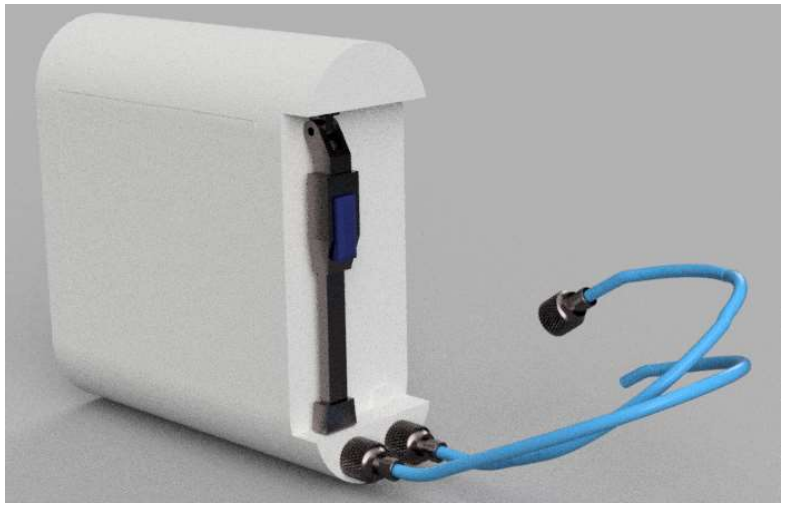
MrBaddeley
R2D2 version 2 Battery & Hoses instructions
Version 0.1 (Draft)

https://www.patreon.com/user?u=4294285
for other parts and instructions

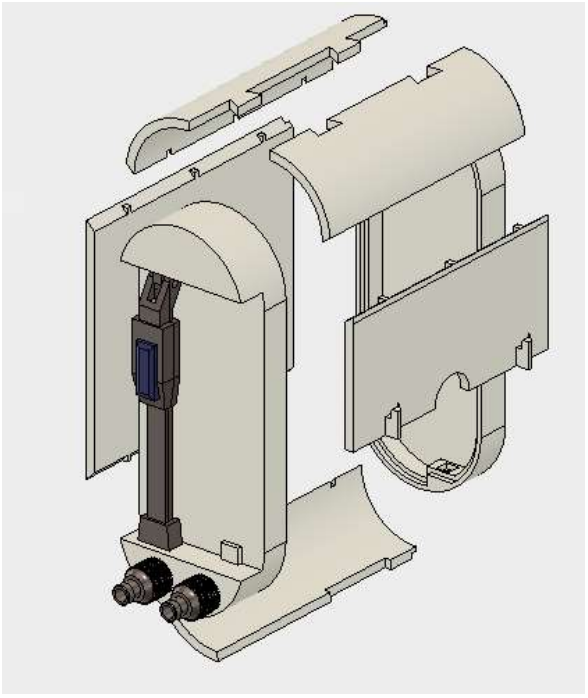
Features…



Fully printed including flex hoses with solid inners to keep shape.

Full detail including knurled screws and braided hoses.

Hoses fit via magnets (10mmx5mm) so easy removal and limit damage if pulled.

