Assembly Instructions

To facilitate assembly, please refer to the "CLB Component Details" document.

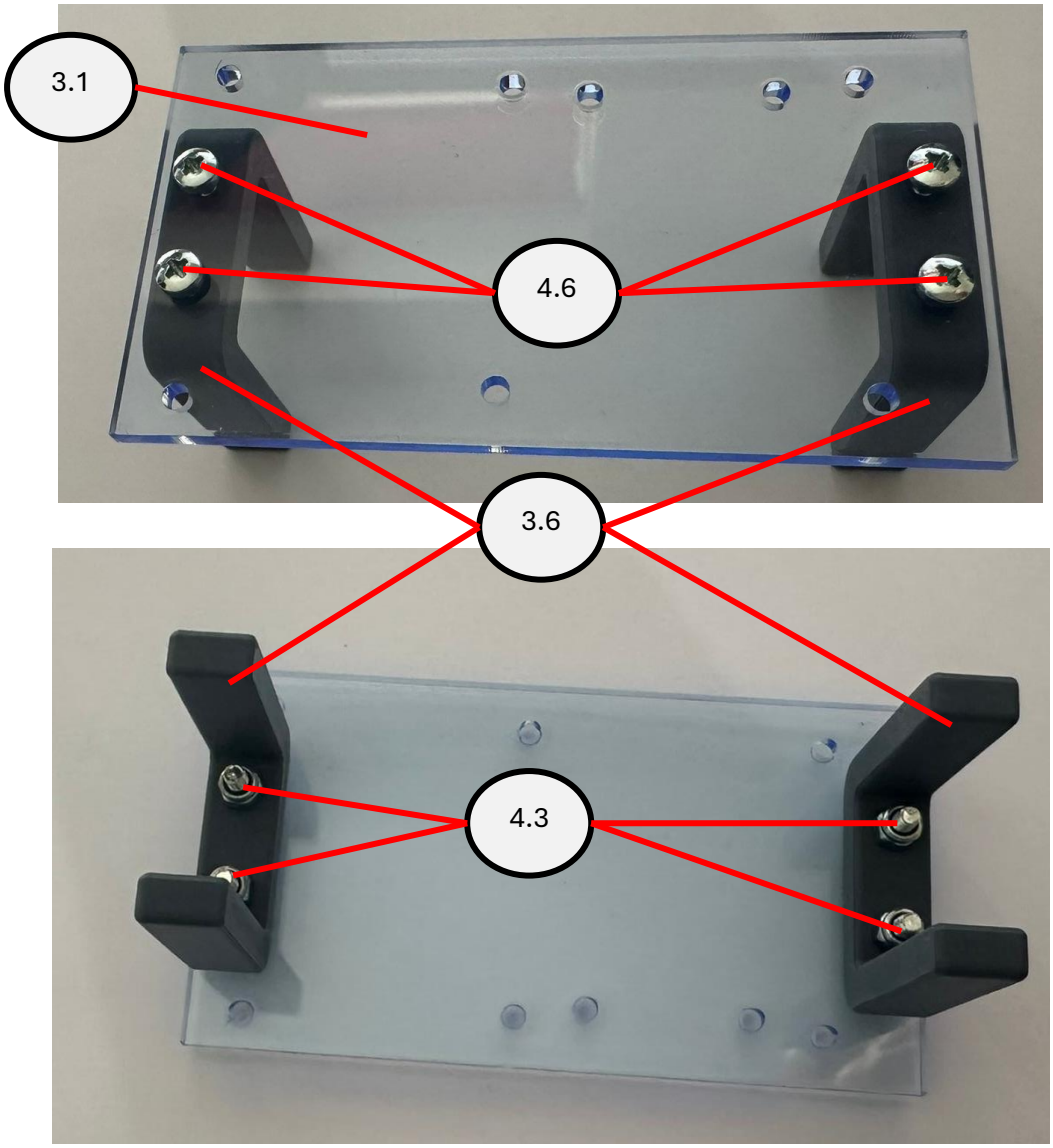
Base 1

Required components:

- **(3.1)** Base 1 (acrylic), 98 x 54 x 3mm
- **(3.6)** 2 x Leg (PLA)
- **(4.6)** 4 x Bolt,16mm, M3
- **(4.3)** 4 x Nylon locking nut, M3

Assembly Instructions:

Use a Philips screwdriver **(5.1)** and a Hexagon nut driver **(5.3)** for assembly.



