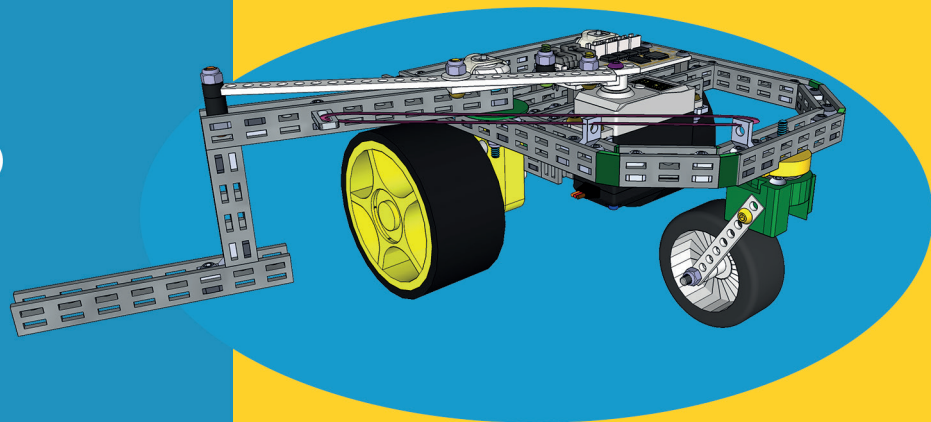




# HOCKEY BOT

Assembly guide

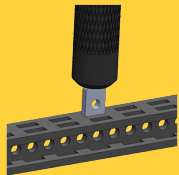
## DIY APP CONTROLLED Football Car



v.1.5

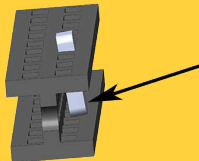
# STARTING TIPS

## Inserting nuts (1)



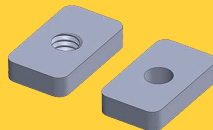
It is a good idea to start every step inserting nuts into beams (if the step requires). Use the back of the screwdriver to push in the nuts.

## Inserting nuts (2)



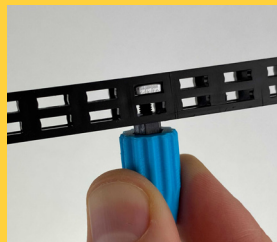
After entering the first slot, nuts tend to tilt. Use your thumb to push it back straight, and then again use the screwdriver to insert the nut all the way in.

## Faulty threads



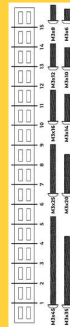
Some of the nuts are missing threads. This is a manufacturing issue and we are working on it. In the mean time, we add few extra nuts. We apologize for the inconvenience.

## Tightening standoffs



Use the Totem Wrench Socket (Blue) to insert Nylon Standoffs used to assemble the electronics boards.

## Ruler



Use Beam/Bolt ruler to determine the length of beams and bolts.

For more tips, please visit the link below:

<https://totemmaker.net/blog/totem-mechanics-for-beginners/>

## BEFORE YOU START BUILDING:



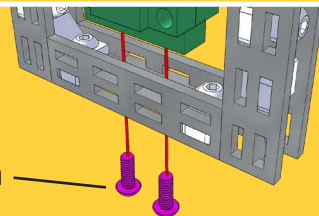
Standard Totem Bolts M3

Bolt colours codes:

We have put some colours on bolts to make instructions more clear.

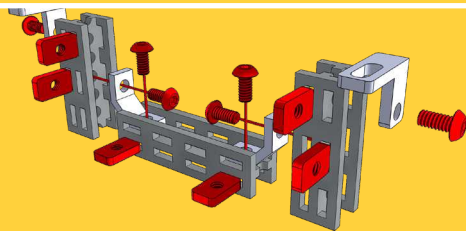


NOTE: 2x 8mm



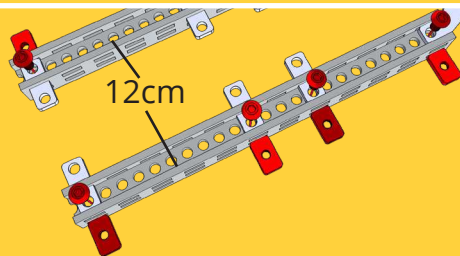
Notes for bolts other than 6mm:

When bolts that are not 6mm will be used, in addition to colours, extra notes are given in the instructions with lengths in mm.



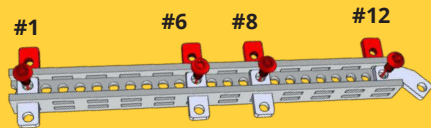
6mm bolts and 6x10mm nuts:

When starting on a building step, the 6mm bolts and 6x10 nuts are coloured **RED**. It makes it easier to see where the new bolts and nuts are placed.



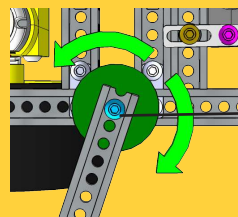
I-beams lengths.

When a new Totem beam is needed in a step, the length is indicated.



Positions for nuts with #-symbol.

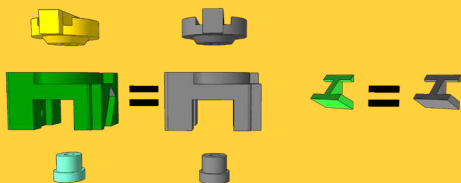
When it is helpful, the slot-number is indicated in the Totem beam. Starting from #1 and counting slots.



Don't tighten link too much.

Green Rotating Arrows = rotating action.

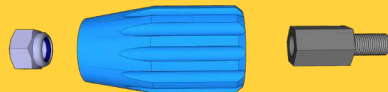
When a connection is a rotating hub, you must not tighten the bolt and nut too much. Test it for a smooth rotation, but not too wobbly either.



The colour of parts.

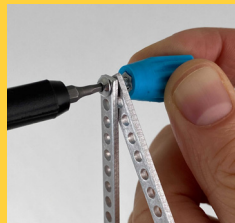
The colours of plastic part may vary. Colours are often changed on parts to make it easier to see them in the instructions pictures.

Totem Wrench Socket









































Helpful little tool:

Included in the kit is a small hex-socket used for fastening Lock Nuts and Nylon Towers. The pointy end is for Lock Nuts.

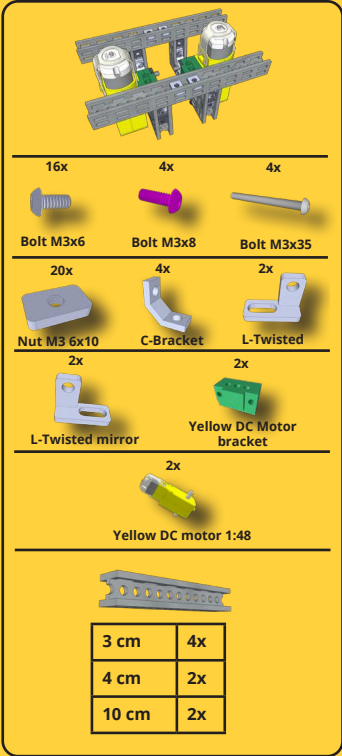




# PARTS NEEDED:

51x  Bolt M3x6	6x  Bolt M3x8	4x  Bolt M3x10	1x  Bolt M3x12	1x  Bolt M3x20	1x  Bolt M3x25	4x  Bolt M3x35	62x  Nut M3 6x10															
5x  Lock Nut M3	8x  2-hole Simple	8x  C-Bracket	2x  L-Twisted	2x  L-Twisted mirror	4x  2-hole 45 simple	3x  2-hole bracket	1x  Metal washer M3 9x0.8mm															
6x  Nylon Spacer 4mm	1x  Nylon Spacer 8mm	4x  Nylon Standoff M3x8mm	1x  Washer 1mm DIA24mm	4x  Single side filler	2x  Yellow Wheel D 67mm	2x  Yellow DC Motor bracket	2x  Yellow DC motor 1:48															
2x  Rubber Band	1x  Li-Ion 3.7v Battery	1x  USB Battery Charger	1x  X3 Controller Board	5-7x  ZIP Tie	1x  Caster Wheel Kit	1x  5.5mm Totem Wrench	1x  Totem Screw Driver															
1x  Totem Wrench Socket	1x  Servo arm Index Disc set	1x  Allen hex key	<table border="1"> <tbody> <tr> <td>6.5cm/13H</td> <td>1x</td> </tr> <tr> <td>12cm/24H</td> <td>1x</td> </tr> </tbody> </table>		6.5cm/13H	1x	12cm/24H	1x	<table border="1"> <tbody> <tr> <td>3 cm</td> <td>6x</td> </tr> <tr> <td>4 cm</td> <td>3x</td> </tr> <tr> <td>6 cm</td> <td>1x</td> </tr> <tr> <td>8 cm</td> <td>2x</td> </tr> <tr> <td>10 cm</td> <td>4x</td> </tr> <tr> <td>12 cm</td> <td>2x</td> </tr> </tbody> </table>		3 cm	6x	4 cm	3x	6 cm	1x	8 cm	2x	10 cm	4x	12 cm	2x
6.5cm/13H	1x																					
12cm/24H	1x																					
3 cm	6x																					
4 cm	3x																					
6 cm	1x																					
8 cm	2x																					
10 cm	4x																					
12 cm	2x																					
1x  Mini Servo Motor	1x  Arm for Mini Servo Motor	1x  Bolt M2.5x8 For servo arm	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <b>Explanation:</b>  <b>13H = 13 holes</b> </div>																			