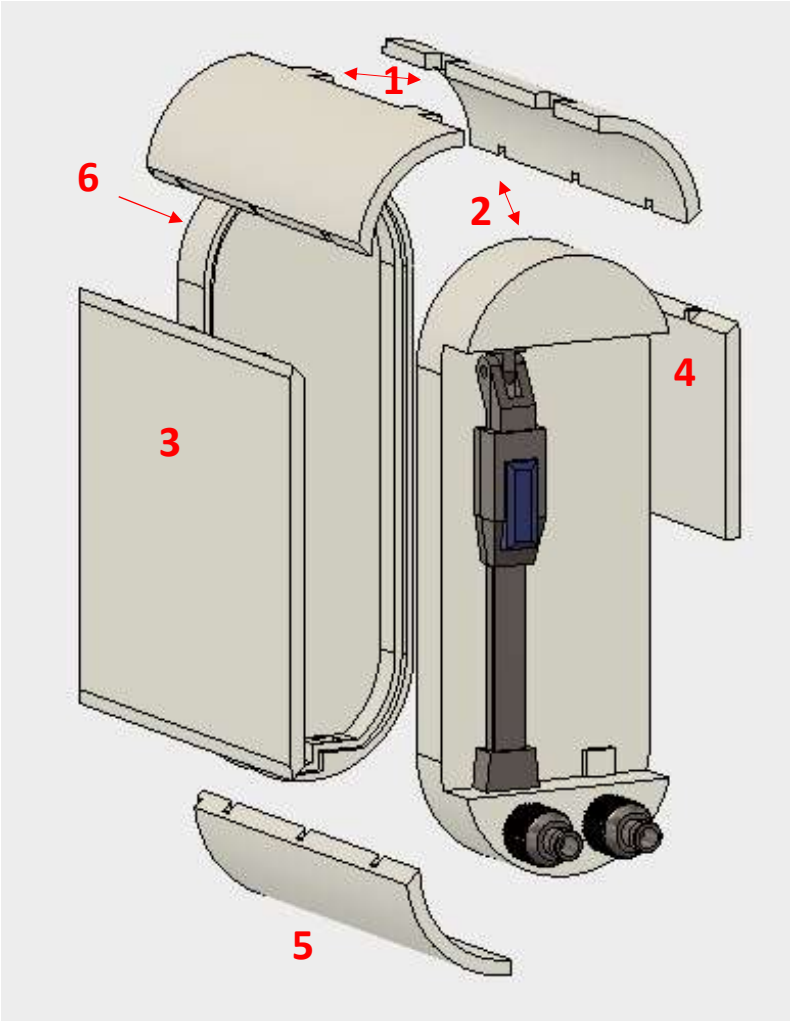


Cut for minimum warping (ABS friendly)

Dovetails / Joints for easy assembly & alignment

Full fitting to support drive system & Foot Shell

MrBaddeley Battery Boxes



Firstly the basics & Assembly of the Battery Box.
Each box consists of 7 parts. The Battery Box has always been difficult to cut / print as curves do create warping if not careful. It's a fairly simple structure so printing in two parts is possible however on a number of tests I've had splitting and warping hence the split into 7.

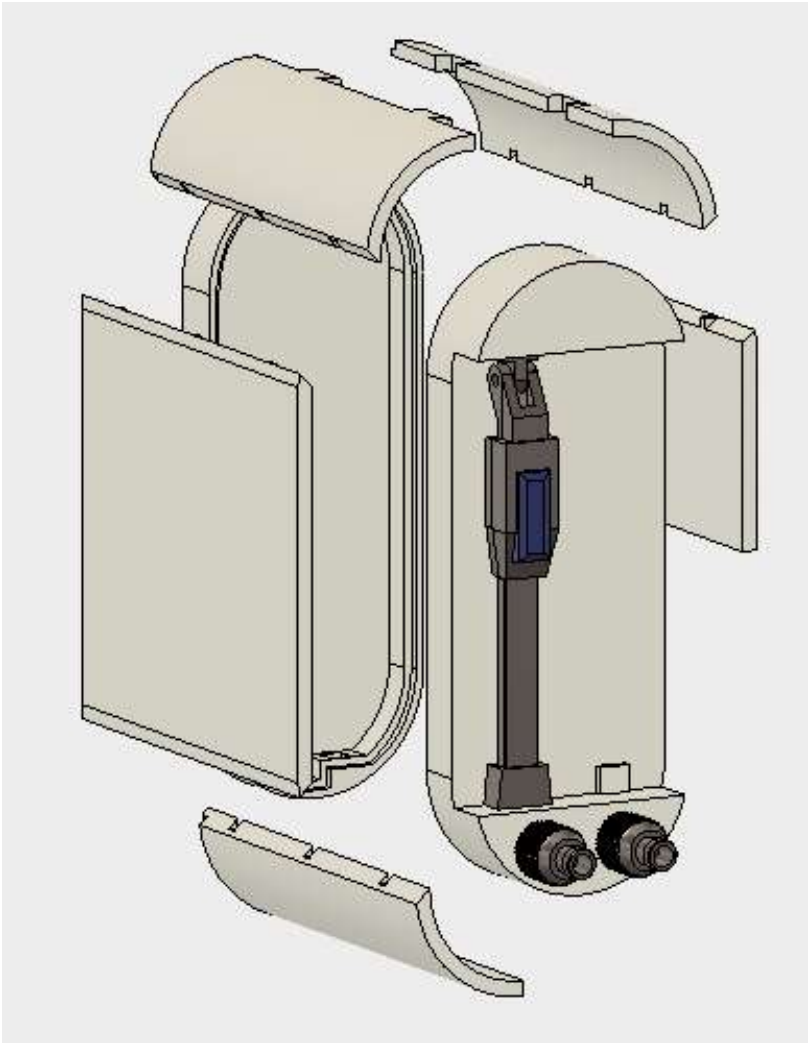
3 layers, 3 top and bottom. I did switch between .3 and .1 layer height. It works perfectly on .3 but will give some more sanding however .1 is a longer print on those parts but easier to sand. Infill I used 15% but they're thin panels so it doesn't make much difference. Support is needed on the front panel.

