
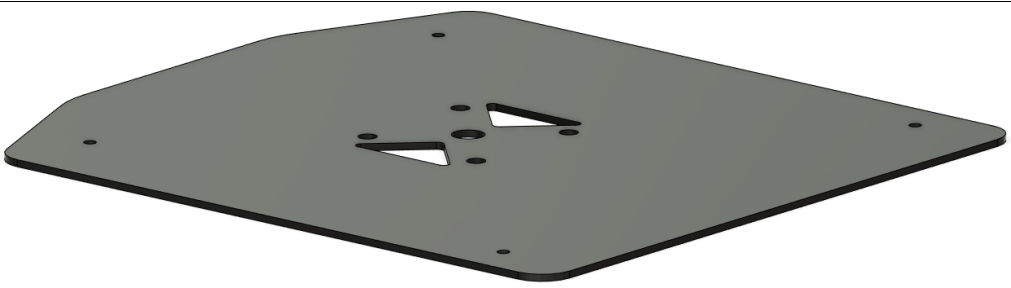
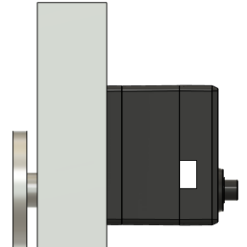


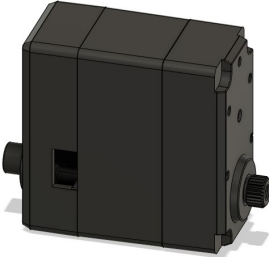
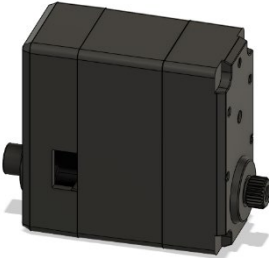



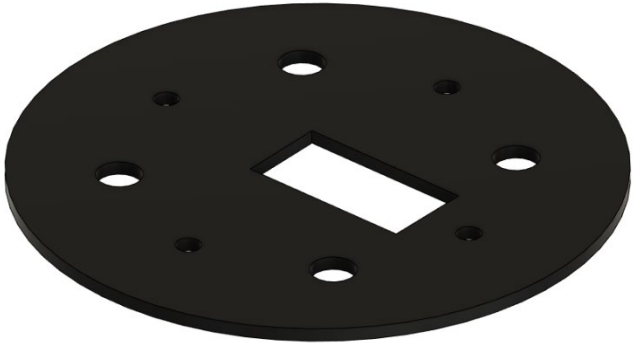

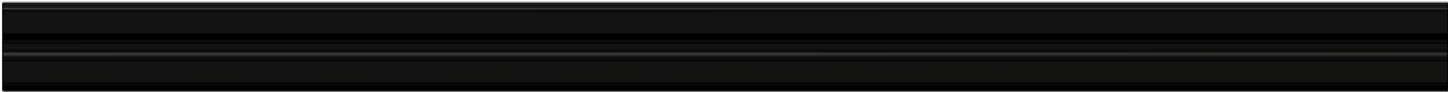
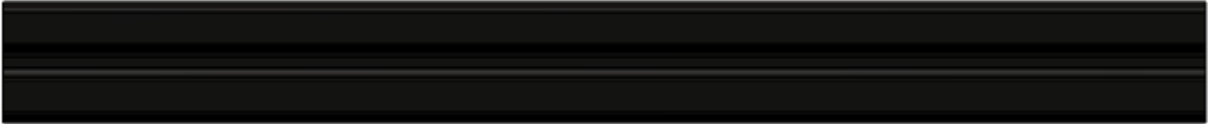
Merlin 2.2