# PART 1



16x Bolt M3x6

4x Bolt M3x8

4x Bolt M3x35

20x Nut M3 6x10

4x C-Bracket

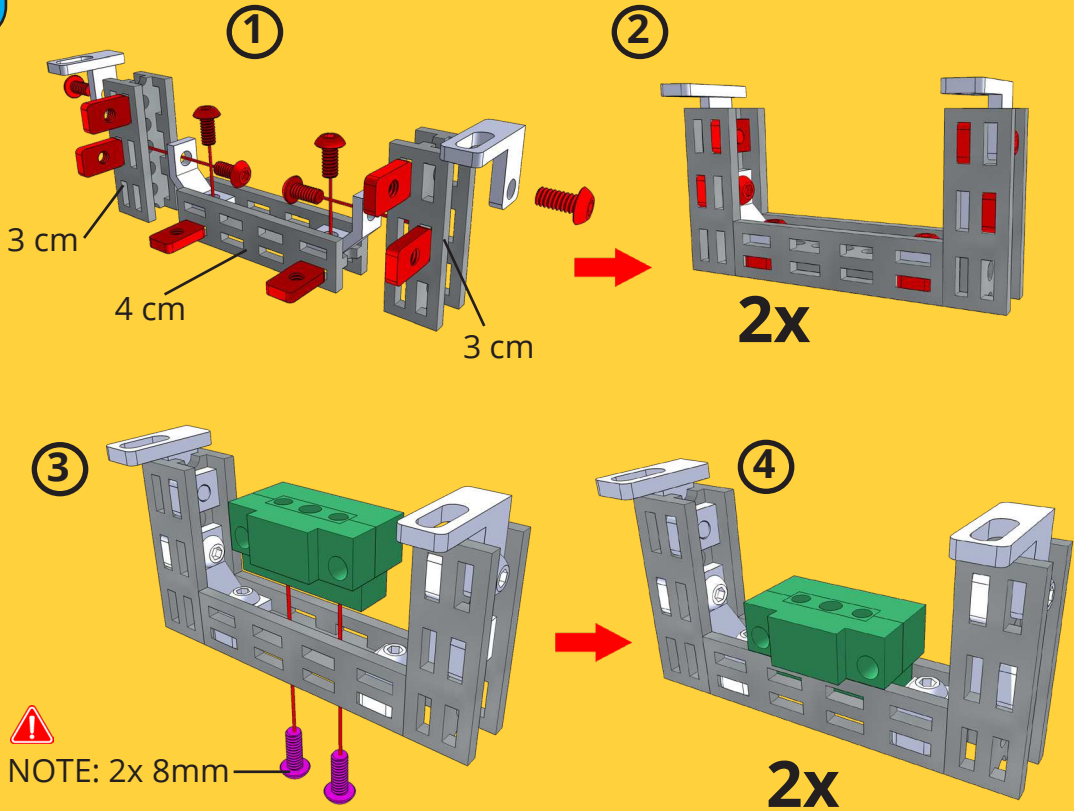
2x L-Twisted



2x L-Twisted mirror

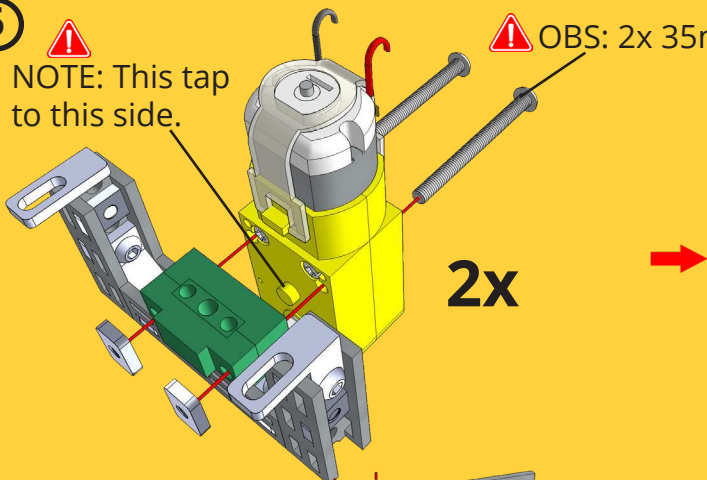
2x Yellow DC Motor bracket

2x Yellow DC motor 1:48

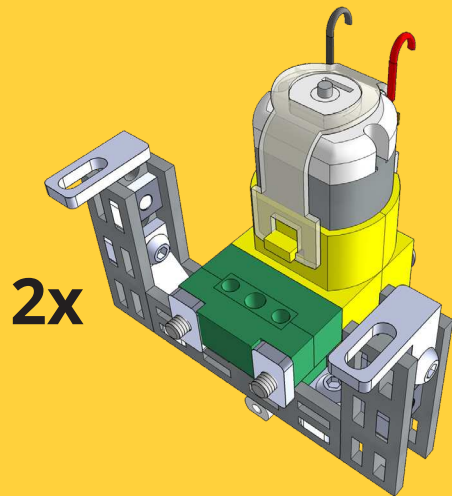
3 cm	4x
4 cm	2x
10 cm	2x



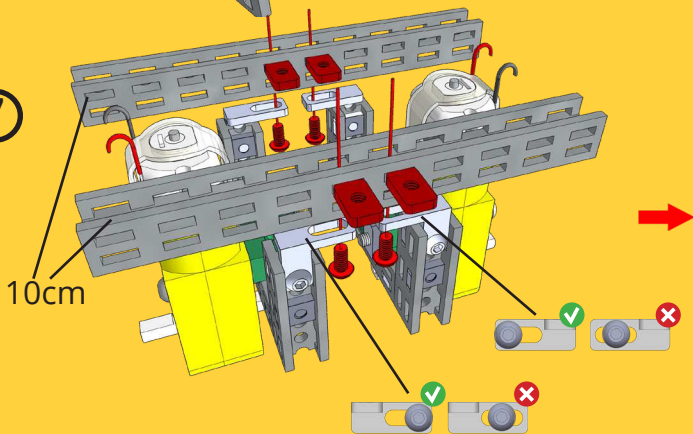
⑤  NOTE: This tap to this side.  OBS: 2x 35mm



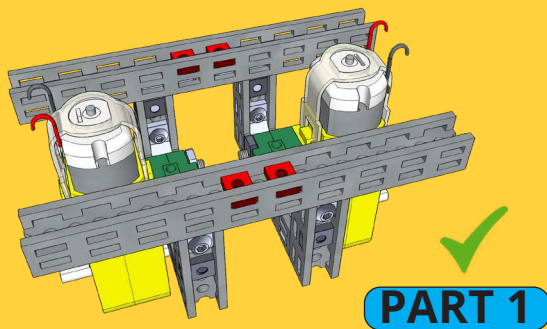
⑥



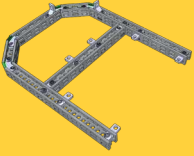
⑦



⑧



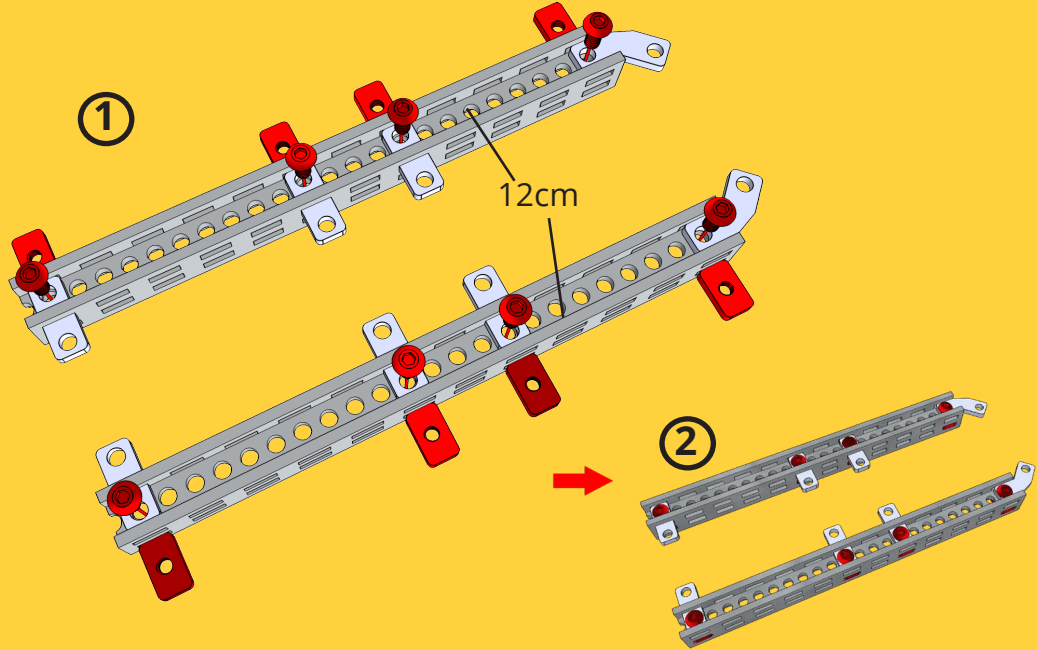
# PART 2

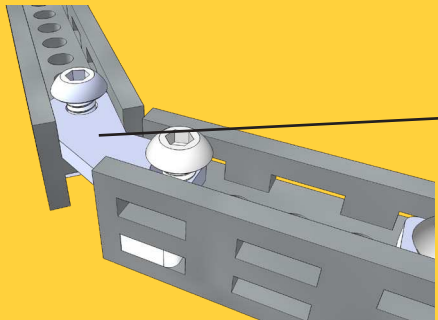
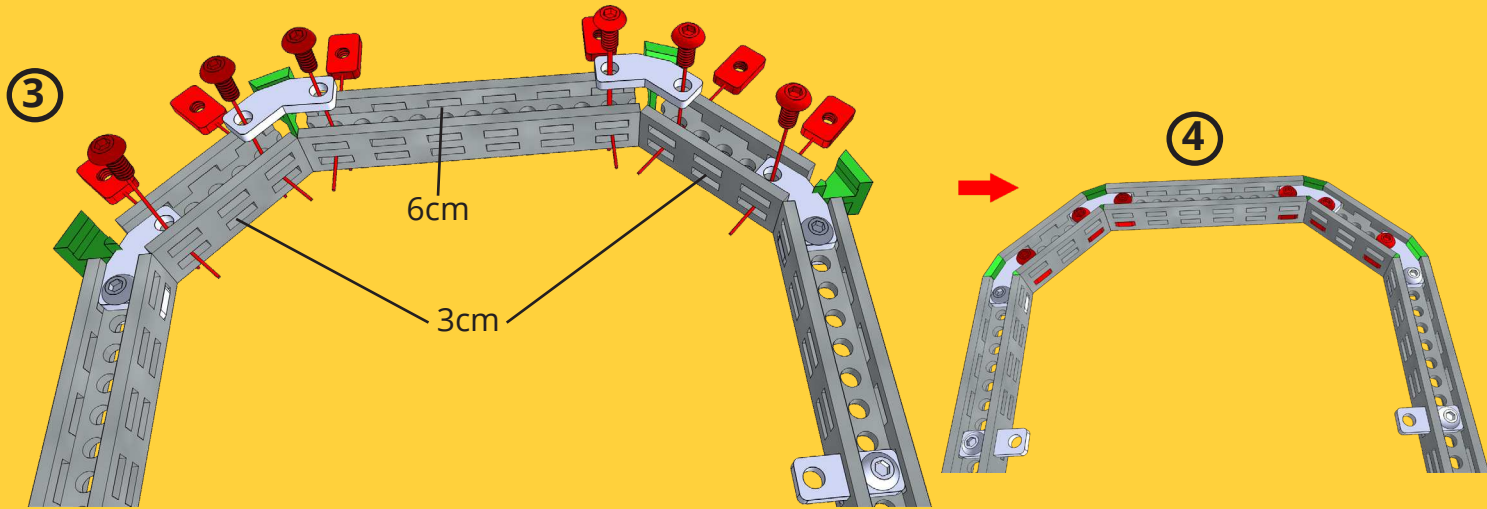


