

D-Ov2Evo - Main Bar

Parts List, Printing Tips

Last change: Oct 15, 2024

NOTE: Please always refer to the [Wiki](#) and the [D-Ov2Evo video tutorials](#) in addition to these instructions!

Parts List

Use these parts from the original MrBaddeley folder MainBar:

- MainBarCap.stl
Print 1, any material, no supports
- MainBarHolderA.stl
Print 1, any material, no supports
- NodArmLever.stl
Print 1, any material, no supports
- TopBarPaintMask.stl
Print 1, any material, no supports

Use these parts from the D-Ov2Evo folder MainBar:

- MainBar_Counterweight_10Pin_Socket_Connector.stl
Print 1, any material, on the side farthest from the toothed gear, no supports
- MainBarHolderB_Connector_Cutout.stl
Print 1, any material, on the side farthest from the toothed gear, no supports

Hardware and Bought Parts List

Fasteners

- M3 square nuts (x3)
- M2x12mm socket head bolt (x4)

Other Hardware

- Lead shot or steel bearings for ballast. 1-3mm diameter. Finer grain or dust is not recommended. How much you use is going to vary (heavier robots are more stable but drive slower and put more load on the bearings), but you will not need more than 3kg.

Other Bought Parts

- 10pin male socket connector, this type:



- Dynamixel TTL cable, 16-20cm
- STEMMA / QWIIC I2C cable, 30cm
- 2 component epoxy resin, epoxy glue, or superglue

Tools

- Soldering iron and solder
- Heatshrink

Printing Tips

Material

We always recommend using ASA if you can print it (printer has an enclosure), but most of these can be printed in any material really.

Strength

The main bar should be printed in your printer's strength profile, or if it doesn't have one, with the following settings:

- Layer height: .2mm
- Perimeters: 6 or more
- Bottom layers: 6 or more
- Top layers: 6 or more

All other parts can be printed any way you please.

Orientation and Supports

Contrary to Mr Baddeley's practice, these parts are **not oriented the way they should be printed**, but your printer's auto-orient feature will take care of that for most items. No supports are needed.

Assembly

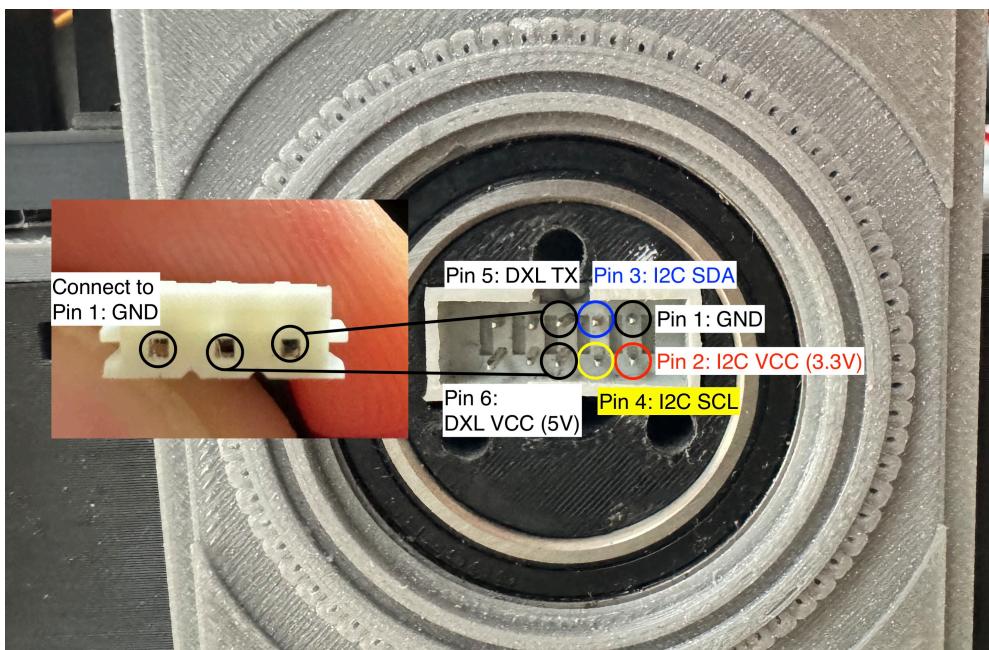
Please refer to the tutorial video for assembly instructions. In short and for reference:

Main Bar

1. Fill the main bar with lead shot from the rear side, and fill the gaps with epoxy glue or resin.



2. Cut off the connectors from the Dynamixel and I2C cable, and solder them to the pins of the 10pin socket connector. The below is how we connect this.



Note that the GND pins of both the I2C and the Dynamixel cable are both connected to pin 1 of the connector.

Never ever ever EVER plug / unplug this connector, i.e. remove or add the neck/head assembly, while battery power is on! It will fry your Arduino.

3. Insert 3 square M3 nuts into the recesses in the main bar, and fix them with hot glue.
4. Plug the other side of the Dynamixel cable into one socket on the neck servo in the body.

5. Route the i2c cable up into the body.