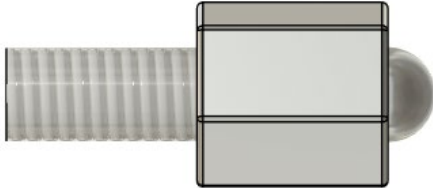


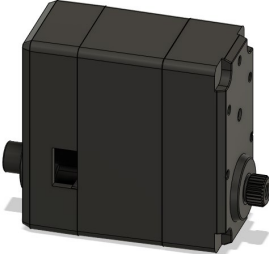
Assembly Instructions

Parts





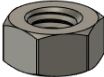
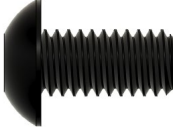
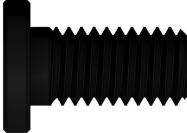
Component	Quantity	
X Frame Section	2	
Base Plate	1	
Motor Assembly	4	
Omni-Wheel	4	

Turn Table (TT)	1		
 LDX-227 (J0) Shaved Side	1		
 LDX-218 (J1+2)	2	 	
Spacers	4		

TT Plate A	1		
TT Plate B	1		
Arm Long	1		
Arm Short	1		

Arm Support	1	
Arm Joint Mount A B	1	
 LDX-227(J1)	1	

Fasteners

Component	Quantity	
M5 x 8mm Hex Socket button bolt	14	
M5 x20mm Hex Socket button bolt	6	
M5 T-Nut	14	
M5 x 50mm Hex Bolts	4	
M5 x Hex Nut	6	
M4 x 8mm Hex Socket button bolt	16	
M5 x 10mm Hex Socket button bolt (Low Profile)	4	

Corner Bracket Black	2		
Corner Bracket Grey	5		
Metal Servo Hub	1		
Servo Hub (Toothed)	1		
Servo Hub (Non-Toothed)	1		
M3 x 6mm (CS)	4		
Servo Hub Screw	8		
Servo Hub Join Screw M3 x 6mm	2		
M2 x 6mm	2		
M2 Nut	2		