20x	20x	8x
Bolt M3x6	Nut M3 6x10	2-hole Simple
2x	4x	4x
C-Bracket	2-hole 45 simple	Single side filler



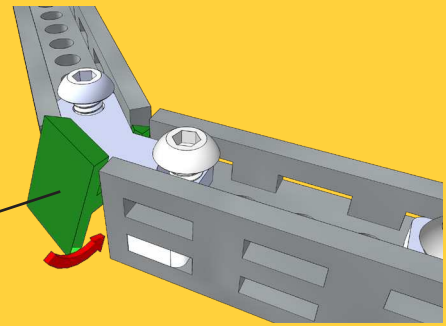
3 cm	2x
6 cm	1x
10 cm	1x
12 cm	2x

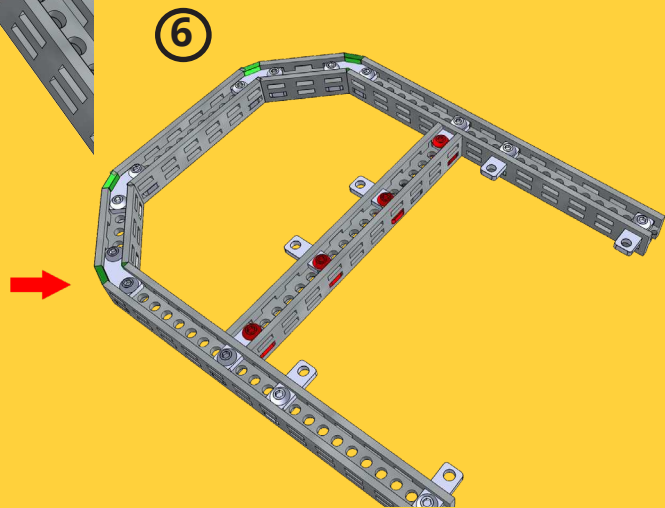
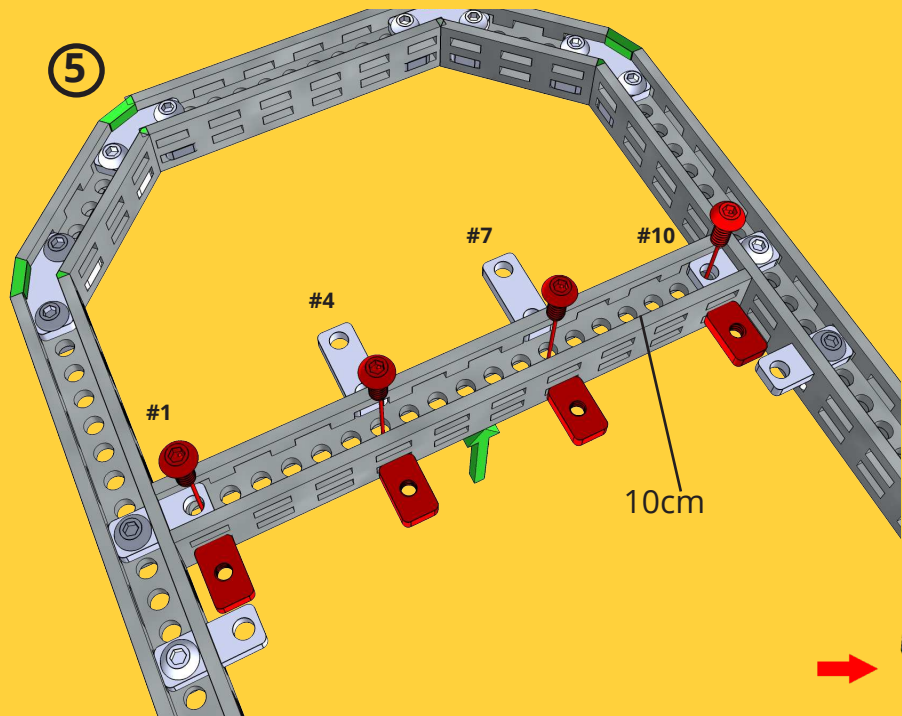


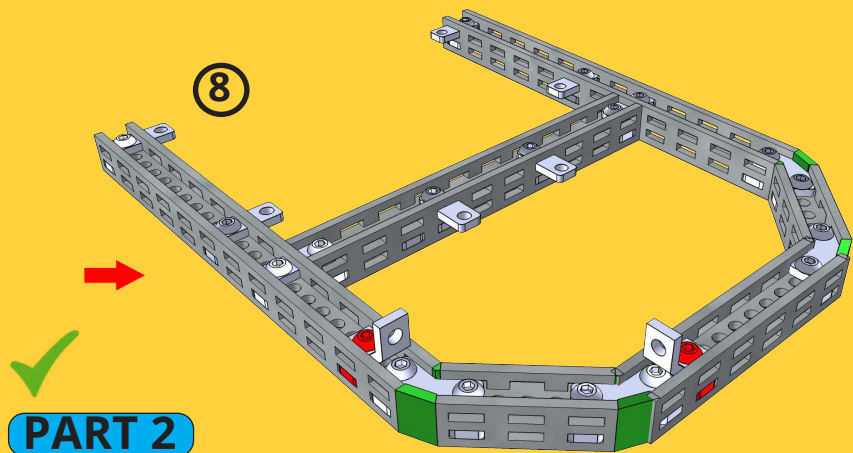
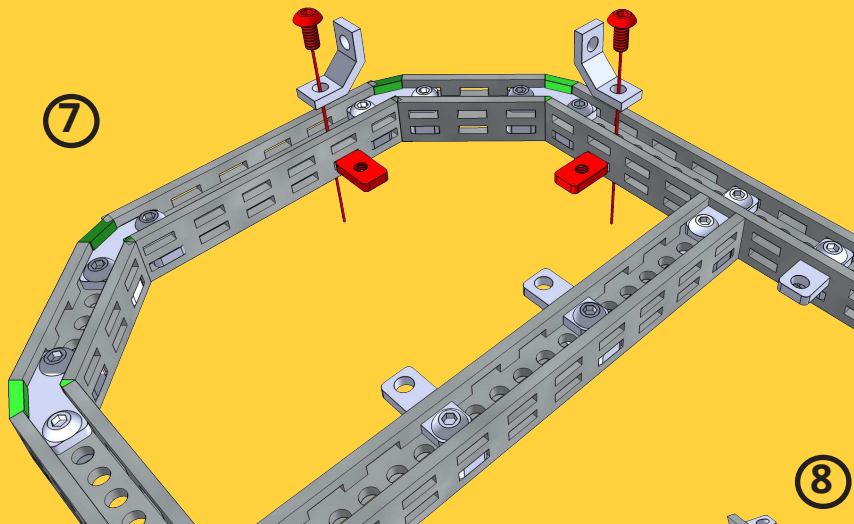


**TIP:**  
How to insert the 45 degree Filler part:

- 1: First assemble brackets with bolts.
- 2: Bolts are a bit loose.
- 3: Insert filler as shown.
- 4: Tighten bolts again.