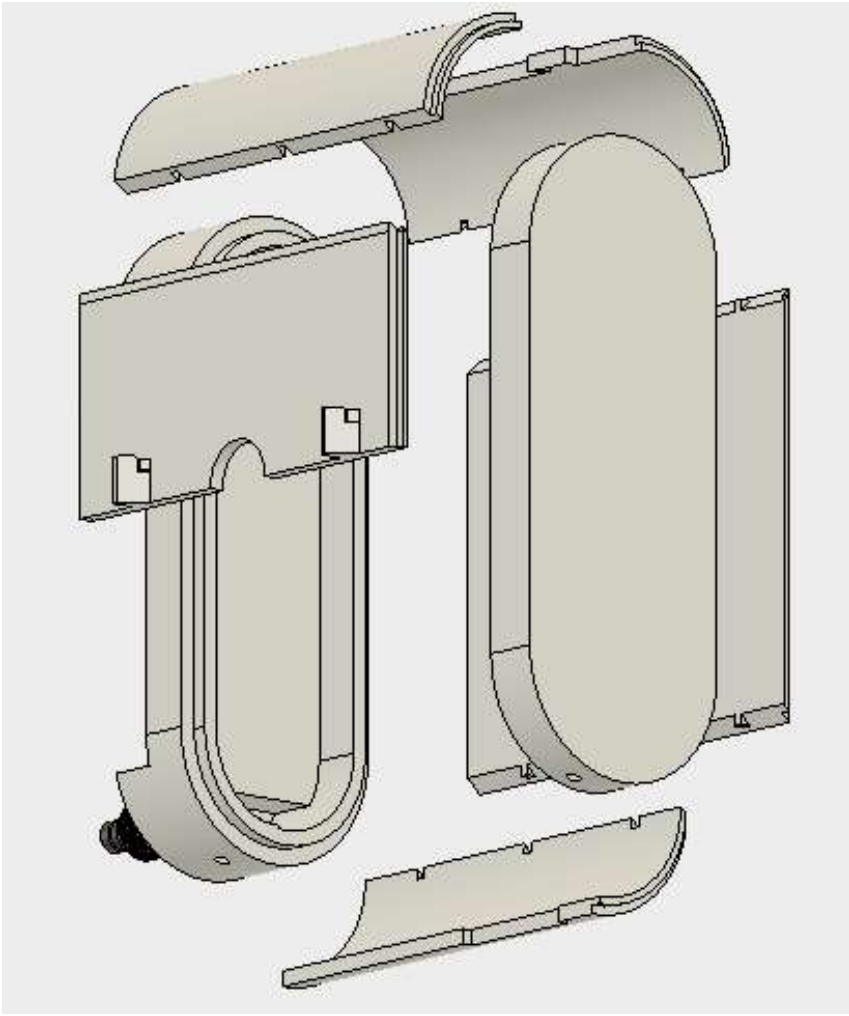
I printed in ABS (as always) and used acetone to weld. Other materials various recommended glue / weld is given on the 3D printing forums & facebook pages.

Simply print all seven, assemble first dovetail sections (curves), the I glued the curve to the front and attached the flat panels to the front and continued the assembly.