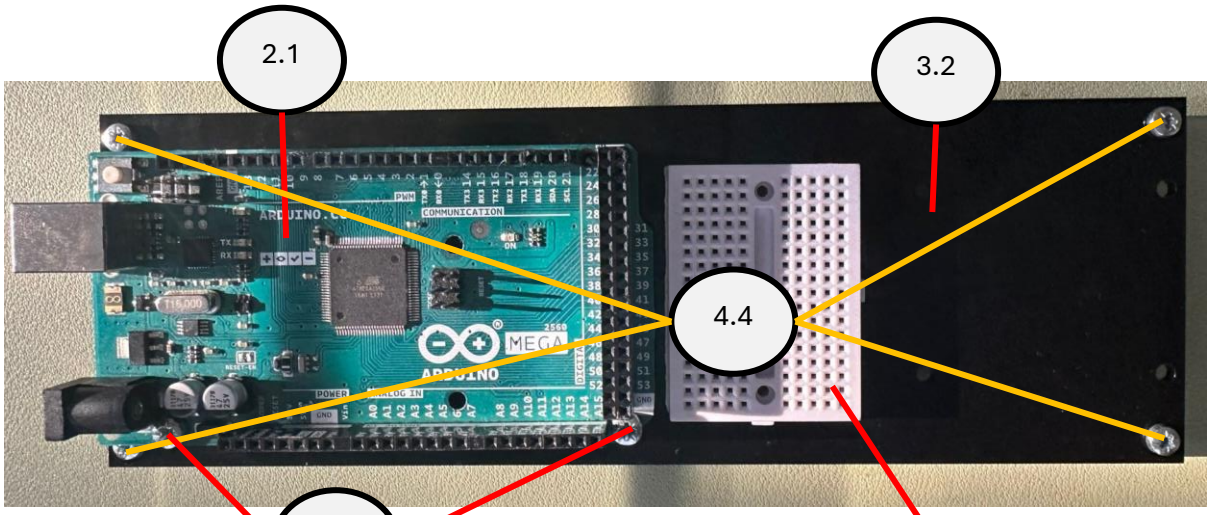
Base 2

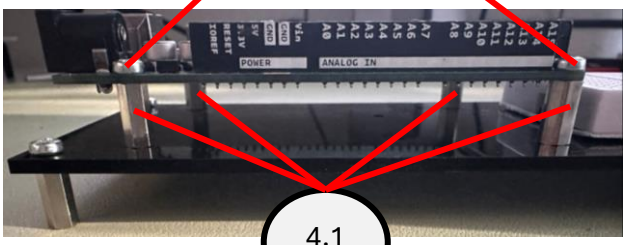
Required components:

- **(3.2)** Base 2 (acrylic), 209 x 70 x 3mm
- **(2.1)** Arduino Mega 2560
- **(2.4)** 170 tie-points mini breadboard
- **(4.1)** 8 x Hex threaded Spacer, 12mm, M3
- **(4.4)** 10 x Bolt, 6mm, M3

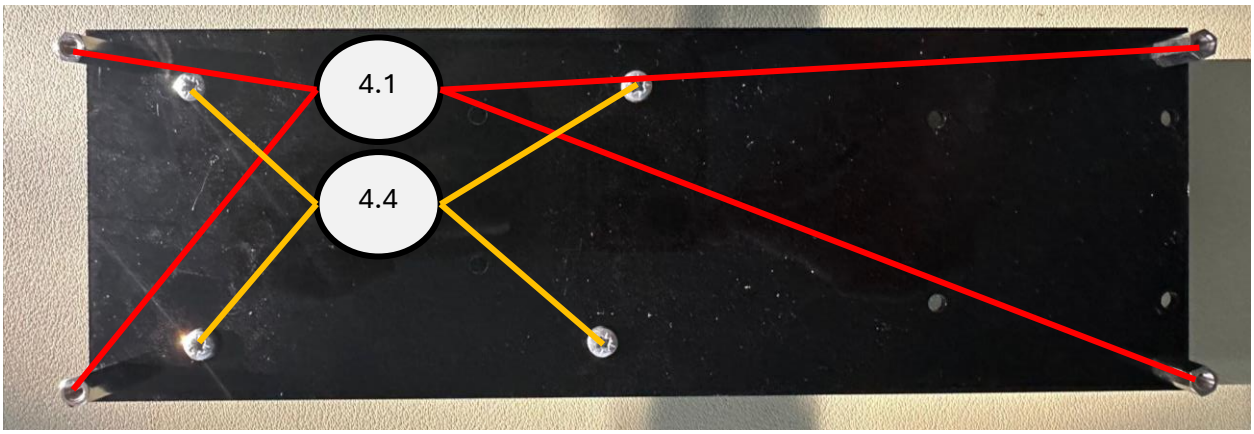
Assembly Instructions:

Use a Philips screwdriver **(5.1)** for assembly.





Remove the backing from the breadboard and then affix it to the location indicated here.