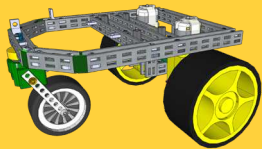








# PART 3



4x



Bolt M3x6

9x



Nut M3 6x10

4x



Nylon Standoff  
M3x8mm

2x



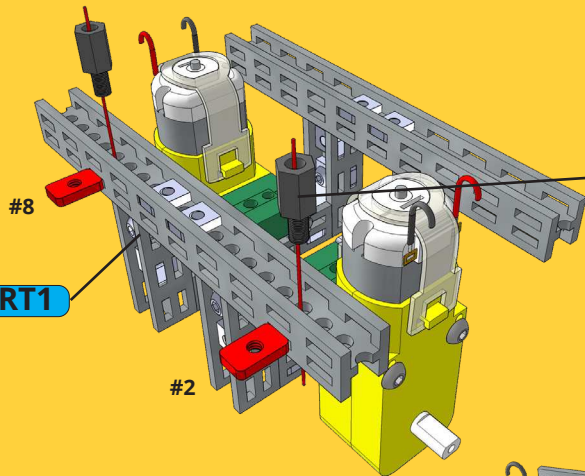
Yellow Wheel D 67mm

1x

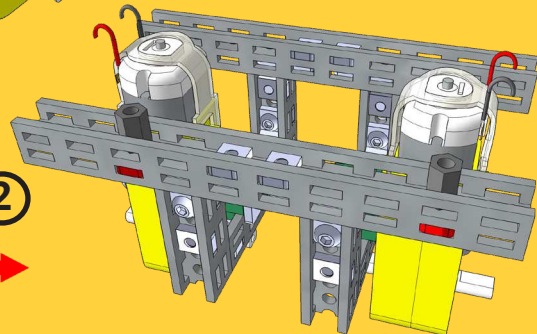


Caster Wheel Kit

①



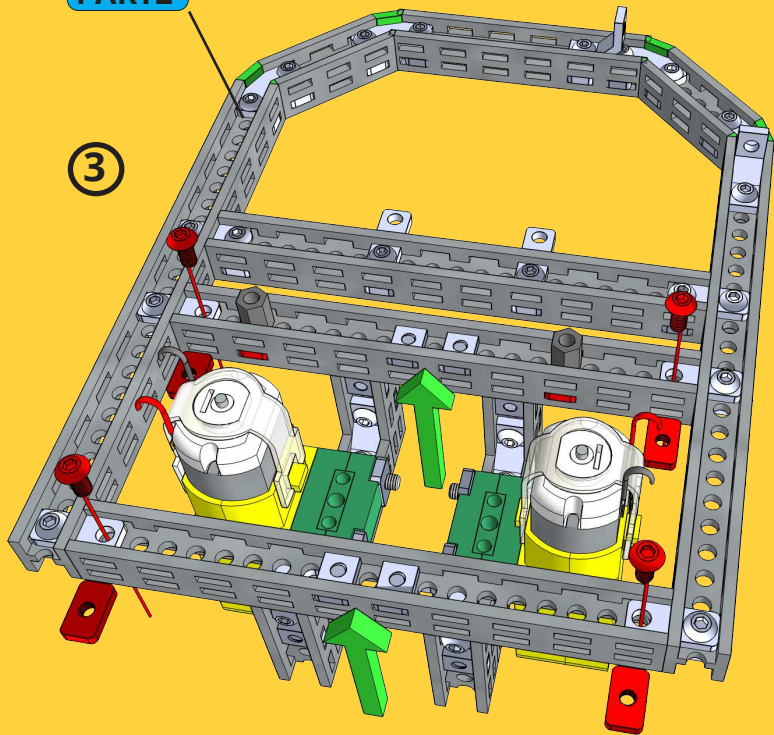
②



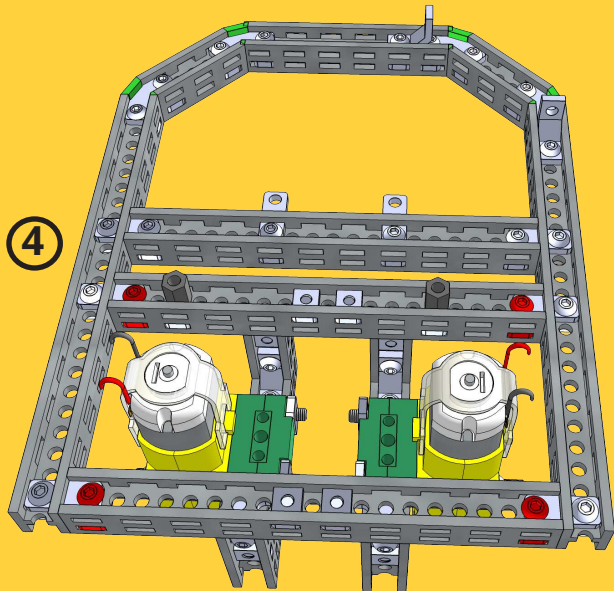


PART2

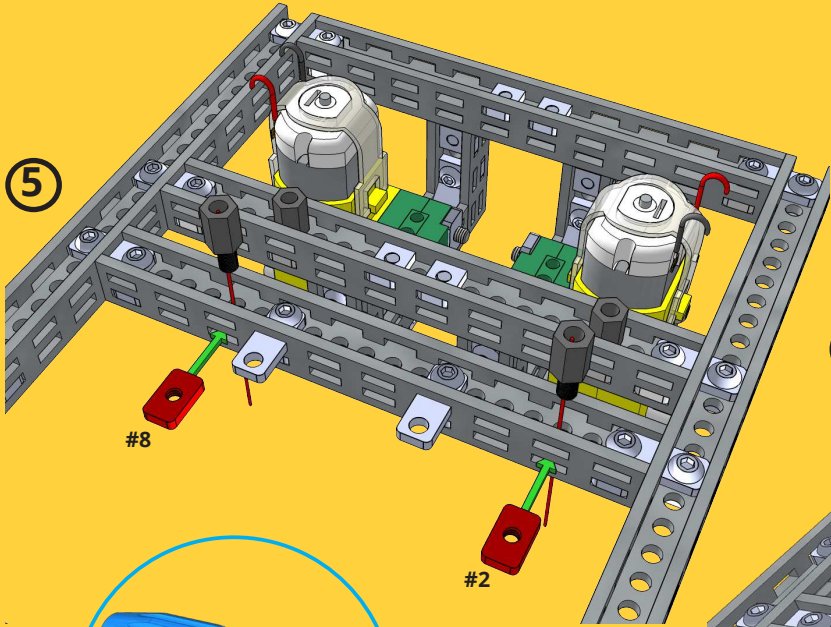
3



4

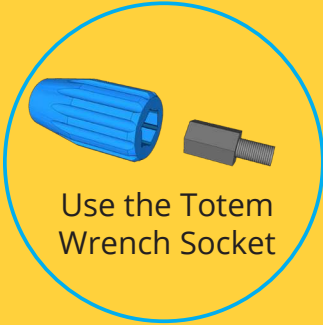


5



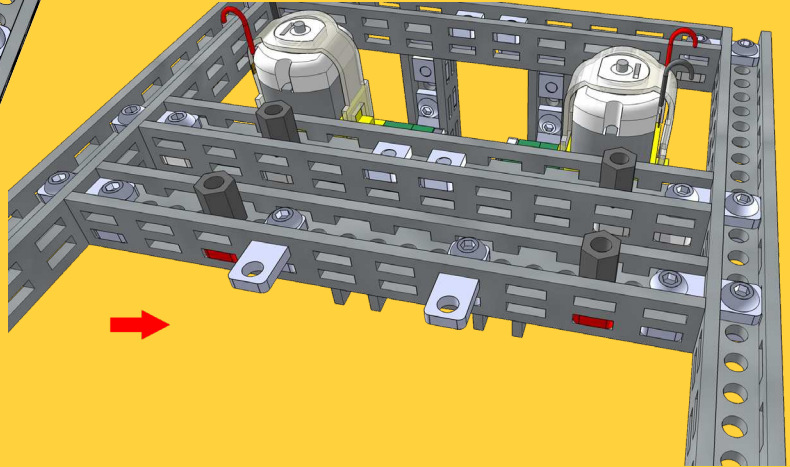
#8

#2



Use the Totem  
Wrench Socket

6



1x



Caster Wheel Kit

**Caster Wheel Kit:**  
Read in the Robotics Kit Booklet in page 30 and 31 about how to build a Caster Wheel set.  
The colour green and yellow in the instructions are for clarity only, the actual colour may be different.



Skip Step4,  
it is not  
needed.

You can skip putting a  
beam to the caster wheel  
set here.  
Just temporary put a  
6x10mm nut there to  
hold it together during  
building the caster set.

### Caster Wheel

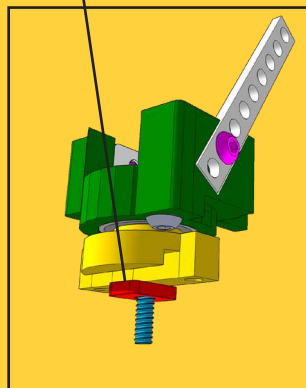
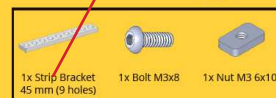
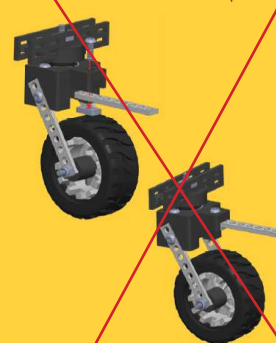
Caster Wheel Set Step 2



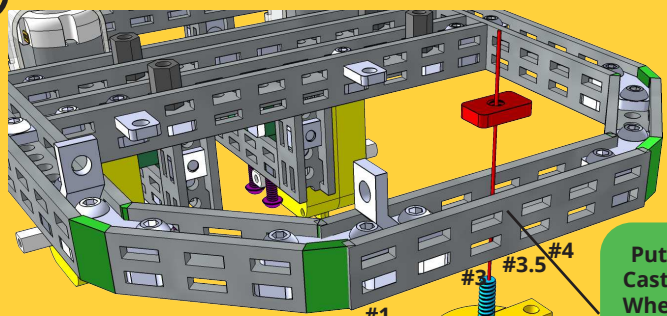
Caster Wheel Set Step 3



Caster Wheel Set Step 4

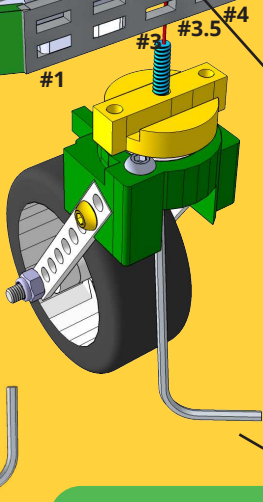


7

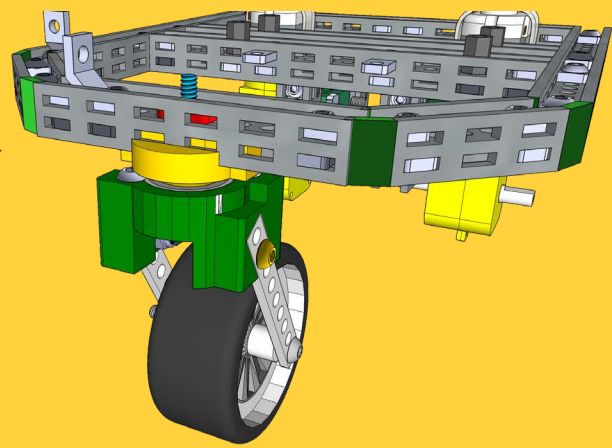


#3.5 means the hole between the #3 and #4 slot.

Put the Caster Wheel in the middle.

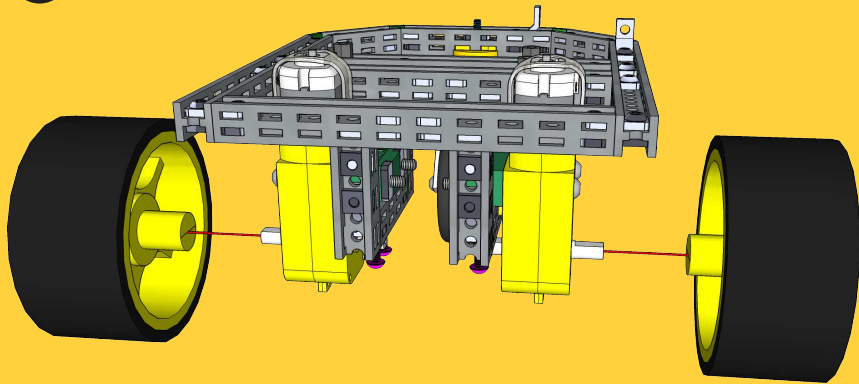


8

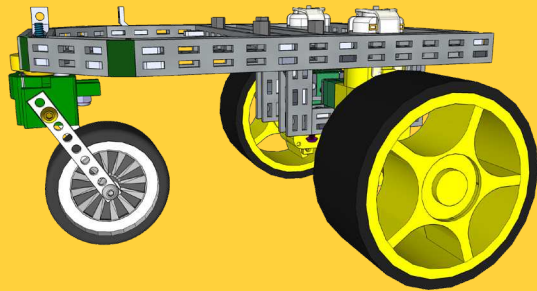


Use the included Allen key to easier tighten the bolt.