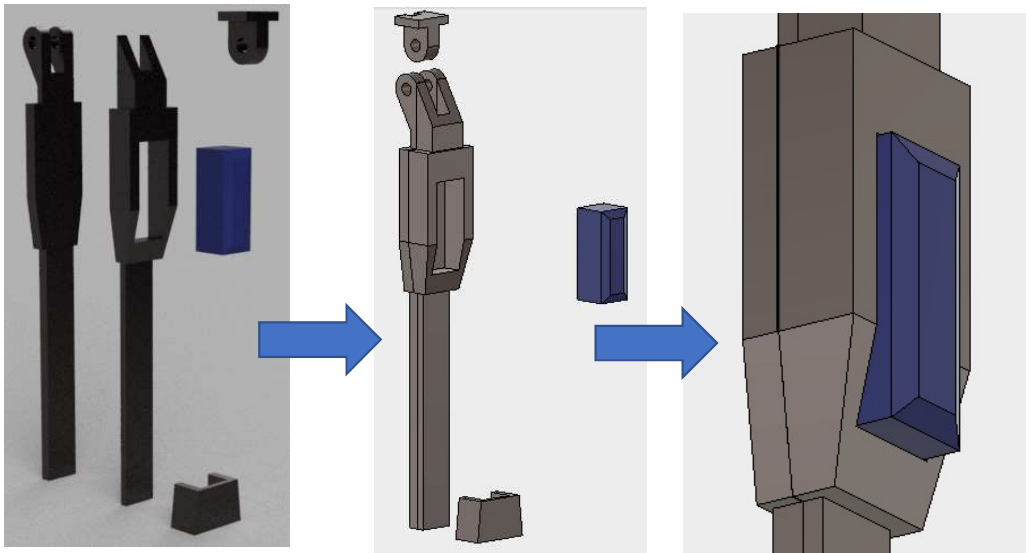
Once the Front has all parts attached I glued the back panel on and the frame is pretty much finished. Fairly obvious when you have the parts.

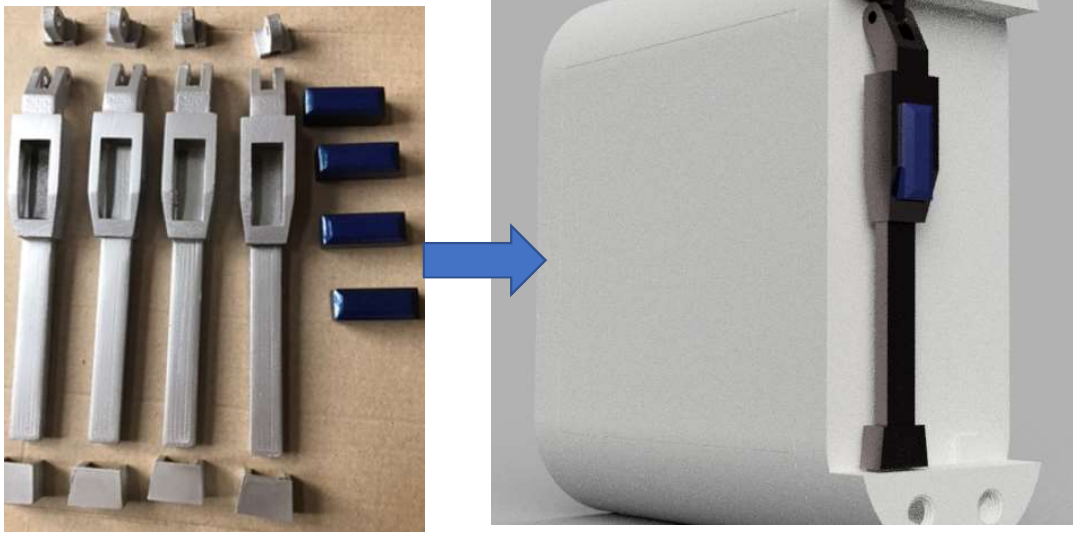
Front and Rear exploded view





MrBaddeley Battery Boxes





Next, print, assemble and paint the battery straps. These consist of 5 parts, the main strap is in two parts.

