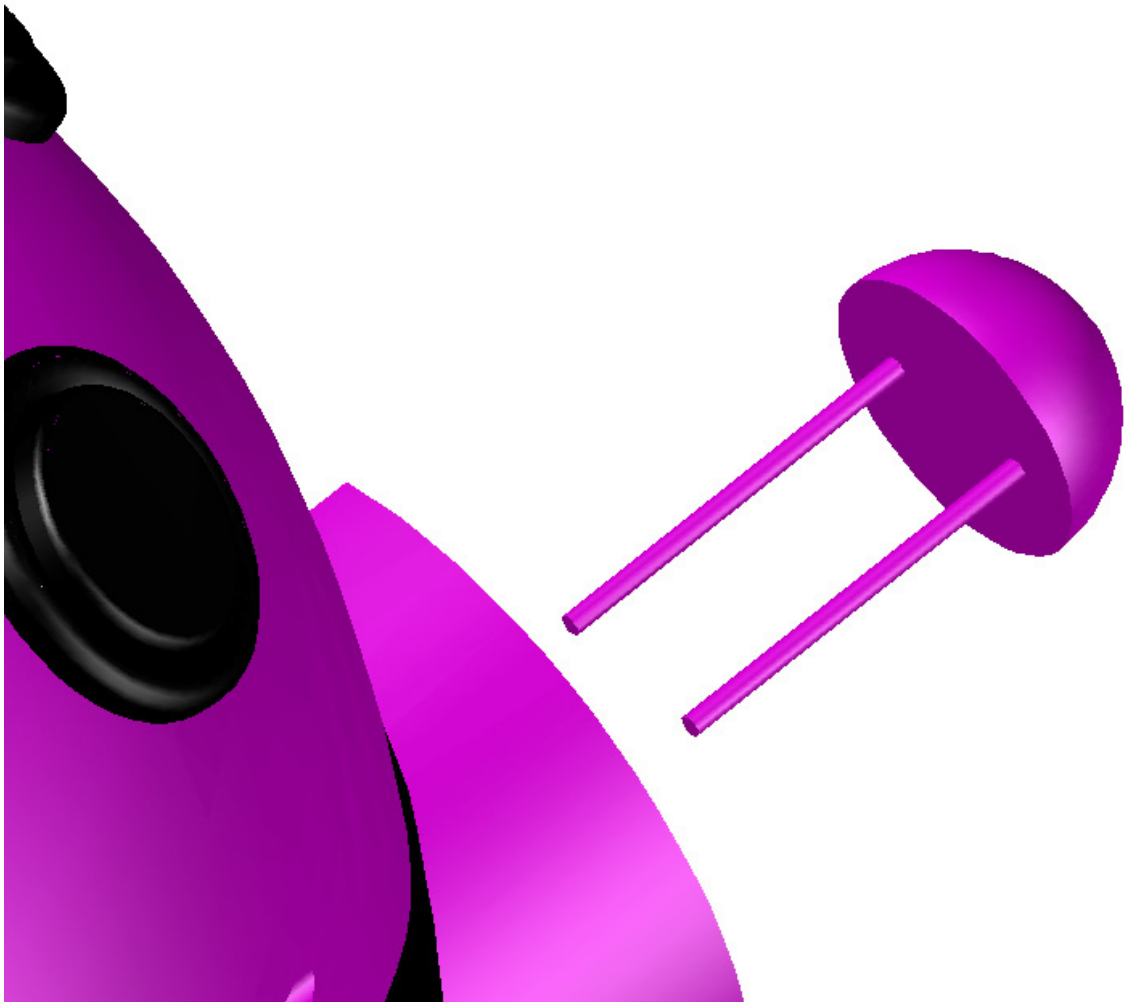

Insert 2 pieces of **filament** into the pupil. Next, push the pupil with connected filament into the eye socket making sure the filament threads through the holes in the eye socket. Repeat for the other eye.