9



10



PART 3

# PART 4



2x	2x	4x
		
Bolt M3x6	Bolt M3x8	Bolt M3x10
1x	6x	3x
		
Bolt M3x12	Nut M3 6x10	Lock Nut M3
2x	1x	3x
		
2-hole bracket	Metal washer M3 9x0.8mm	Nylon Spacer 4mm
1x	1x	1x
		
Mini Servo Motor	Arm for Mini Servo Motor	Bolt M2.5x8 For servo arm

	
8 cm	6.5cm/13H
1x	1x
	12cm/24H
	1x

**1**

NOTE: 10mm

NOTE: 8mm

NOTE: 10mm

#7

#5.5

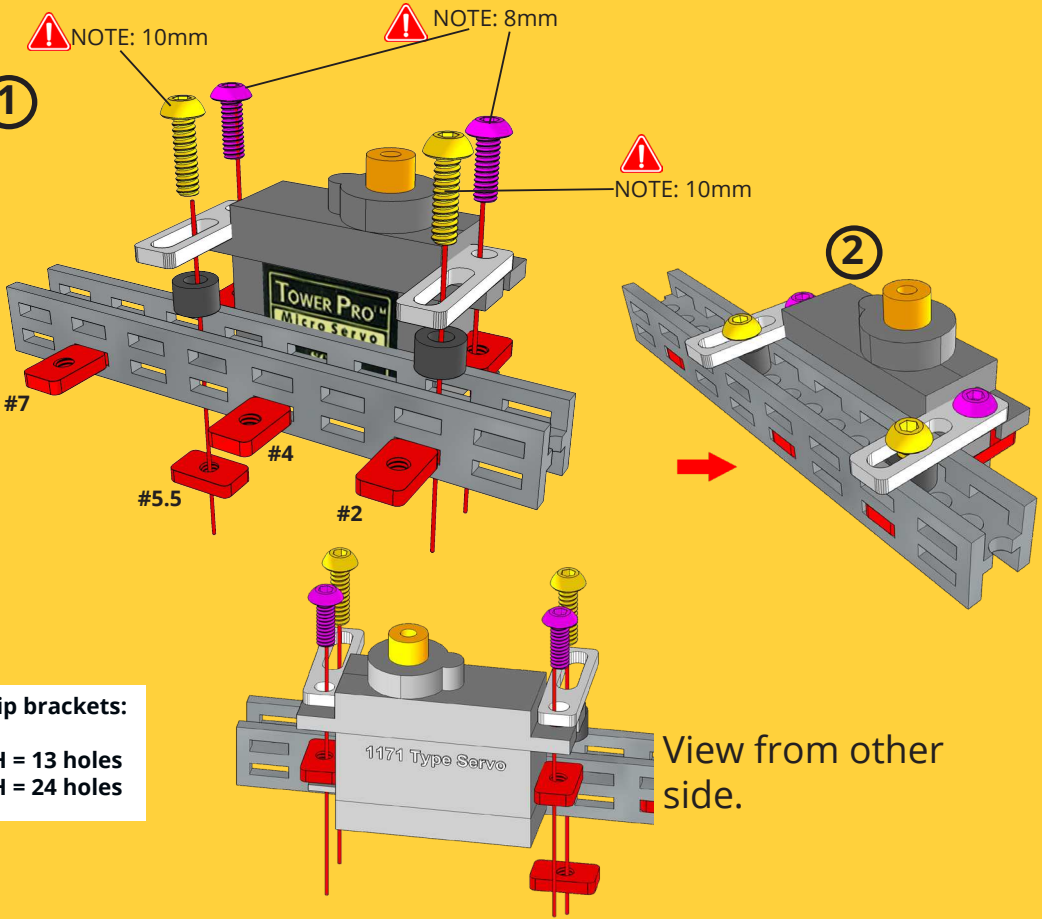
#4

#2

**2**

View from other side.

1171 Type Servo



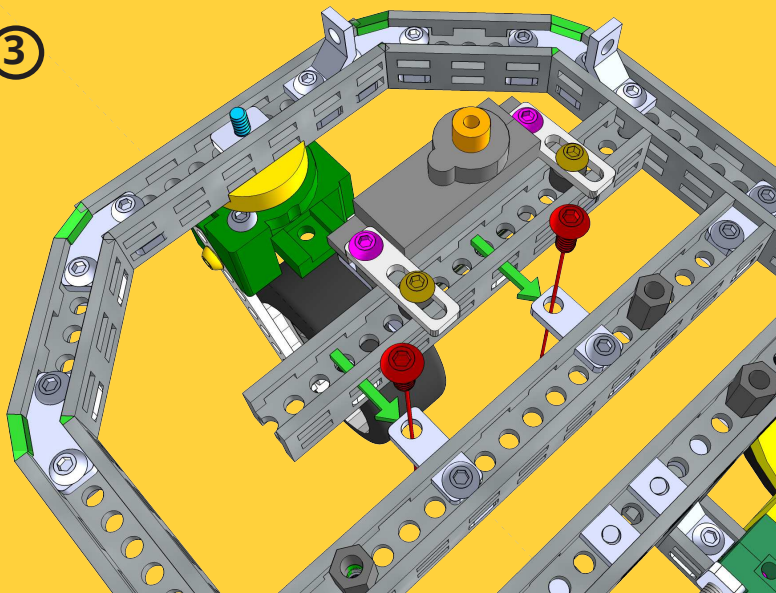
**Strip brackets:**

13H = 13 holes

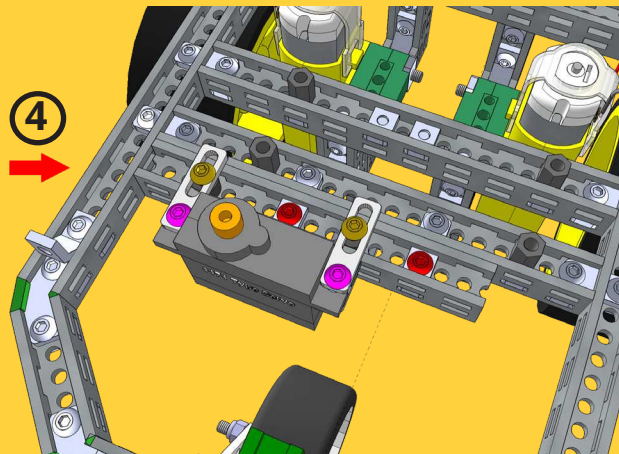
24H = 24 holes



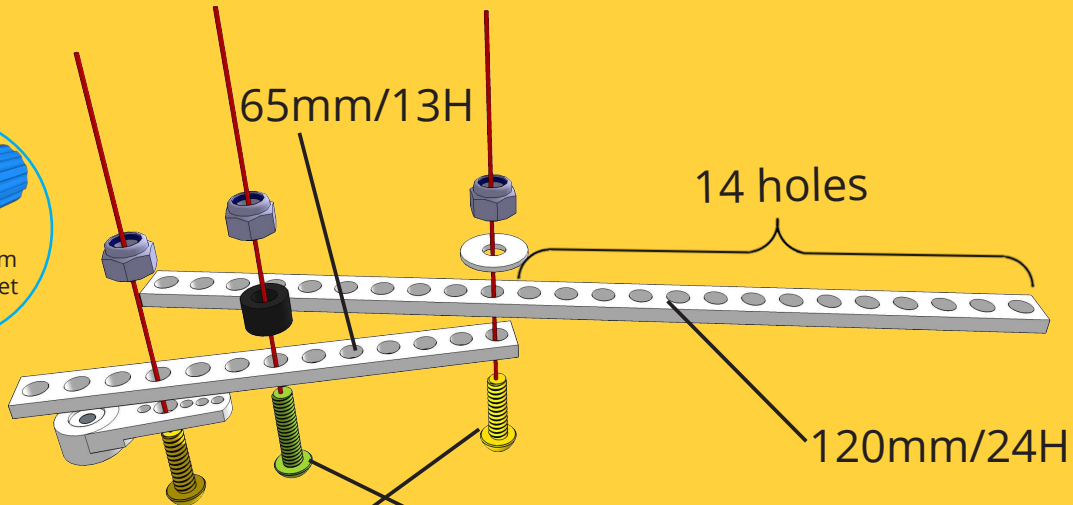
3



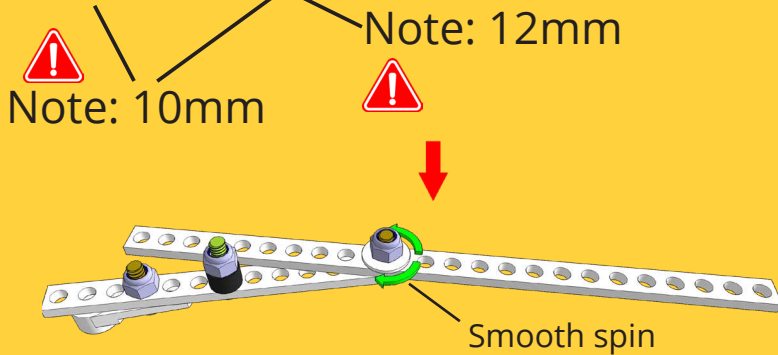
4



5

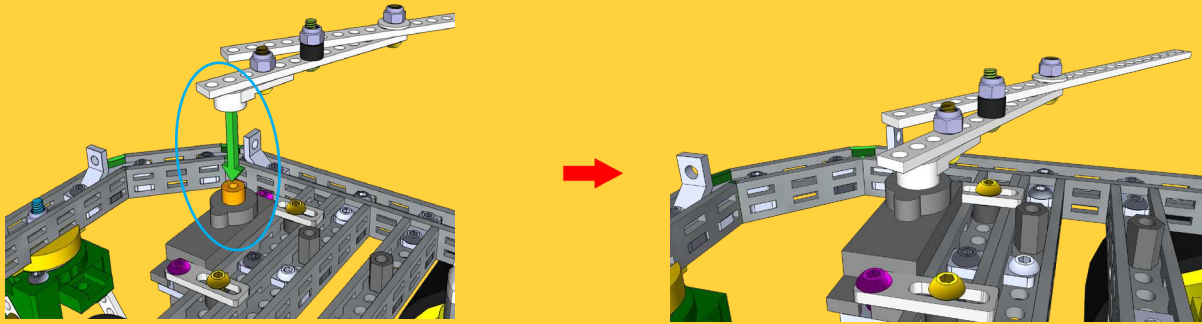


6

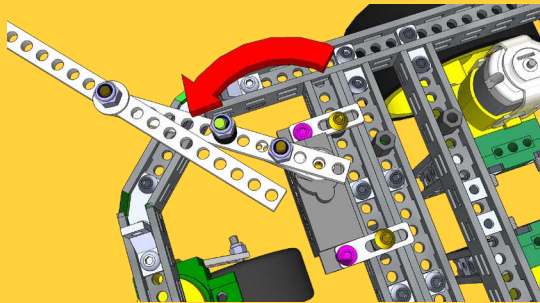




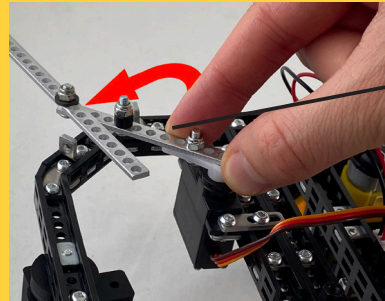
# Register the servo arm.