Tool

Component	Quantity	
Hex Key 3mm	1	
Spanner 6 x 7	1	

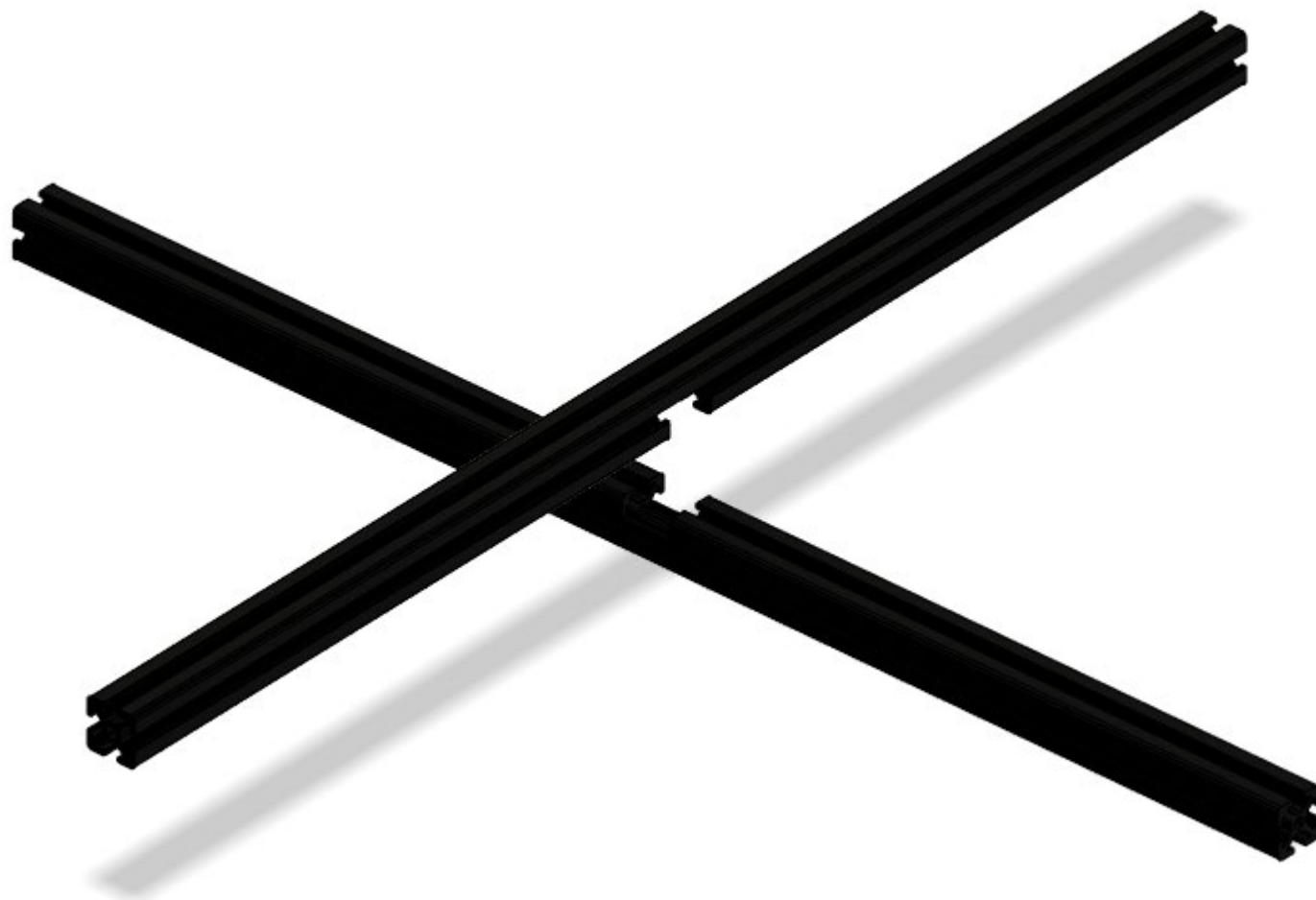
Method

Note: Corner Brackets will be secured using T-Nuts and a button hex socket bolt. Some must be slid from an open end. The ones provided can be simply pushed in the slots when needed (sideways) and then can be tightened.



T-Nut and a Screw

Position the X Frame components together with the slots facing each other as shown in the figure below.

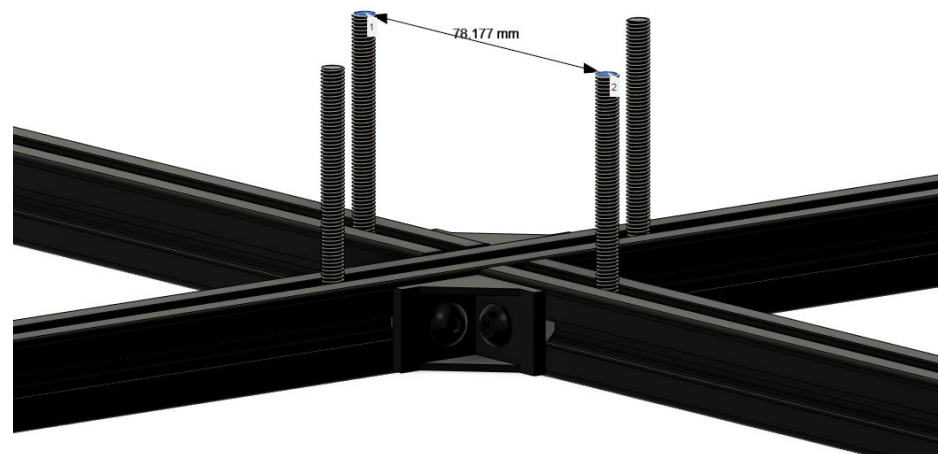


Slide in the T-Nuts and secure the two X-frame components together in place using black Corner Brackets as shown in the figure below.