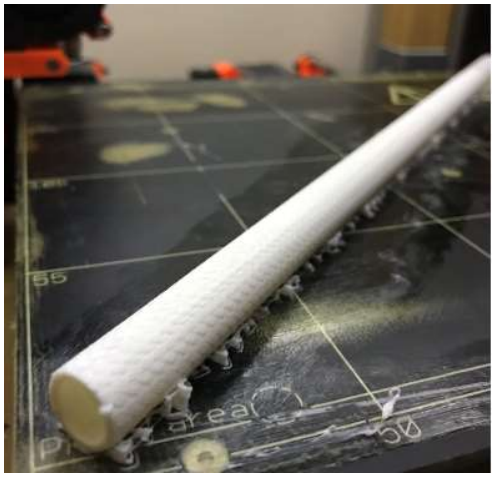
Firstly Print and glue these together. Sand / fill / paint as required. Note the insert is printed separately to ease painting (this is blue).

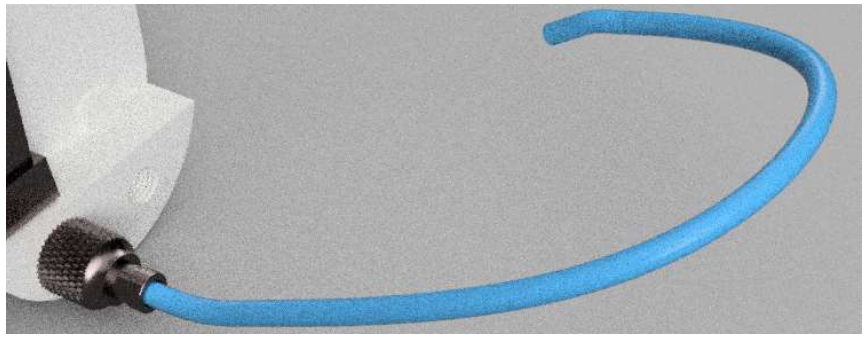
Again, print and sand to fit (it's a fairly snug fit so make sure you sand allowing for paint layers.

Finally print to upper and lower fixing brackets. Sand & paint. The upper bracket will take a bolt & nut to hold together (and visually looks better). You'll see notches on the front battery box to give accurate fixing.

Finally glue the Blue insert into the main strap. Then glue the upper bracket (with bolted strap) onto the front battery box. Glue the lower part of the strap to the notch and finally glue the lower bracket over the strap (and repeat for the other one). This gives you the assembled Box / Straps.

MrBaddeley Battery Hoses

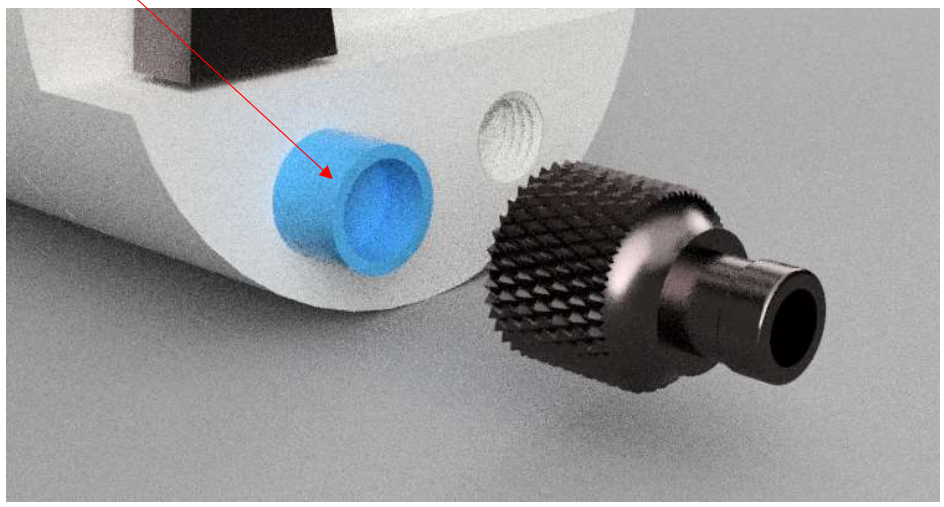




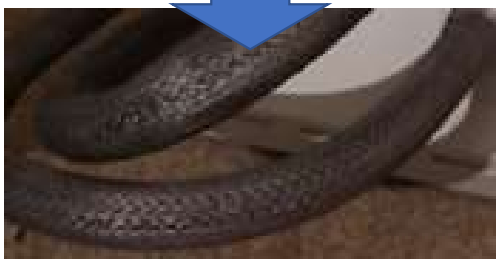
Solid core (Printed with supports obviously) keeps the shape and the knurls clip into the hose & holes for magnetic latch to fix the hoses on.

