

Assembly

- Official Documentation:
 - Bill of Materials (BOM):
[\[BOM Link\]](#)
 - This contains a list of parts and tools that are required for the Poppy build.
 - Arms Assembly:
[\[Arms Assembly Link\]](#)
 - Trunk/Abs Assembly:
[\[Trunk Assembly Link\]](#)
 - Head Assembly:
[\[Head Assembly Link\]](#)
- Unofficial Documentation:
 - French Website:
[\[French Documentation Link\]](#)
 - No English version available; must be able to read French.
 - “Poppy Humanoid assembly instructions” Matthieu Lapeyre, YouTube
[\[Assembly Playlist Link\]](#)
 - Playlist of full Poppy assembly videos
- Notes:
 - In order to change the wiring, remove the connection from the motor with common tools like a screwdriver or pliers.
 - One of the issues we had for wiring was a connector that could not reach far enough so we plugged one into another to double the length of the wire. This technique works well and should be used if the problem occurs again.
 - If a part gets placed backwards, instead of removing the entire part, you may be able to remove the wires and orient the part correctly then rewire. This will save a lot of time.

Wiring & Motor Setup

- Official Documentation:

- USB2DYNAMIXEL Documentation:
[\[Documentation Manual Link\]](#)
 - We used section 7 and beyond because that was the only part that was relevant to us.
- Herborist:
[\[Herborist Link\]](#)
 - Herborist graphical tool is used to detect, ID, and configure Dynamixel motors.
- Poppy GRR:
[\[Poppy GRR Player Link\]](#)
 - A move player application: can be used to record movements and play them back with poppy. (We tried to use this but could not get it to work)
- Motor IDs Diagram
- AX-12A/+ Motor Documentation:
[\[AX-12A Documentation Link\]](#)
- DYNAMIXEL SDK Manual:
[\[Dynamixel SDK Manual\]](#)
 - You need to be familiar with C/C++ programming language to correctly use the software. This manual provides comprehensive information on ROBOTIS products and applications.
- Unofficial Documentation:
 - <none used>
- Notes:
 - The wire to connect the two power boards had to be cut (we are not sure if this worked or not). This was because we did not have a compatible cable (4-pin and a 3-pin) and we also wanted a single power supply instead of two separate ones.
 - We also believe that the hub connected to Poppy is defective (not certain if this is the case), so we are replacing it.

Programming

- Official Documentation:
 - Dynamixel Wizard 2
 - https://emanual.robotis.com/docs/en/software/dynamixel/dynamixel_wizard2/
 - Get the upper body moving individually using Dynamixel Wizard 2, then find a way to record movement and play it back.
 - Torso worked, but eventually only the neck was detected (ID 036). Firmware up to date, ver 24.
 - ID 33 and 43 show up but shows as disconnected and can't be moved.
 - Try changing the USB to TTL UART module in case the current one is broken.
 - Try reprogramming the motors and baud rates with a U2D2 module.
 - Programming Poppy robots using Scratch
 - [\[Scratch Programming Link\]](#)
 - This did not work for us, but it may potentially work in the future.
 - Flash a SD card with the Poppy operating system
 - [\[Burn OS Link\]](#)
 - This was used to burn the Poppy OS to an SD for use with a Raspberry Pi 3, which we got to work with a PC direct connection to the Pi, but we weren't able to get Poppy moving with this so we scrapped the idea. This could possibly work perfectly, but we think that Poppy was just messed up at the time we tried it.
- Unofficial Documentation:
 - Set a Static IP Address on Raspberry Pi
- Notes:
 - 6 Port 3-Pin hub may be defective, sent Dominiak link to order more ([6 Port XM/XL Power Hub \(3pin\) \(trossenrobotics.com\)](#)). If this doesn't fix it, might be motors and/or wiring. Wiring is secure, however.
 - New hub didn't fix the issue, still only finding 2-5 motors that may or may not be able to be connected to and moved. Finds some motors at 57600 bps instead of 1000000 like it was set to in herborist.