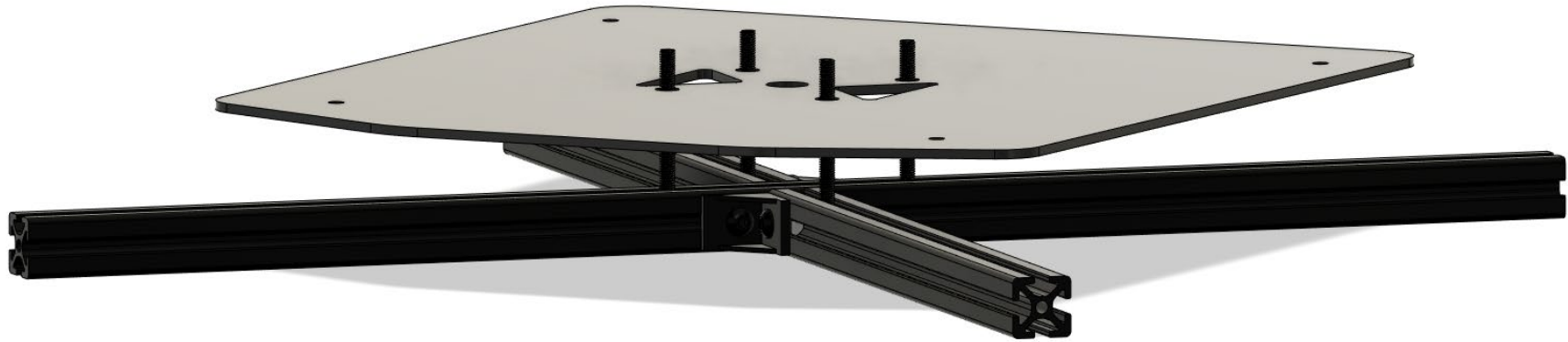
This will require 2x M5 x 8mm hex socket button bolts and 2x M5xT-Nuts going into each of the Corner brackets



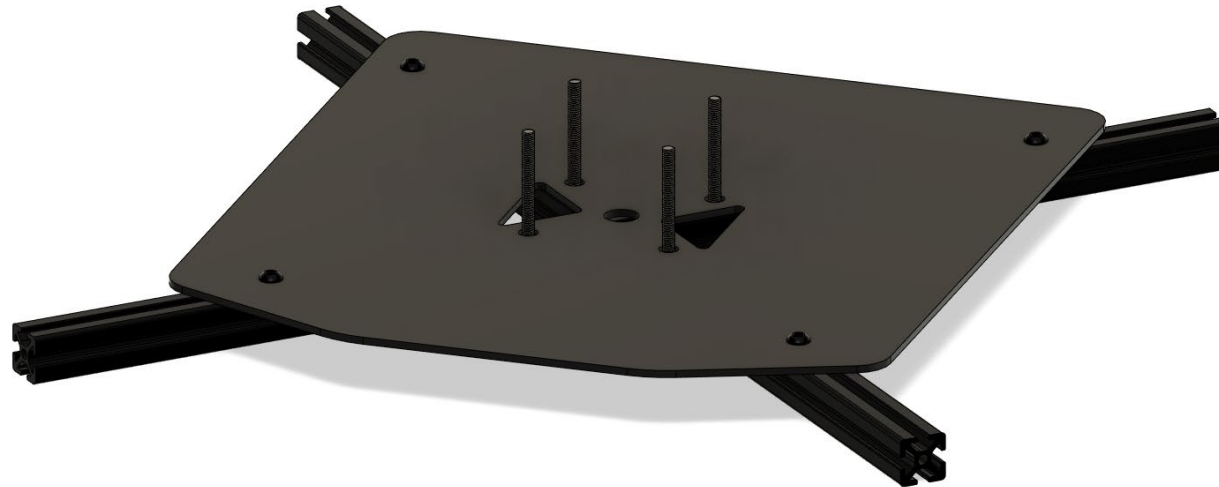
Slide M5 x 50mm hex bolts down each of the ends. They should be about 78mm from the one opposite.



Place the Base plate onto the X-Frame over the bolts allowing them to slide into their natural position. Ensure the triangle holes are not over the corner brackets by making sure the two triangular gaps are orthogonal to the corner brackets.



Insert 1 M5 T-Nut into each edge of the frames and align with the corner holes of the Base Plate, then secure using M5 x 8mm hex socket button bolts.





