



# MakeYourPet Hexapod Build Guide v1.0

By Hexpod Woman

# Contents Page

What's included within this guide?

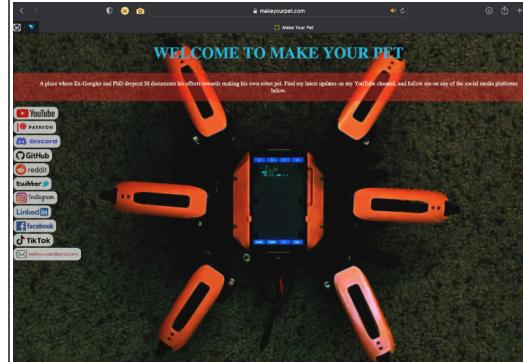

# Get Started...

Not sure if you want to undertake this project?

The best link of all, is the top level link.

**[www.makeyourpet.com](http://www.makeyourpet.com)**

Here you will find all the links to all the various pieces of information. Your next visits should be to YouTube, GitHub and Discord AND of course, leaving a small donation on Patreon is always appreciated.



## YOUTUBE

Is a good starting point for the build and for seeing other hexapods in action. As a minimum you will need to watch "How to make a Hexapod Robot Part 0 of 3" all the way to the "3 of 3". Once you've watched these, you'll have a good idea of the amount of work required. It's not a build for the faint hearted, but it is one you will really enjoy. If you're still interested in making your very own hexapod, head over to the GitHub to download the STL files for 3D printing.



How To Make A Hexapod Robot.  
Part 0 of 3: Calibrating the servos. ....  
3.7K views • 8 months ago

# The Ball is Rolling...

Let's get started and for this you'll need a 3D Printer!

## GITHUB

<https://github.com/makeyourpet>

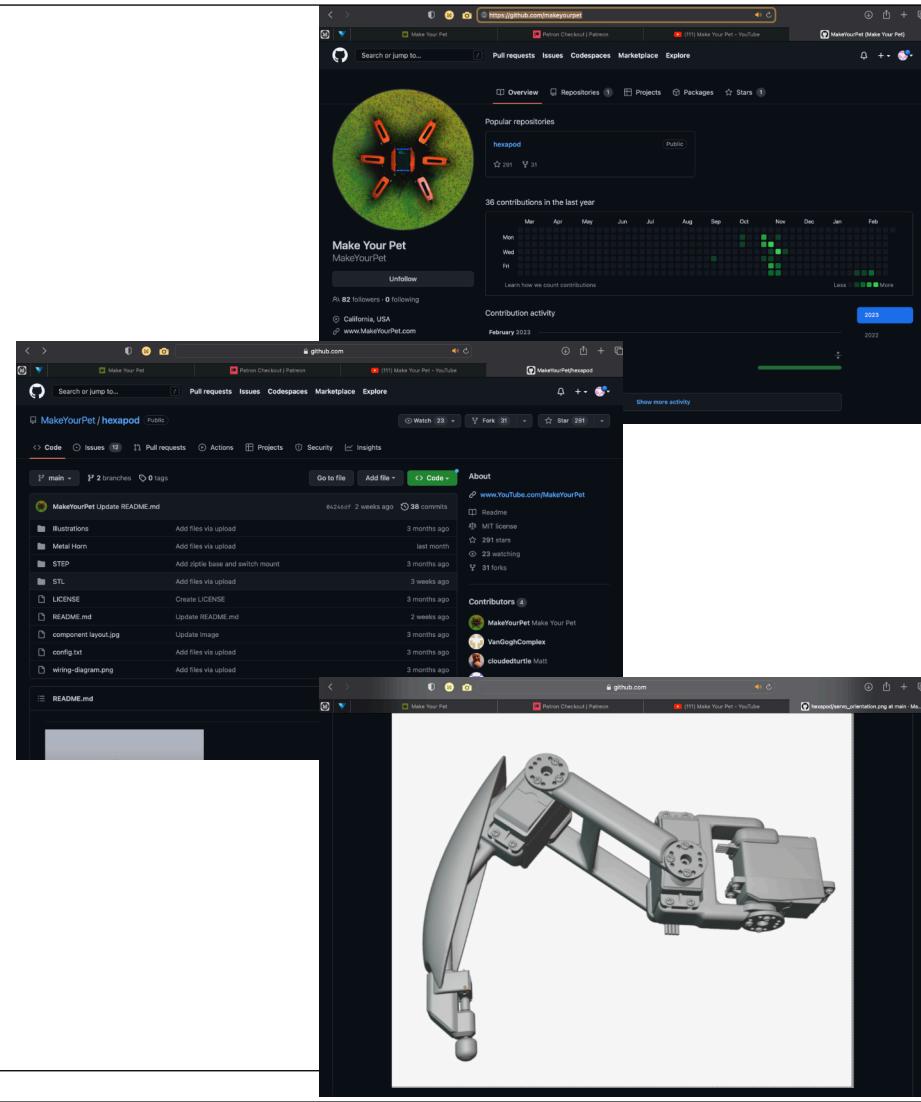
Click on Repositories and then hexapod.