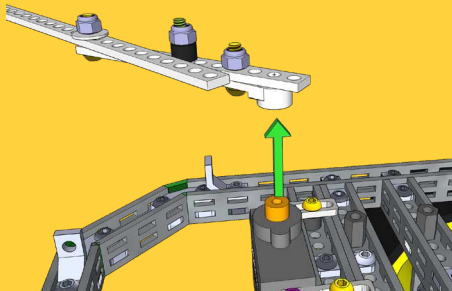
**A : Put on the servo arm assembly in any position.**



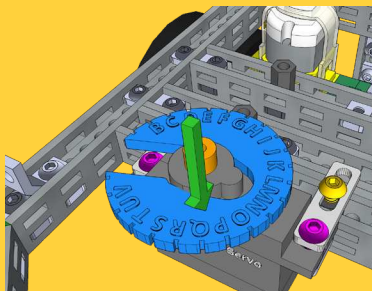
**B : Manually Twist the arm Counter Clockwise until it stops.**



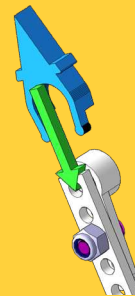
  
**Be careful.  
Don't use too  
much force. Gen-  
tly twist it Counter  
Clock-wise.**



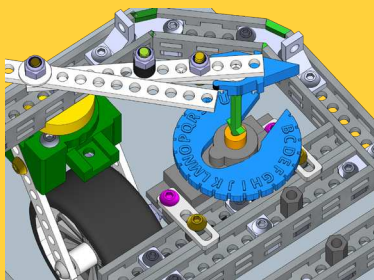
**C :** Temporarily take off the servo arm.



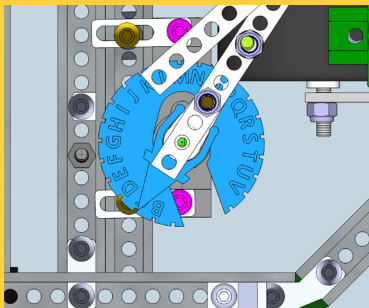
**D :** Slip on the Servo Arm Index Disc on to the servo.



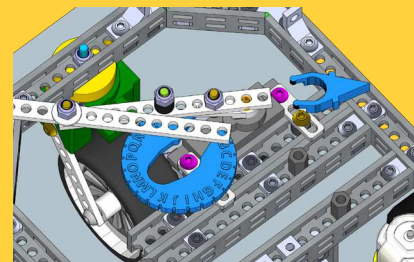
**E :** Attach the Servo Arm Index Arrow on to the servo arm.



**F :** Put the Servo Arm with Index Arrow back on the servo matching the "C" mark on the disc.




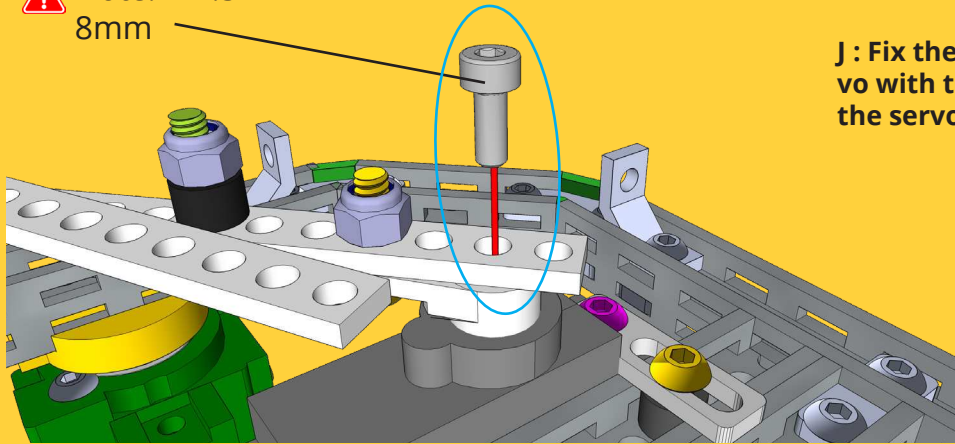
**G :** Here you can see the arrow points to the "C" index mark.



**H :** Take off the disc and arrow. Make sure the servo arm stays.

7

 Note: M2.5/  
8mm



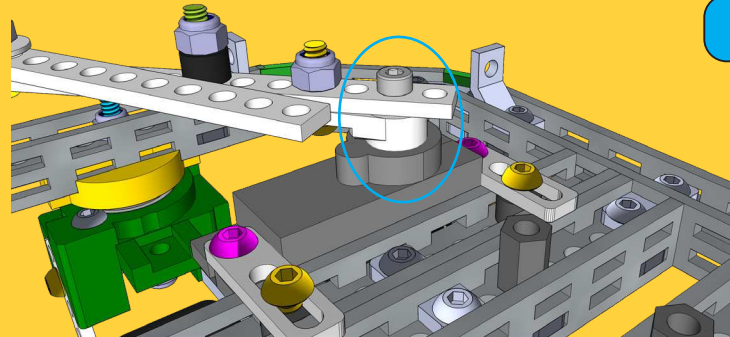
**J** : Fix the servo arm assembly to the servo with the m2.5 / 8mm bolt. Make sure the servo arm has stayed put.



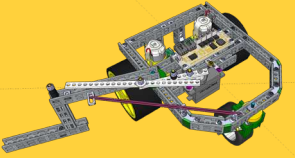
**PART 4**



8

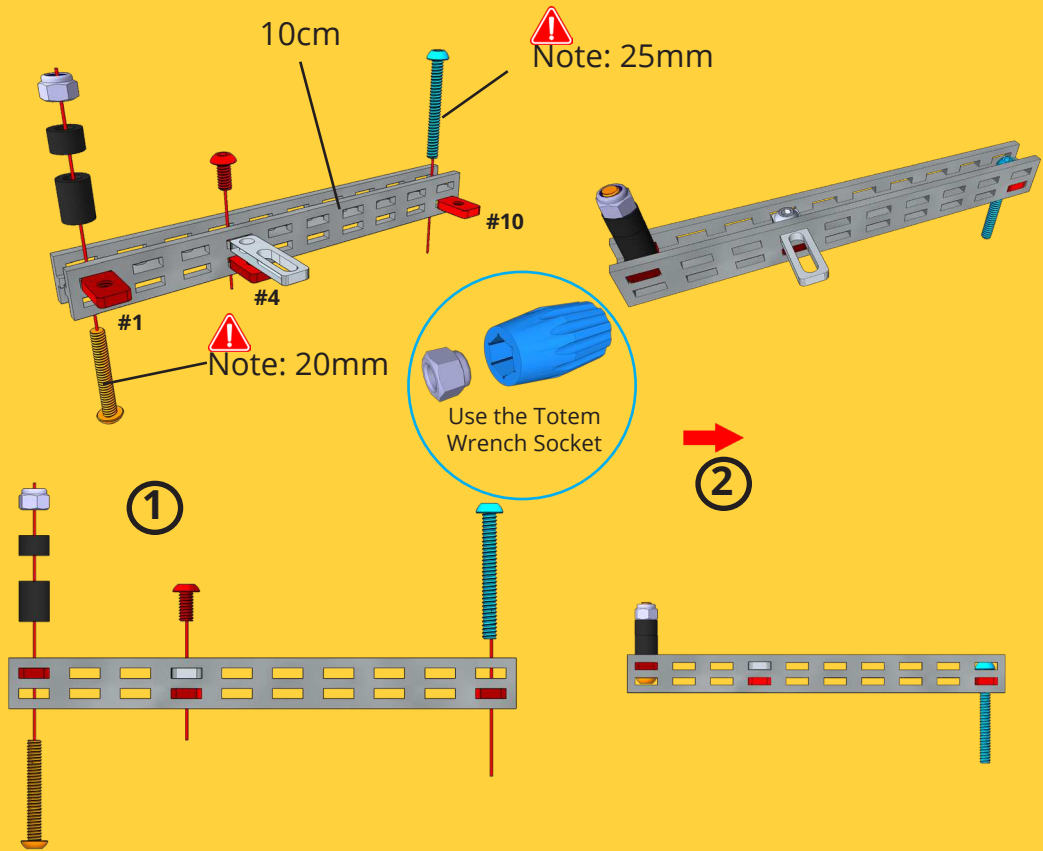


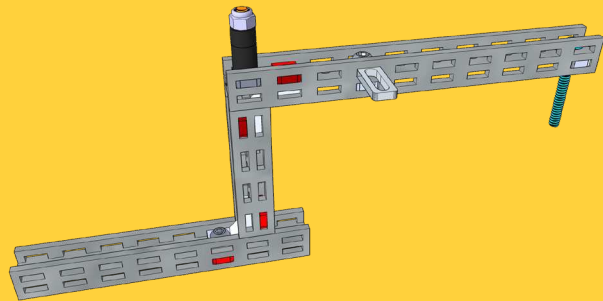
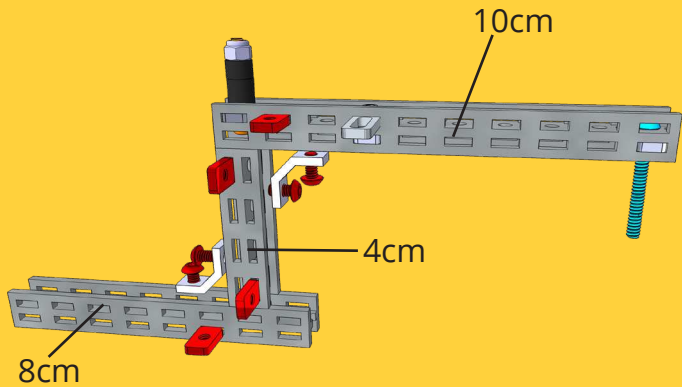
# PART 5