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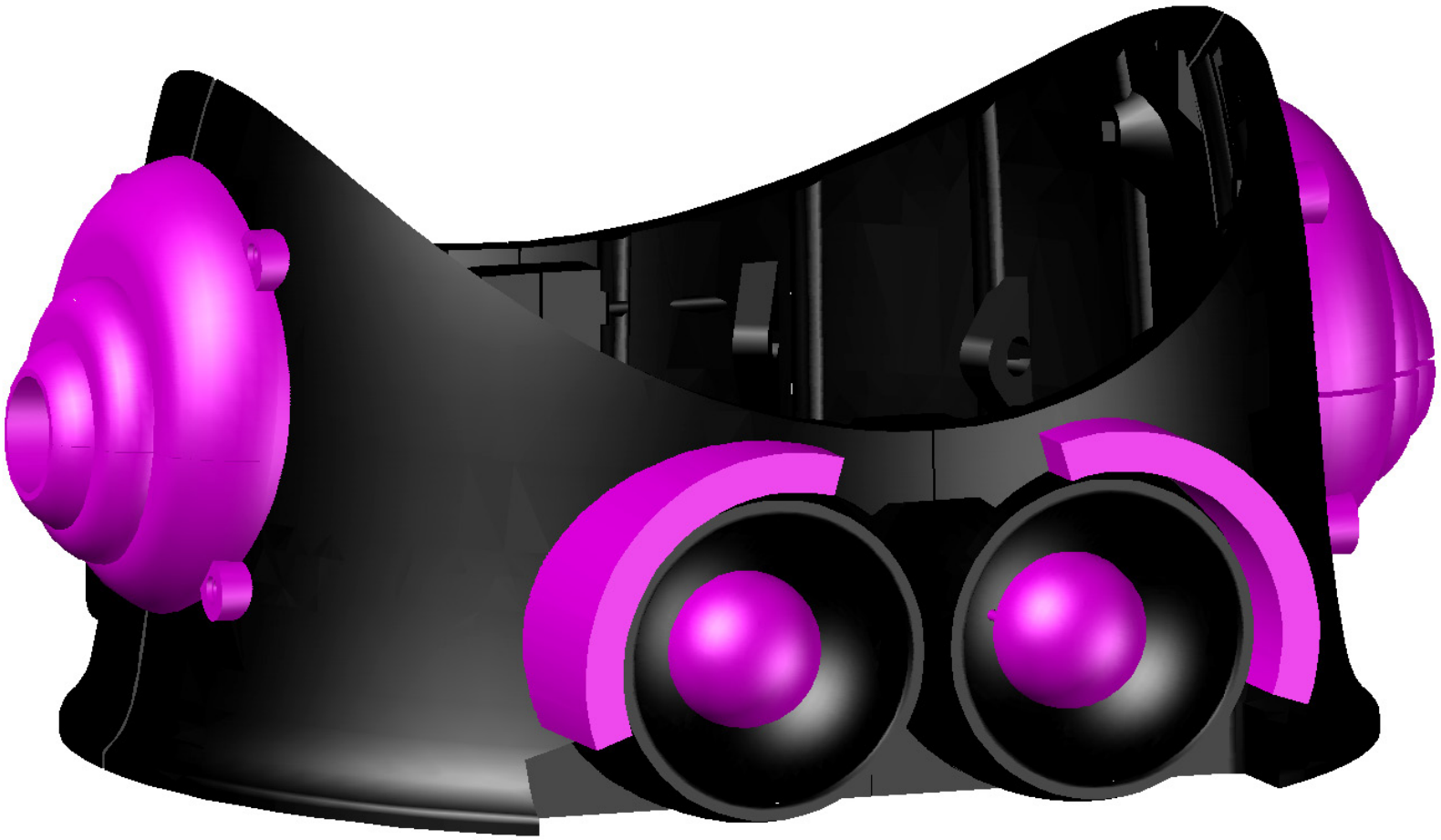

Here is what your ButtonBot should look like at this point. Almost done!