Here you will find all the 3D printable parts in STL and STEP format. If you're not familiar with STEP, I would recommend just using the STL. You should download all the STL files onto your local computer and print them all from PLA with 15% infill to keep the parts light and the print time minimal. You can print stronger and alternate versions later if required.

**Let's keep things simple for the initial build.**

Here on GitHub you will also find useful illustrations, component layouts and wiring diagrams. I will include these later in this guide.

Whilst your 3D printer is busy printing, I would recommend that you install the desktop or mobile version of the **Discord App** and join the community of MakeYourPet Hexapod Builders. It's an awesome community and we're all super friendly and helpful.



# Discord It...

Let's chat... Discord is the meeting place!

## DISCORD

<https://discord.com>

Download and Install the Discord app.

You will need to register an account and search for the MakeYourPet Group. Once you're there, you will see all the different chat rooms on the left side.

Dont forget to introduce yourself to everyone!

Now that your **3D Printer** is busy for the next few days and you have **Discord** a place to chat with other hexapodders, you should start thinking about purchasing the parts for your build.

As a ball park, estimated costs for the build is around £€\$ 500.

The image shows two screenshots of the Discord platform. The top screenshot is the official Discord website homepage with a blue background. It features the Discord logo at the top left, followed by navigation links: Download, Nitro, Discover, Safety, Support, Blog, and Careers. On the far right is a "Open Discord" button. The main headline reads "IMAGINE A PLACE..." in large white letters, with a subtext "...where you can belong to a school club, a gaming group, or a worldwide art community. Where just you and a handful of friends can spend time together. A place that makes it easy to talk every day and hang out more often." Below this are download links for "Download for Mac" and "Open Discord in your browser". The bottom screenshot shows a screenshot of a Discord channel interface. On the left is a sidebar with a list of text channels under the category "Make Your Pet": #welcome, #show-your-hexapod, #hexapod-build (which is selected), #3d-part-design, #chica-apps, #servos, #servo-controllers, #software-android, #general-talk, #off-topic, #youtube-stuff, #phone-drone, #links, and #polls. To the right is a list of messages in the #hexapod-build channel. The first message is from "Fasstoch" (Yesterday at 16:15) saying "even better 😊". The second message is from "Kwark" (Yesterday at 16:23) asking if there will be a 2040 version of the bottom-cover? Below the messages is a photograph of a hexapod robot assembly on a wooden surface. At the bottom of the channel screen, there are message input fields and various emoji icons.

# Let's Go Shopping...

Let's spend some spendoolies and buy the parts!

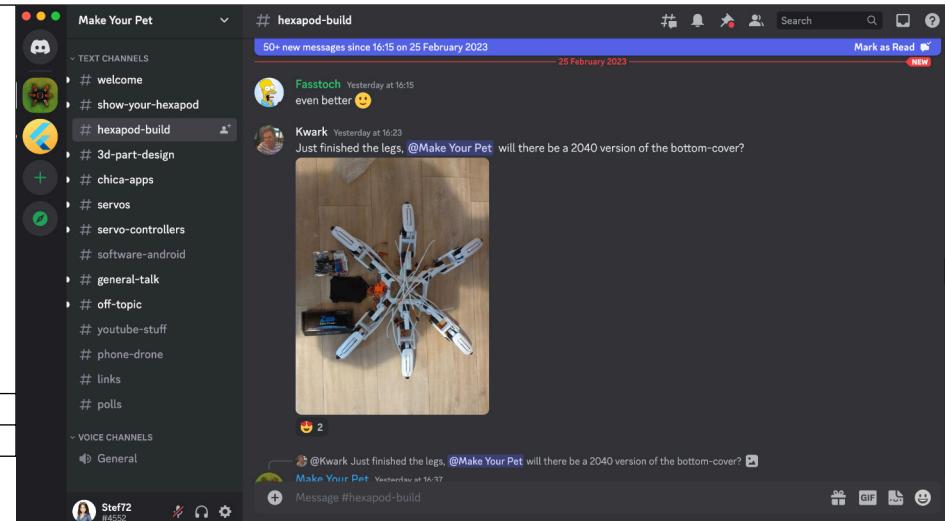
## BUY THE PARTS

[Amazon.com](#)

[Ebay.com](#)

The majority of parts can be purchased from Amazon and Ebay, but looking further afield yourself may give you better savings.

r



# Assembly - Part 1 - Servos

Let's spend some spendoolies and buy the parts!

## REQUIRED

SERVO

DIGITAL SERVO TESTER

3DP CALIBRATION RIG

3DP CALIBRATION ARM

For this stage, we will need to place the servo inside the calibration rig, attach the calibration arm and use the servo tester to check the centre point and extent of the servo movements.



# Assembly - Part 2 - Coxa

Let's spend some spendoolies and buy the parts!