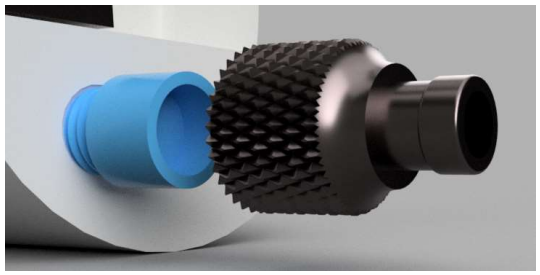
Hoses can be printed in NinjaFlex, needs a large bed (Prusa Mk2 on the pic) to get the length. .1 layer height with supports

Sprayed lightly black and then Rub n Buff (I used silver on the pic, but bronze / copper is more accurate



MrBaddeley Battery Hoses





Print out 4 hoses (you can buy the hosing, the prints just mean it's more accessible to everyone). These need to be Ninjaflex (I did white, but there's a gold filament which may be a better base colour.

The hoses do take a while (13 hours for me on my Prusa), but they do work and finish nicely. I printed mine about 1mm off the plate with supports as I got a slight flat spot otherwise.

Once the hoses are printed, print the inserts and you basically slide / twist the hoses on the inserts. This gives two sets of two hoses (mirrored for left and right).

These can them be painted and finished (light prime, black base and light rub n buff).

Then print the knurled 'screws' (BattCableKnurl) and fixing pieces (FootCableScrew & BattCableScrew). You'll need supports. Sand to ensure a nice fit and glue a 10x5mm Magnet into each of the parts inside with epoxy resin. Let the glue set properly and dust slightly with talc before testing. Finally paint the Knurls silver.

Clip the cables onto the knurls (you may need to trim the inserts). A little superglue will ensure a better hold.

The FootCableScrew clips onto the foot holes (superglue in place) and the BattCableScrew screws in place (again superglue).

Finally assemble all together to test.

Once the Battery Boxes are all assembled and you're happy with the hoses / fit you're ready to fix to the feet shells.

Note there's a M4 square nut hole inside the battery frame to fix to the main shells. They're bolted in with a M4 Bolt. The M4 Nuts can be held in place with a little ABS sludge or glue to make the assemble easier.

These are bolted from underneath (I leant by Artoo back a little to bolt these on.) and you're pretty much done!

The Battery hoses will just pull off for transport and the battery boxes unscrew to allow easy access to the foot / removal of the feet for maintenance.

Supported and tested by Sean Lavigne, Jay Williams, Steven Elford, Robert Gusek, Rob Dinniwell, Joseph Masci, Sam D. Fenimore, LarryJ, tevans, Rick Davis, Brendan Faulkner, Nicolas Carré, Ben Langley, Mathieu Saint-marc, Chistopher Edwards, Mark Oram, Tim Parr, Jon Haag, John Gardener, Ryan Roehitch, Oiva Ranta, Wes Thierry, Robert Bean, Mitchell Young, Jake Danible, Simon Ruel, William Meyer, Brian Bishop, Danny Olsson, Rob Saey, Steve Nuitall, Gregory Welch, Ben W Bell, Tarak Sallini, James Van Dusen, Jospeh Powell. James Dyer, Joe Gravelle, Pierre-Alain Ney, Mauro Santini, Alistair Blake, Charles Wright, Anthony Jukes, John Springer, Richard Gregory, Brian, Dawn Kitsune, Colin Dick, Chuck Arrivas, Rudolph Bescherer Jr, Jericho63, Travis Crusenberry, Ryan Roehrich, Mark Coombes, Jason Hawkins, Charles Everette, Rick Ahrendt. Dave Vanderwekke, and The Mighty Jabba's Collection!!