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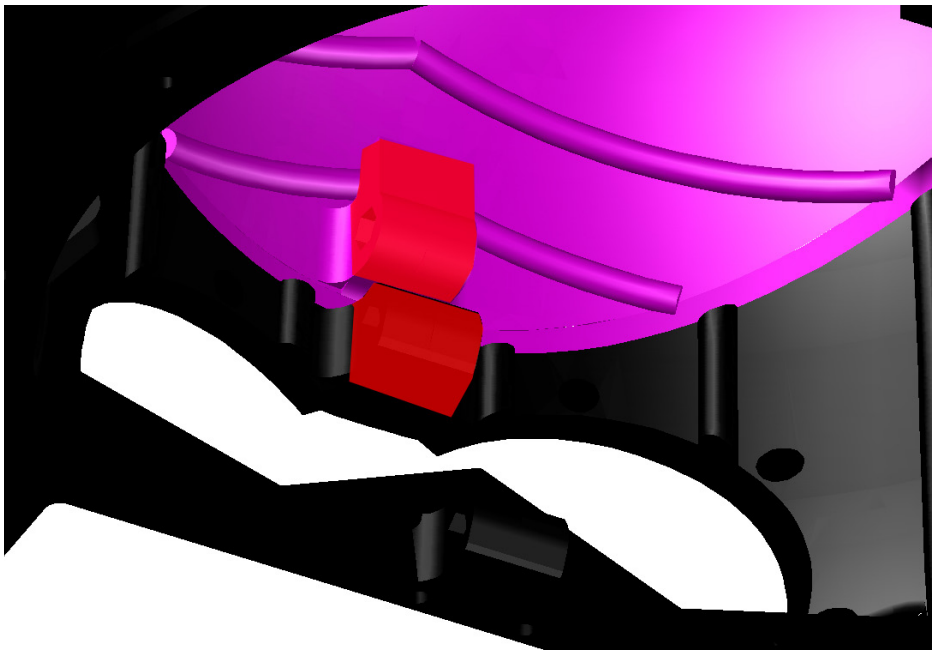
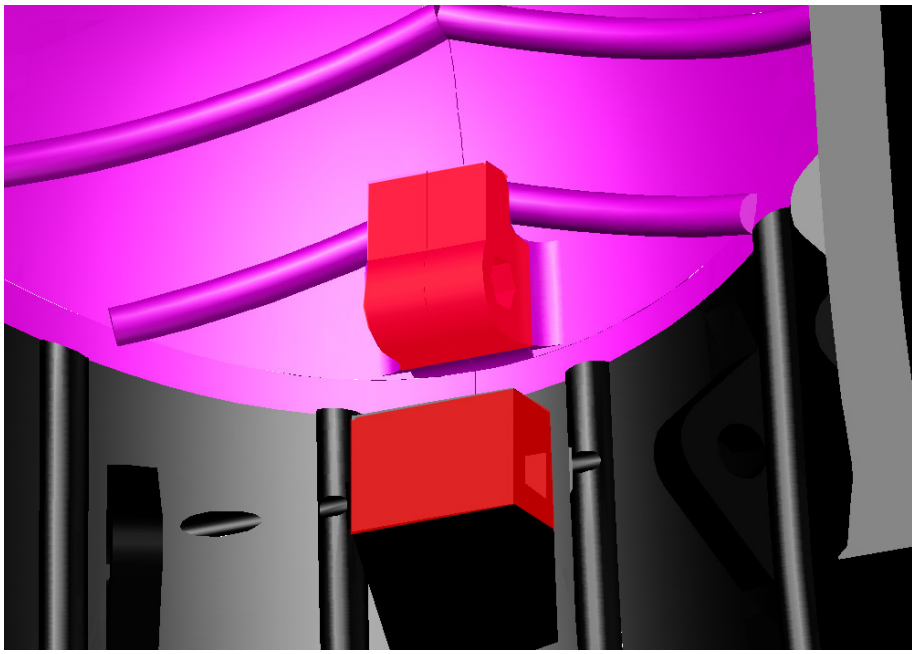
Front



Back



Shown in red are the ziptie attachment points. Loop a ziptie around the upper hook, thread it around your m3 x 30mm bolt and and back up towards the hook. Zip it tight! ButtonBot's head is now attached to his face! Hot glue is an alternative method to attach the two assemblies as well.