## REQUIRED

CALIBRATED SERVO

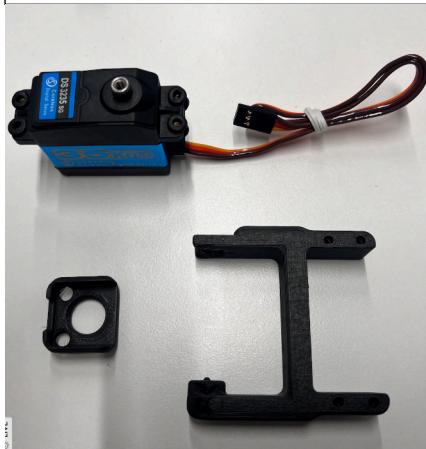
METAL HORN and CENTRE SCREW

M1.6 ALLEN BOLT

COXA

SERVO BACK HINGE

For this stage, we will need to place the servo inside the calibration rig, attach the calibration arm and use the servo tester to check the centre point and extent of the servo movements.



# Assembly - Part 3 - Femur

Let's spend some spendoolies and buy the parts!

**REQUIRED**

**CALIBRATED SERVO**

**METAL HORN and CENTRE SCREW**

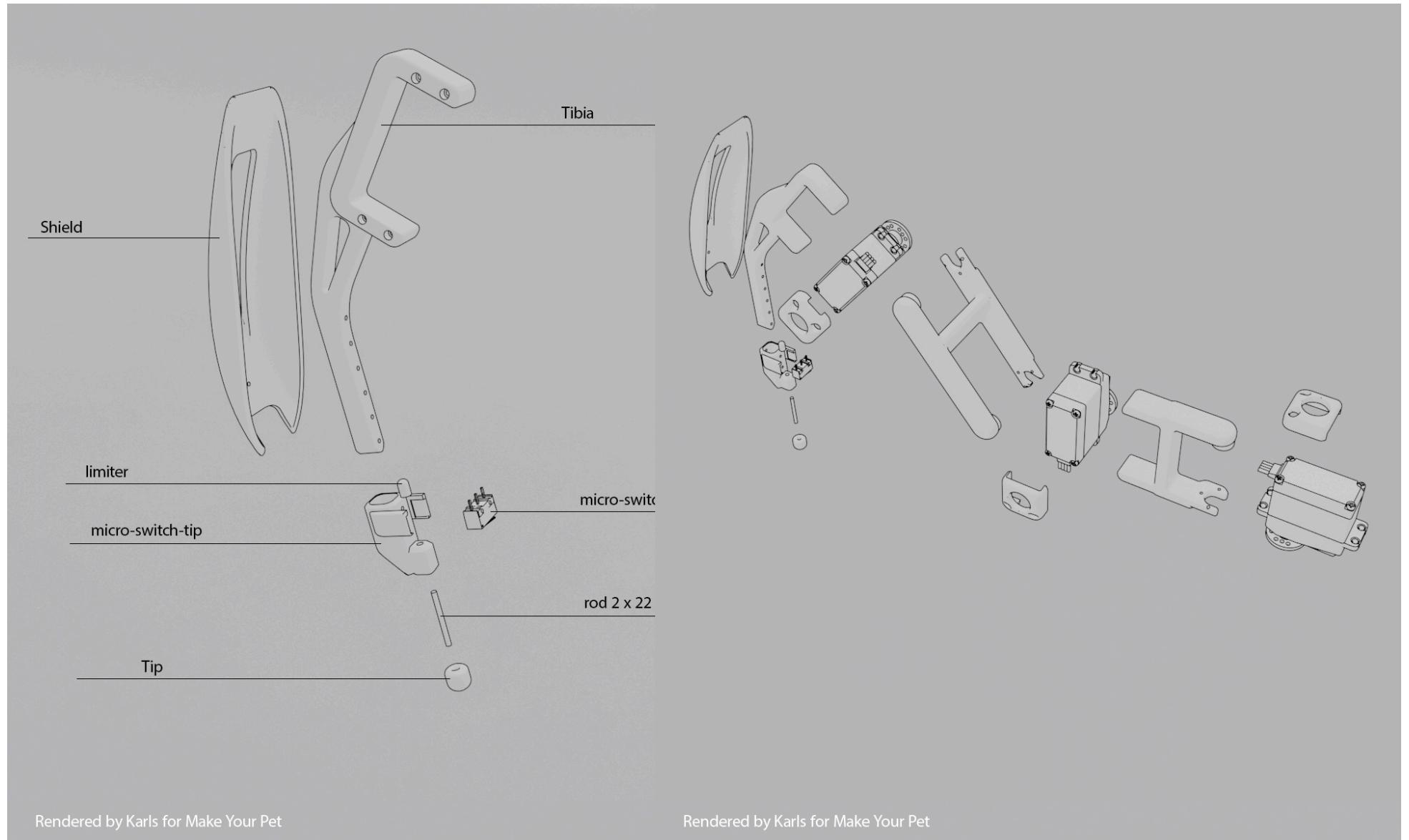
**M1.6 ALLEN BOLT**

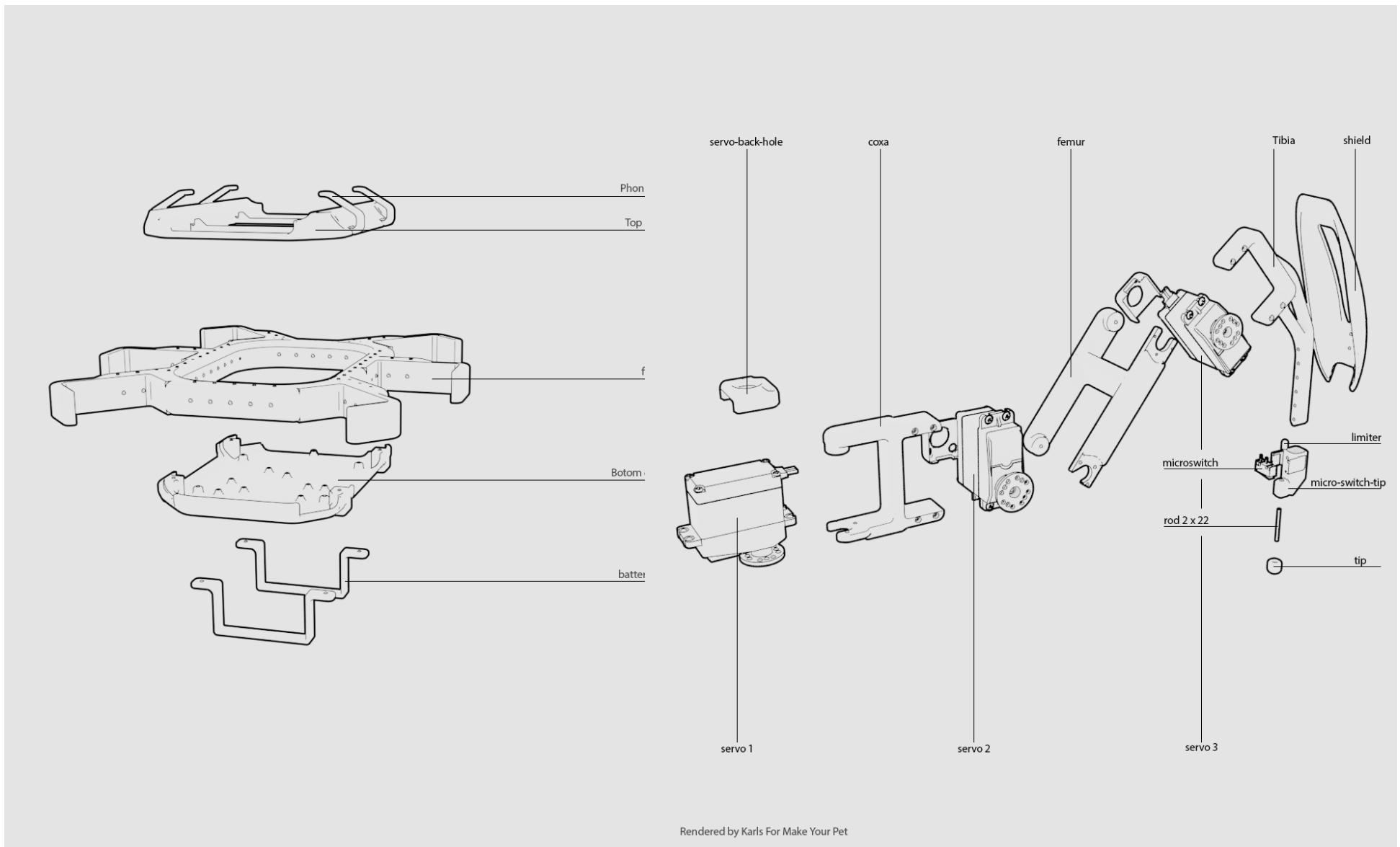
**FEMUR**

**SERVO BACK HINGE**

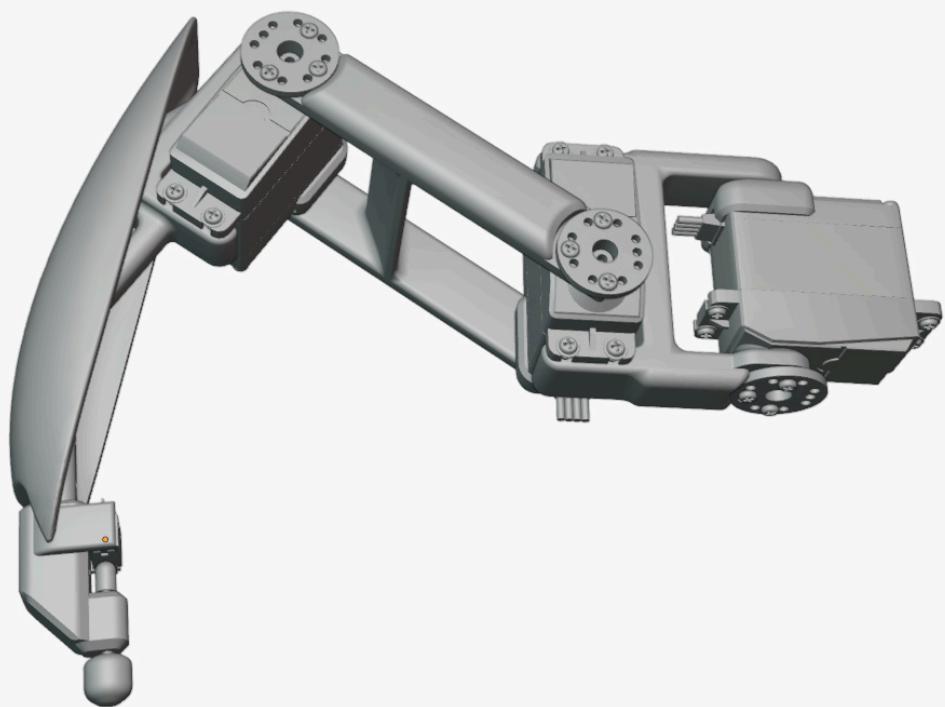