Place a Spacer over each of the M5 x 50mm hex Bolts as shown in the figure below.

Place servo LDX-227 (J0) in the slot as shown in the figure below. Note that the metal toothed shaft should face up while the shaved plastic non-toothed shaft should go into the slot. Ensure Servo main body is towards the back of the Base plate (to the left or the right).



TT Plate A, Turn Table (bottom section) and the M5 Nuts should be placed in the order shown on top of the M5 x 50mm hex bolts.



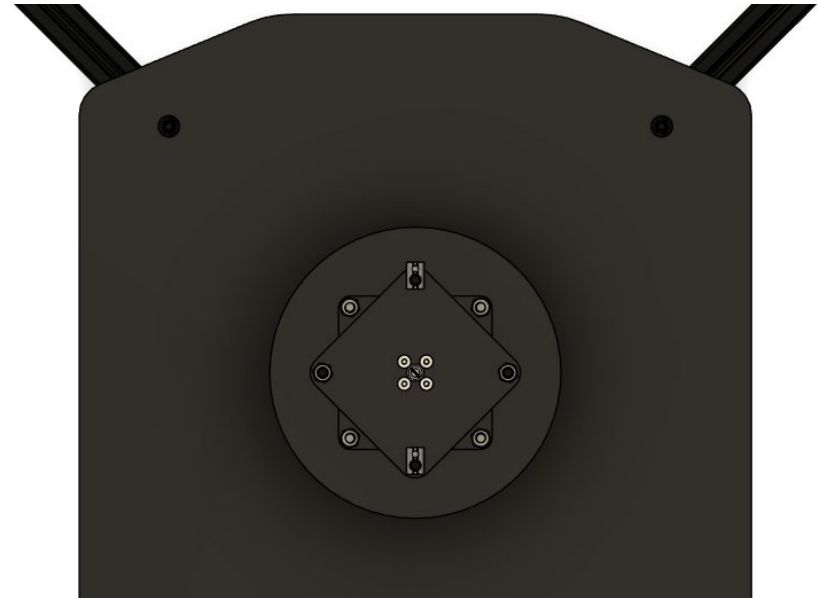
Screw TT Plate B to the top of the Metal Servo Hub using the **M3 x 6 Countersunk**.
Screws go through the counter bored side.

Before next Step Ensure that Servo Joint 0 is set to 0 Degrees using Unit 5!

Place the TT Plate B assembly onto Turn Table (top) ensuring the Metal Servo Hub fits on the servo and that 1 corner faces the front of the rover.


Use M5 Low Profile x 10mm and M5 Nuts on the side holes.

Use the Servo Hub Join Screw to secure the assembly to the servo.



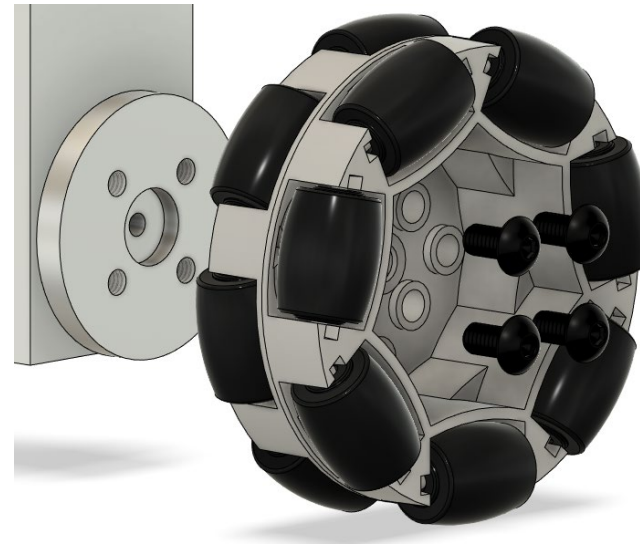
Slide Arm Long into the M5 T Nuts. Once in position tighten the M5 Low Profile x 10mm. Note at least 1 end is threaded and will need to furthest away from the main body.