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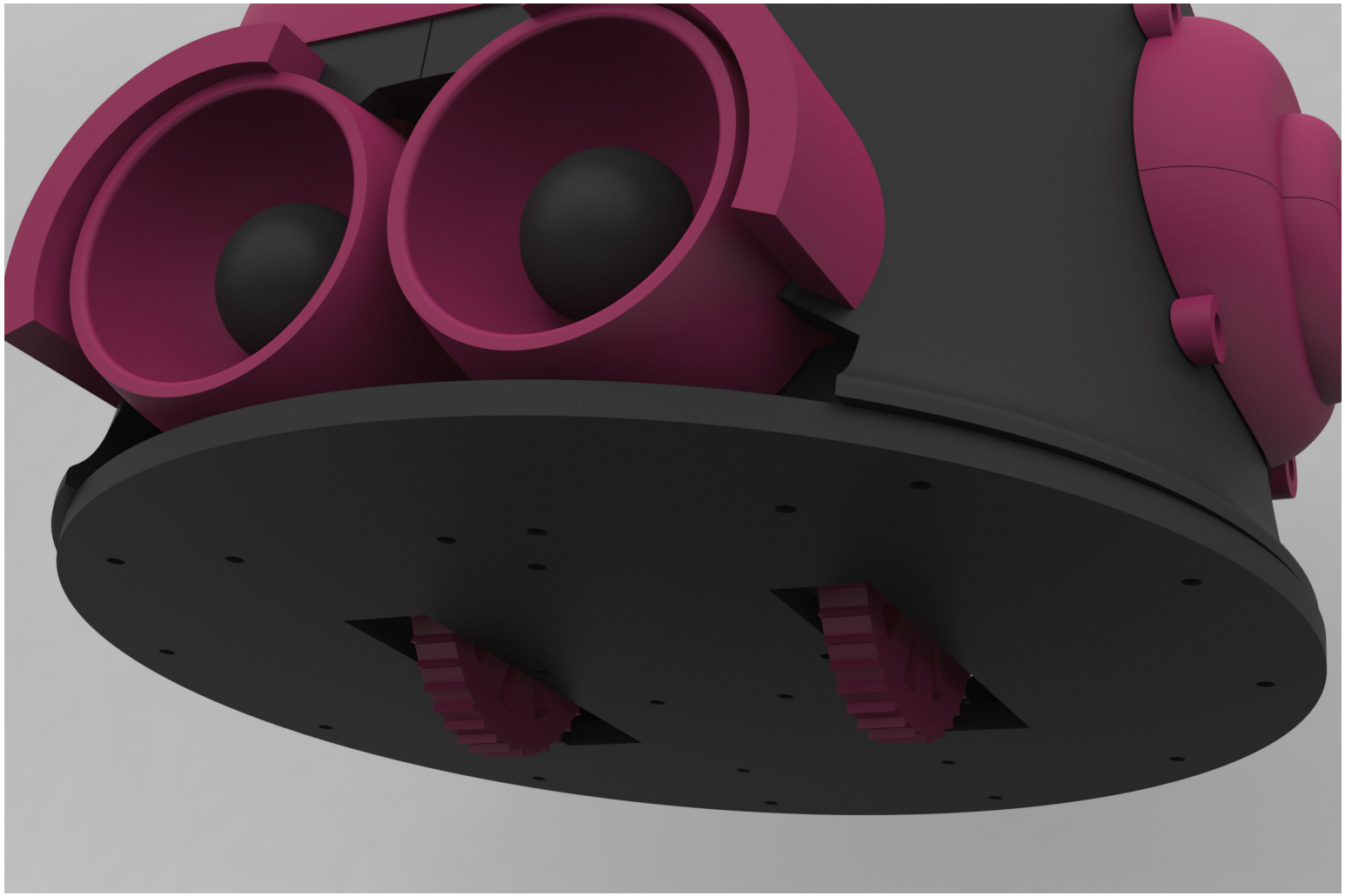

Bolt the base assembly into the face/head assembly.

Step 13/14

Shown here is the **earpin.stl and claw.stl.** Clear ribbed tubing, sized to fit the printed pieces, was used for arms. Both the earpin and claw have holes in them that will accept armature wire to help shape the arm. This is an area to express yourself and come up with new designs. Add antenae, different arms, claws only, the list goes on and on. Have fun with it!