For this stage, we will need to do the same as we did in the previous stage, but attach to the femur bone.

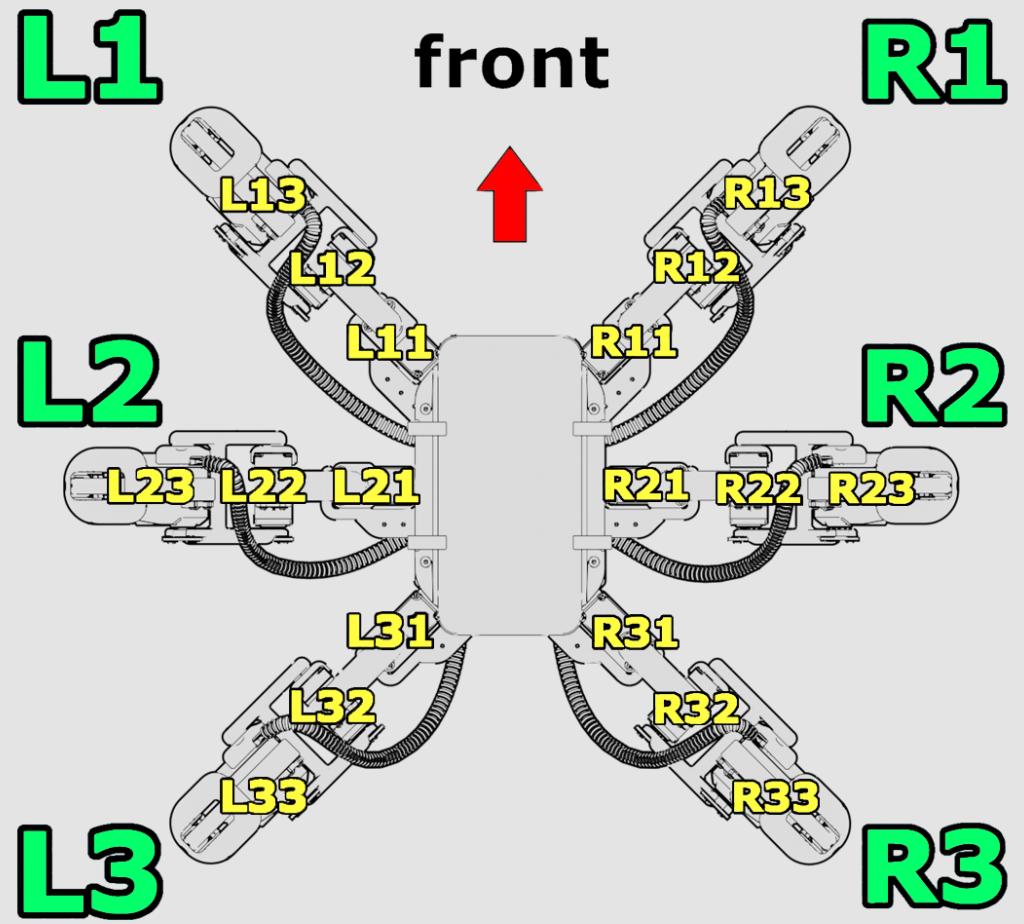
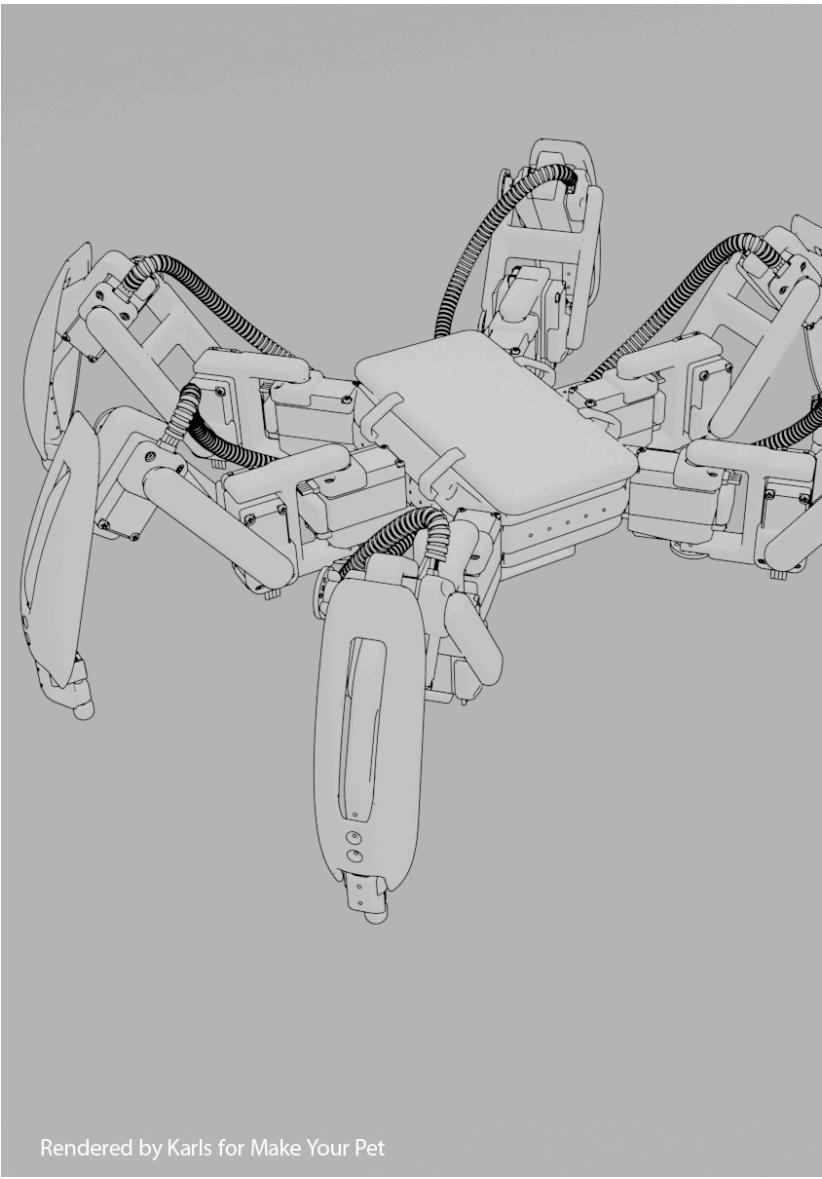