Slide M4 T Nut along Arm Long with the Arm Support loosely fitted until it reaches the shown position. 

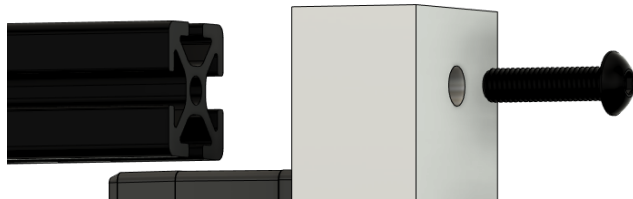


Secure Omni-wheel to the Assembly Hub with m M4 x 8mm bolts



Use an M5 x 20mm bolt to add each Motor Assembly to each end of the X Frame. They are labelled 1 to 4 and have set positions.

If a number is missing, you can set it in the code.

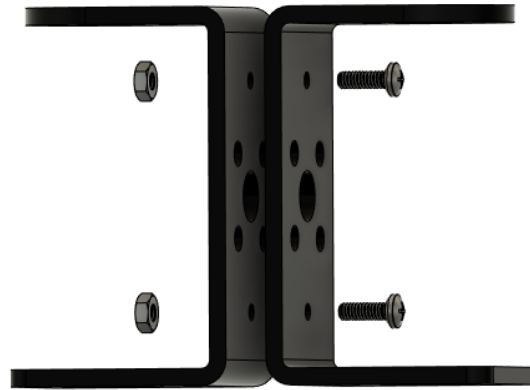


- 1: front left
- 2: front right
- 3: rear left
- 4: rear right

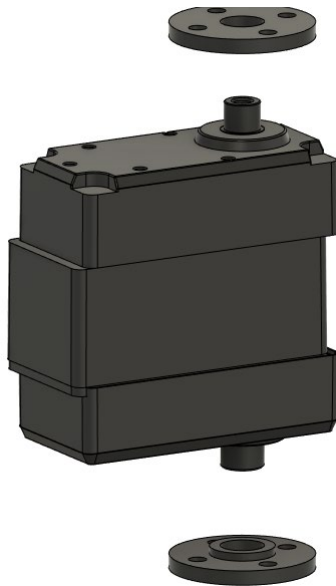
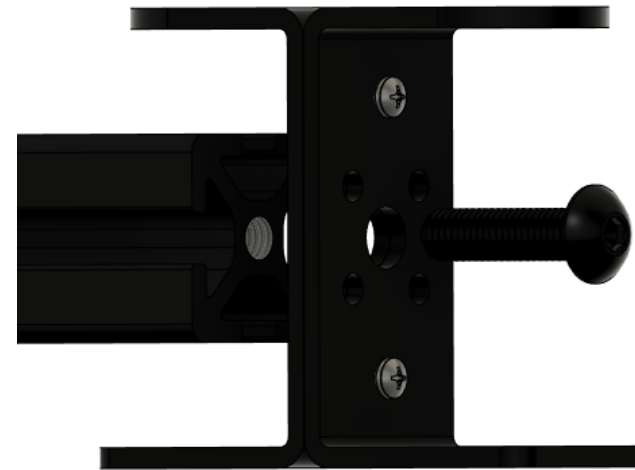


Arm Join Assembly

Take Arm Mount Joint B and connect 2 together using M2 x6mm and M3 Nut (x2)



Use a M5 x 20mm bolt to secure to the tapped end of the Long Arm.



Add Servo Hub (Toothed) and Servo Hub (Non-Toothed) to both LDX-218 motors.

Use the M3 x 6mm and Servo Hub Screws to secure both motos to the Double Angled Bracket.



Repeat these steps for the short arm.

Take Arm Mount Joint B and connect 2 together using M2 x6mm and M3 Nut (x2)



Use a M5 x 20mm bolt to secure to the tapped end of the Long Arm.



Use servo mount screws to attach the 2 arms together via the Double Angled Bracket Assembly.