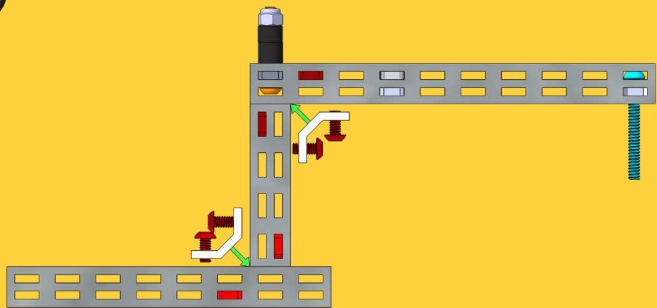
5x	1x	1x
Bolt M3x6	Bolt M3x20	Bolt M3x25
7x	2x	2x
Nut M3 6x10	Lock Nut M3	C-Bracket
1x	3x	1x
2-hole bracket	Nylon Spacer 4mm	Nylon Spacer 8mm
2x	1x	
Rubber Band	Washer 1mm DIA24mm	

4 cm	1x
8 cm	1x
10 cm	1x

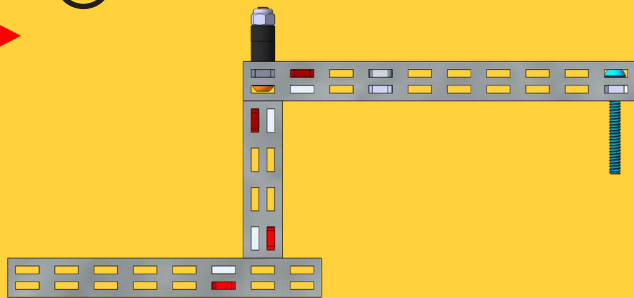


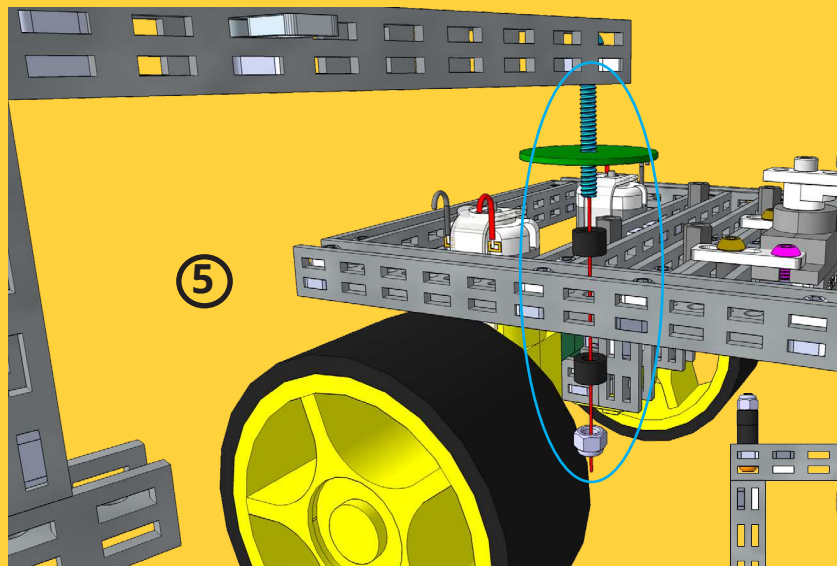


③

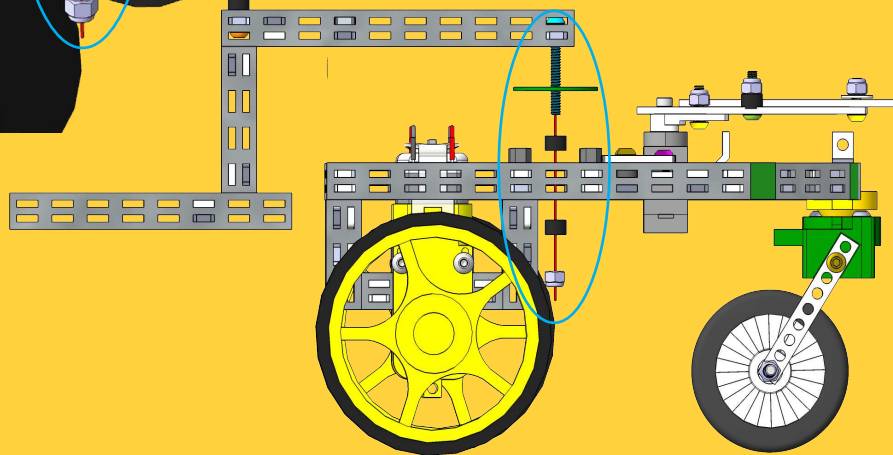


④

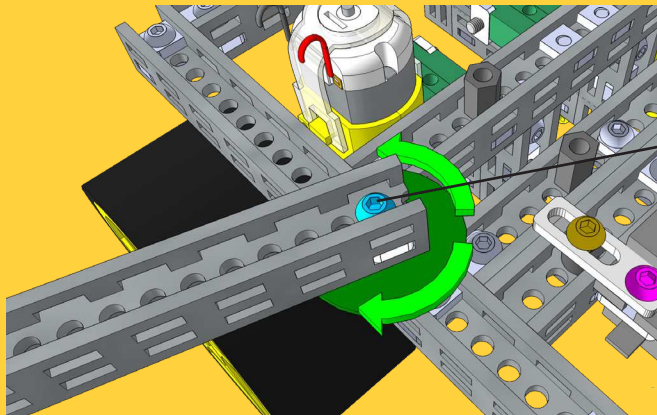




5

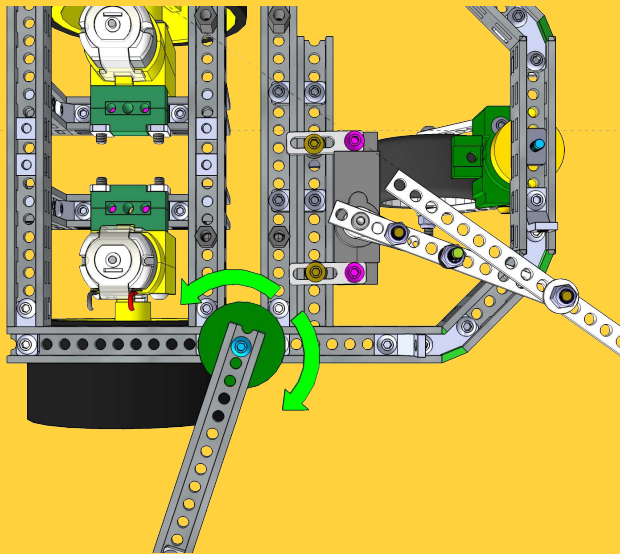


6



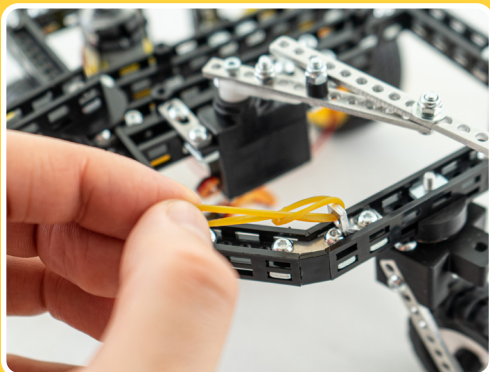
Don't tighten link too much.

There must be a smooth rotation.





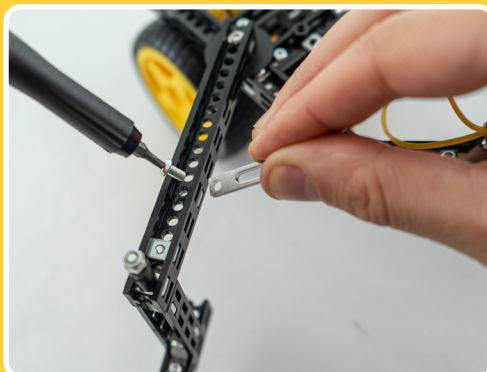
7



First loop the rubber band to the C-bracket as shown.



8



Temporarily take off the 2-hole bracket on the arm.

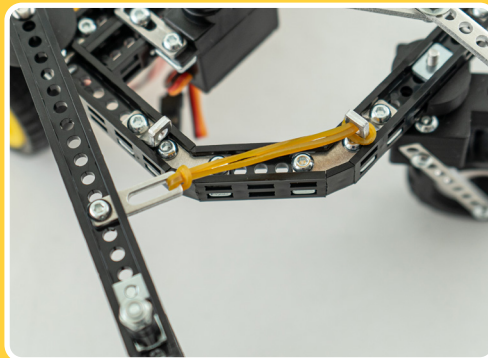


9



Loop the rubber band to the 2-hole bracket as shown.

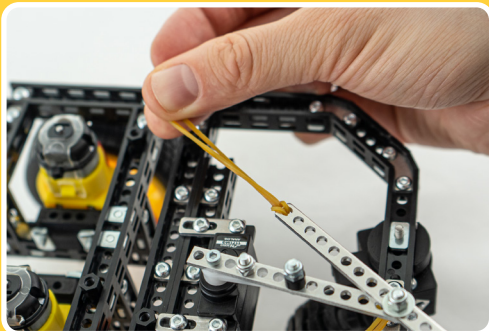
10



Again attach the 2-hole bracket to the arm.



11

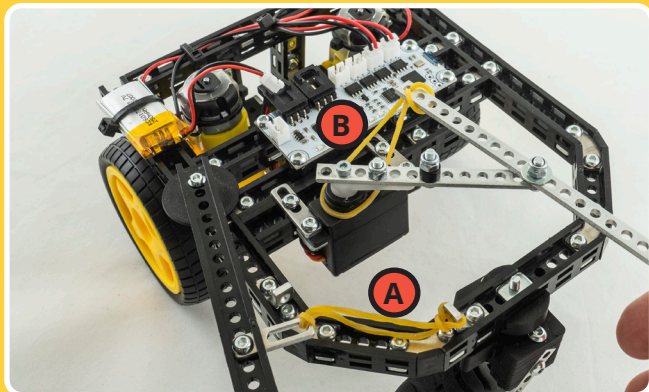


Loop the rubber band to the release arm as shown.

12



Stretch the rubber band AROUND the whole arm.



### Rubber bands

The included rubber band may vary in colour.