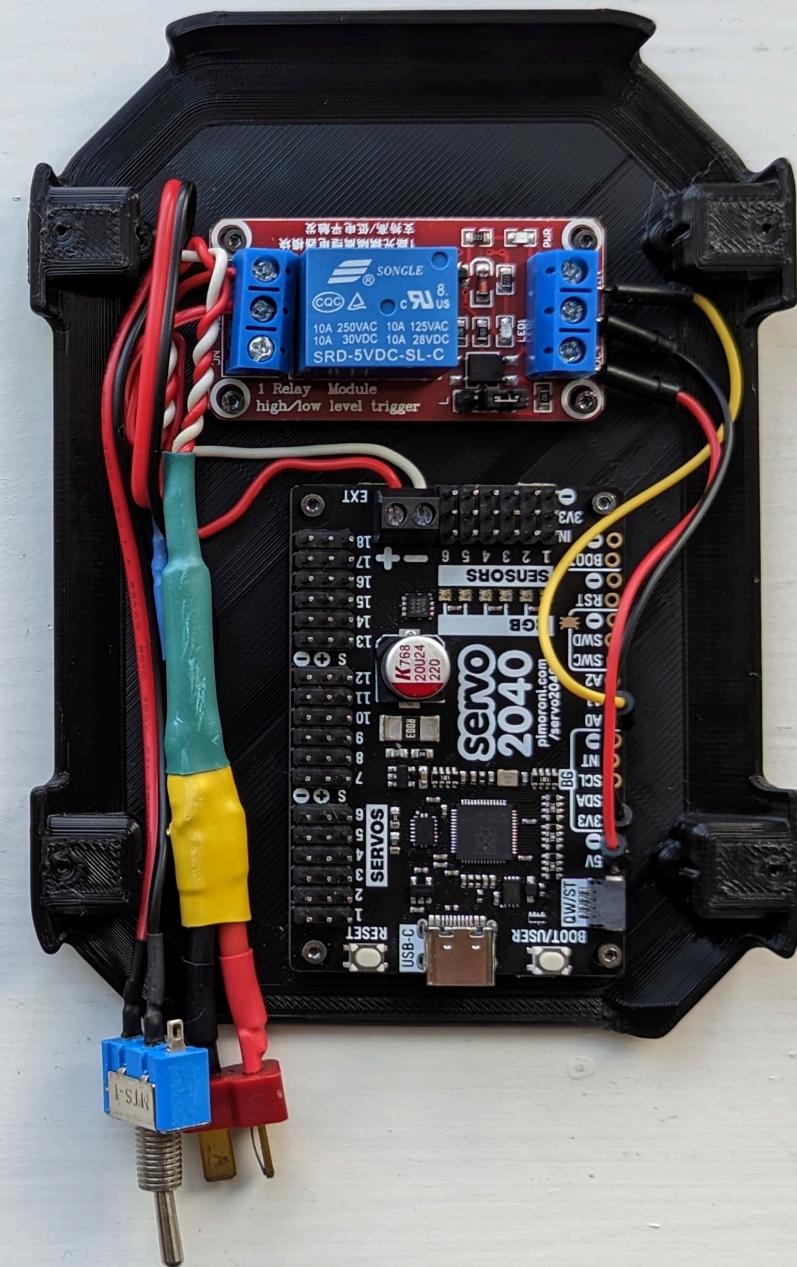
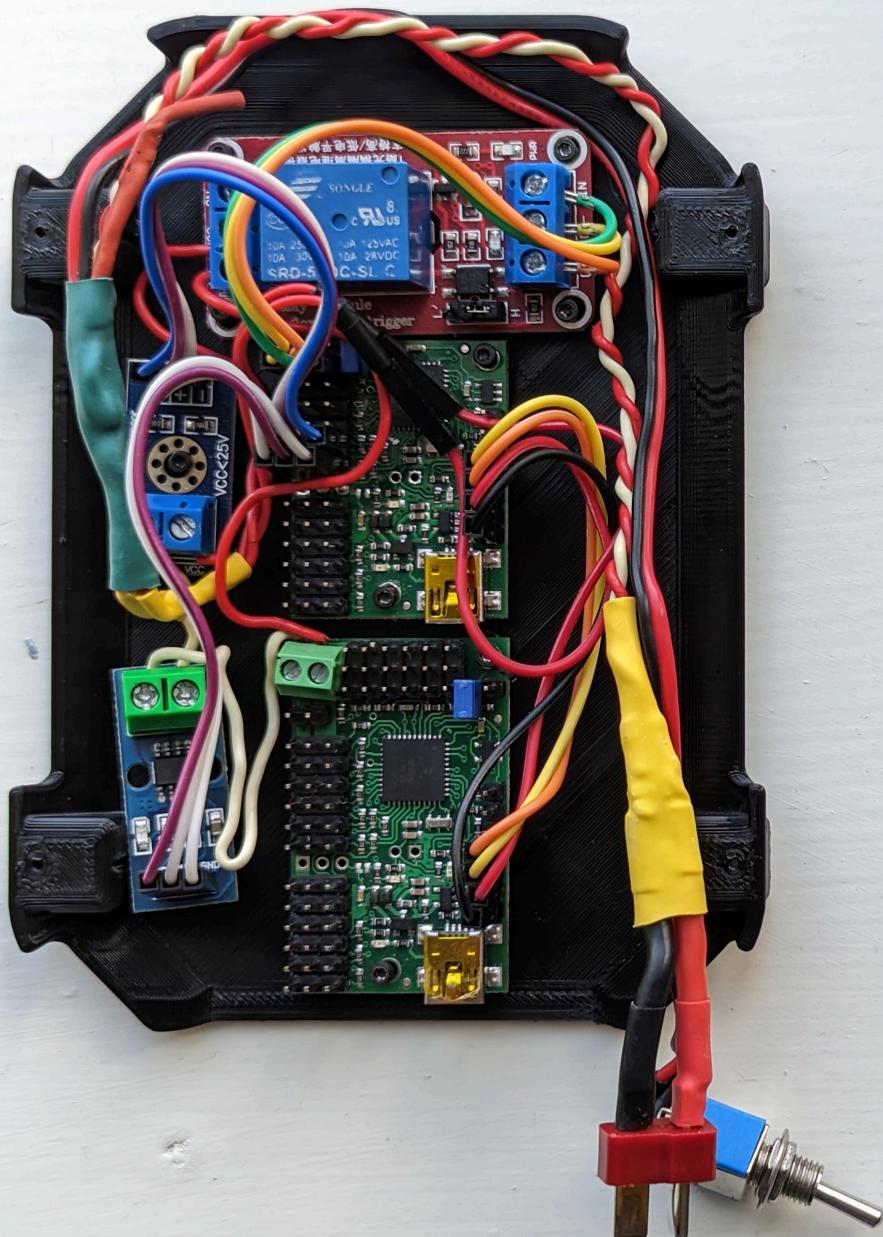