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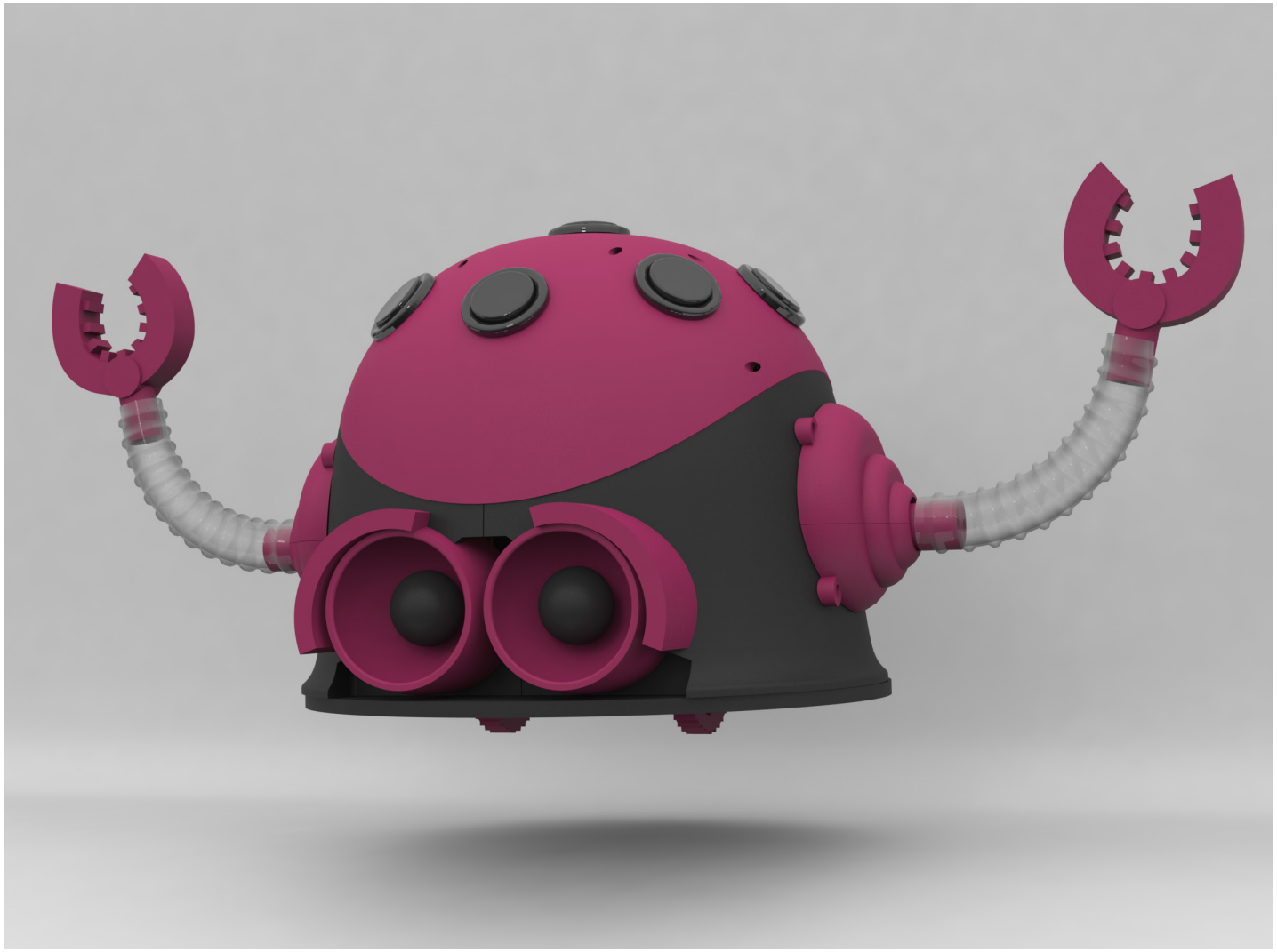

Congratulations! You just made yourself a ButtonBot! Experiment with the code and design.
The design team at Makerbot is excited to see what you come up with!

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Appendix A: ButtonBot block diagram