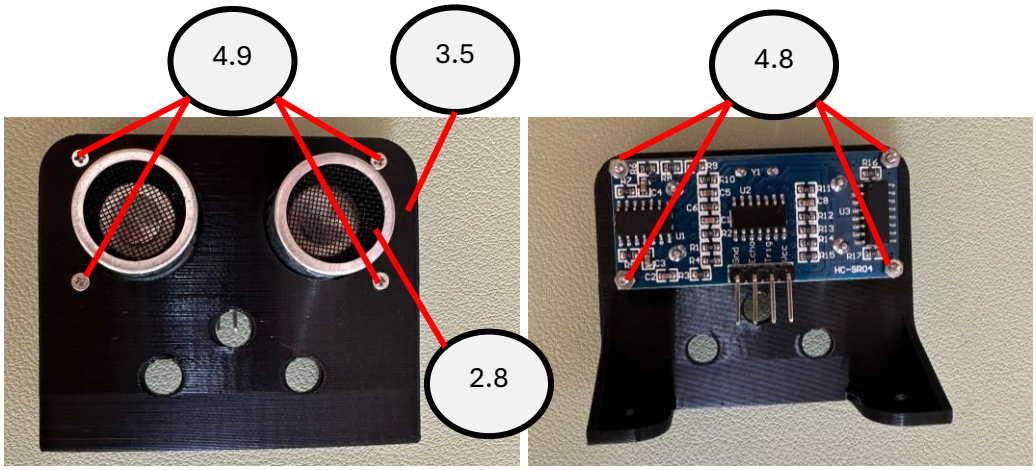
Ultrasonic sensor and LEDs mount (PLA)

Required components:

- **(2.8)** HC-SR04 ultrasonic sensor
- **(3.5)** Ultrasonic sensor and LEDs mount (PLA)
- **(4.8)** 4 x Nuts, M1.4
- **(4.9)** 4 x Bolt, 10mm, M1.4

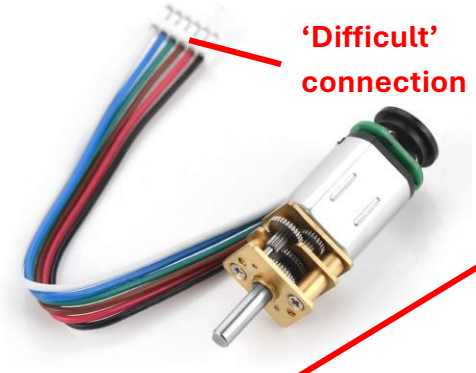
Assembly Instructions:

Use a Philips screwdriver **(5.1)** for assembly.

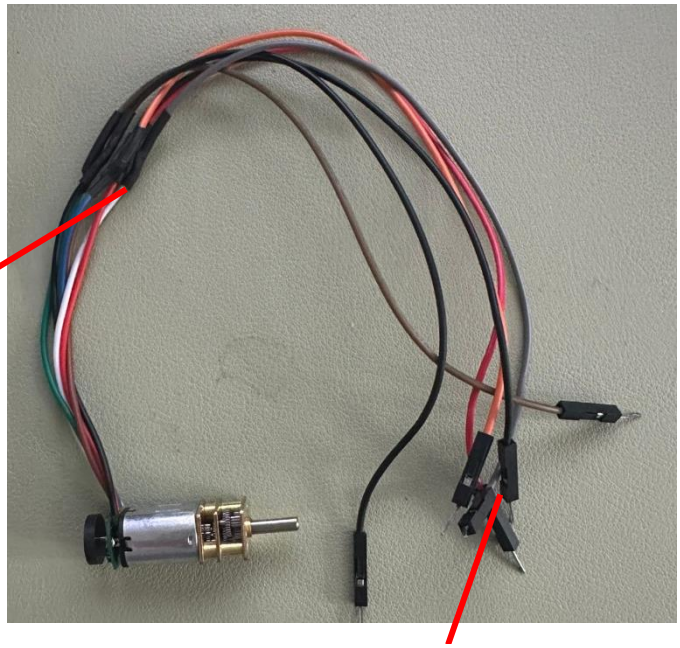


Modifications

The brushed geared DC motor with encoder **(2.5)** has undergone the following modifications for enhanced usability. These changes will facilitate the easy connection of the DC motor wires to the microcontroller pins:



Heat shrink tubing **(6.4)** has been used to insulate two soldered wires **(6.2 and 6.3)** together. Wire cutters **(6.1)** will also be required for this task.



Breadboard wires with a male connection.

You may wish to apply the same procedure to the brushless DC motor cooling fan **(2.7),** as illustrated below:

'Difficult' connection

For the brushed geared DC motor with encoder **(2.5)**, it is advisable to reinforce the area where the wires connect to the board. This can be achieved by using superglue or electrical installation tape to secure all six wires together, thereby strengthening the connections.