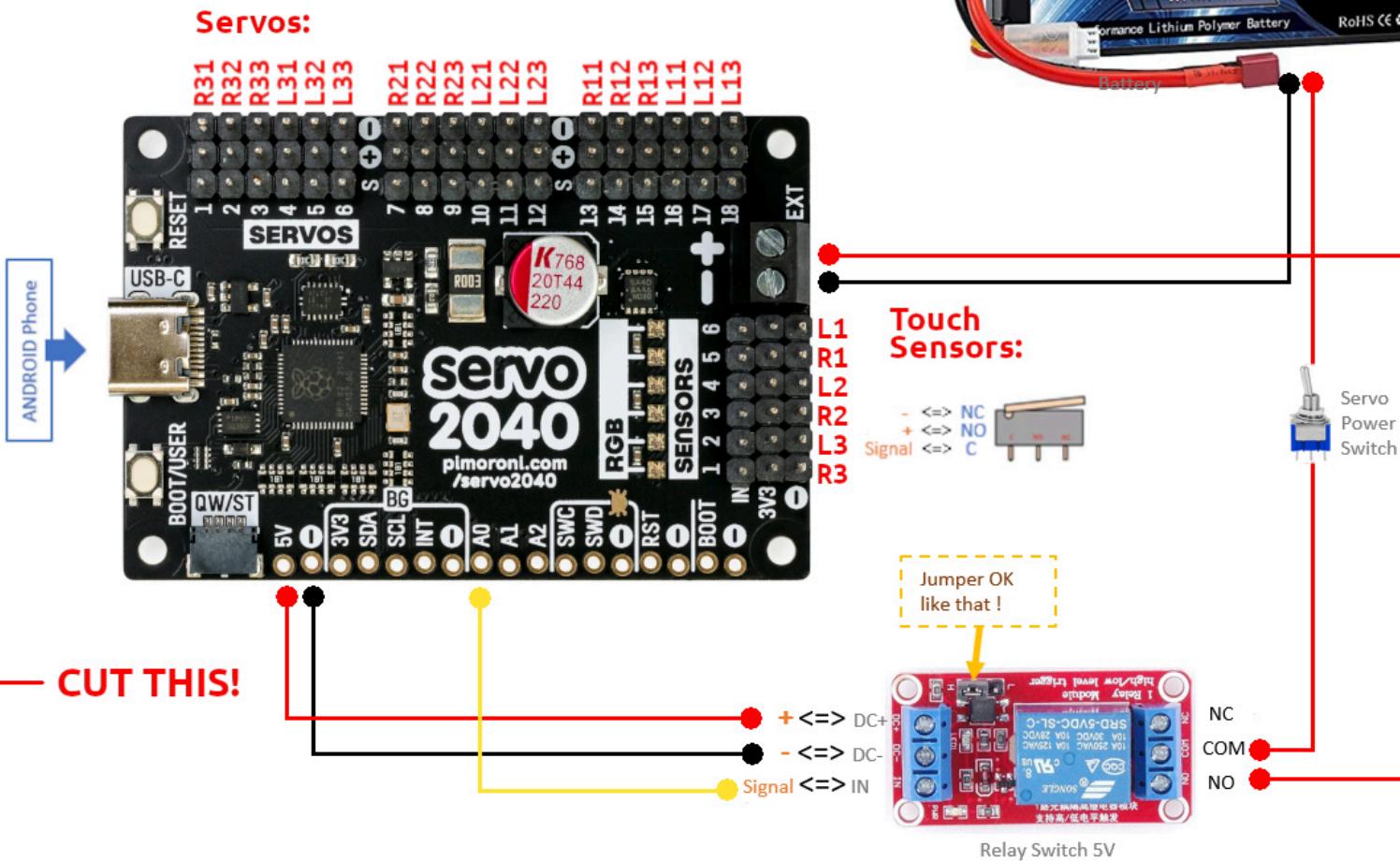


Rendered by Karls for Make Your Pet









```
# Any line that starts with a # is a comment.  
# Servo names: L11 L12 ... L33 R11 ... R32 R33  
# Pin names: P0 ... Pn on the (P)rimary board  
# Pin names: S0 ... Sn on the (S)econdary board
```

```
# Servo pins and servo calibration values  
#  
# Format: [Servo name] [Pin name] [-45 usec] [+45 usec]  
L11 P15 1975 1055  
L12 P16 1925 1005  
L13 P17 1955 1055  
L21 P09 1905 980  
L22 P10 2020 1085  
L23 P11 2030 1090  
L31 P03 1990 1065  
L32 P04 2005 1085  
L33 P05 1980 1040  
R11 P12 1985 1065  
R12 P13 1910 975  
R13 P14 1950 1010  
R21 P06 1965 1065  
R22 P07 2050 1110  
R23 P08 1990 1040  
R31 P00 2000 1120  
R32 P01 1990 1005  
R33 P02 2030 1100
```

```
# Touch sensor pins  
# Removing a sensor definition will disable that sensor.  
#  
# Format: [Touch sensor name] [Pin name] [High Active: 0 or 1]  
TS_L1 P23 1  
TS_L2 P21 1  
TS_L3 P19 1
```