**A** This is the main rubber band that accumulates energy when pulled back, and releases it to shoot.

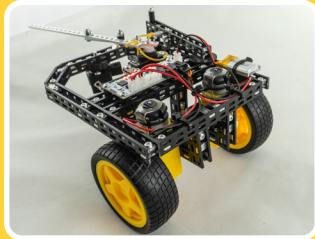
**B** This rubber band ensures that the release arm will be in the right position for next shot,



**PART 5**

# PART 6

## Mount the X3 controller.



4x

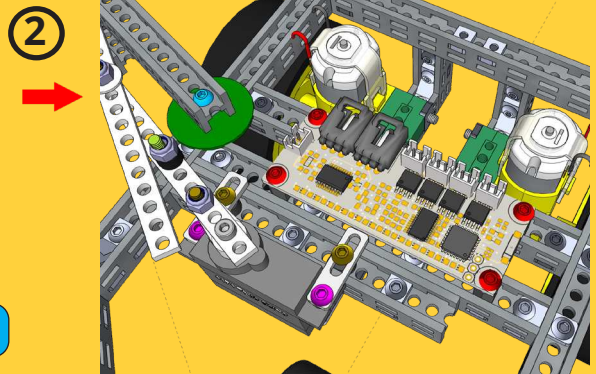
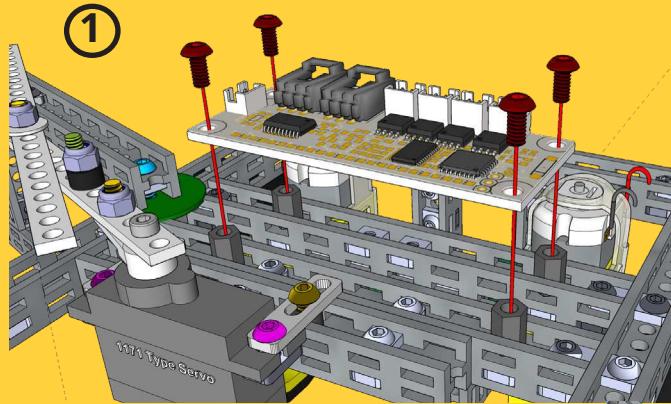


Bolt M3x6

1x



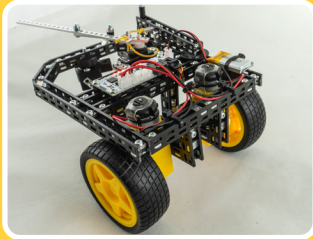
X3 Controller Board



PART 6

# PART 7

## Cabling and connections.



5-7x

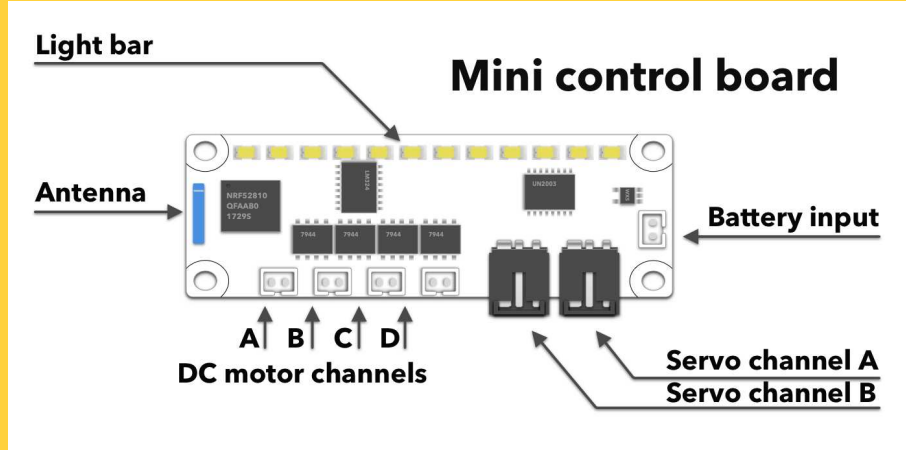


ZIP Tie

1x



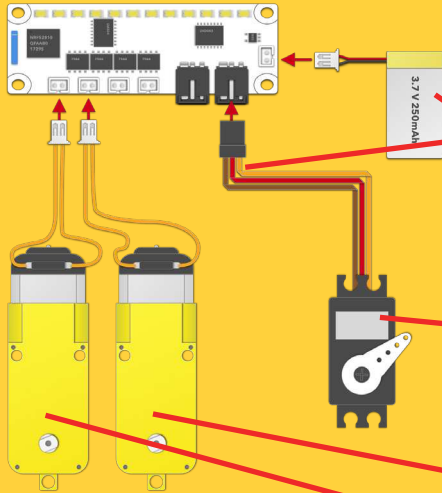
Li-Ion 3.7v Battery



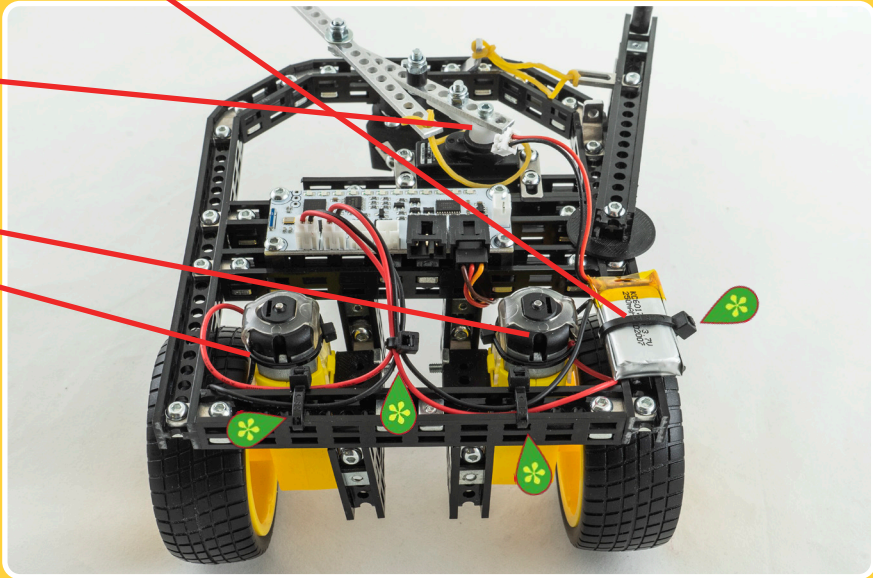
Integrated controller that has Bluetooth connection, 4 DC motor channels and 2 Servo motor channels.

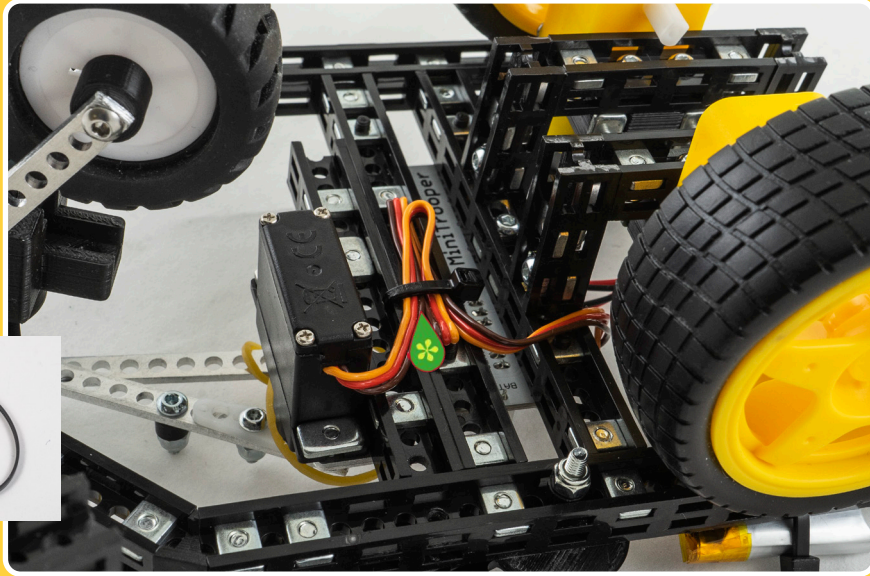
More info here:

<https://totemmaker.net/wiki/x3-fbi-board-set-up/>



**Note:**  
**Observe the orientation:**  
**Brown, Red and Yellow.**





**Building is finished !**

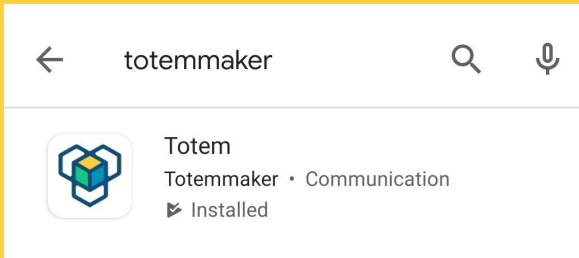
**Now it is time to  
test your model.**



**PART 7**

## HOW TO CONTROL

Download Totem app on your smartphone or tablet via App Store or Google Play.



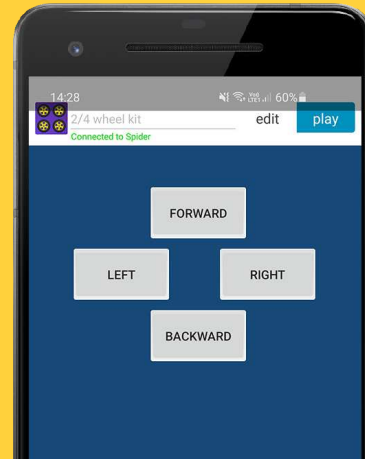
Follow the step by step guide to connect your Ladybug to your device.



Search for:  
**Totemmaker**



To slow down the rotation speed, press two buttons at the same time. I. e. press both Forward and Right buttons.





## PRECAUTIONS: ELECTRONICALLY OPERATED PRODUCT

Do not give this product to children aged 8 or below. As with all electronic products, precautions should be observed during handling and use to prevent electric shock.

**Adult supervision required.**

**Note to adults:** to ensure that the child's play is both safe and fun, please review all operating instructions and safety rules with your child.

### SAFETY WARNINGS:

- Do not pick up toy while in motion.
- Keep fingers, hair, and loose clothing away from moving parts, to avoid the injury.
- Adult supervision is required when this toy is being operated.
- If you stopped operating the toy, remember to unplug the battery, to avoid accidental operation.
- If the toy is dirty, please clean it with dry and soft cloth. Do not clean electronics.
- Do not expose the toy to high temperature, high humidity, or direct sunlight.
- Indoor use only. Do not put this product in water to avoid damaging its electronic components.
- The product is made of complex electronic circuit and electronic components, do not disassemble, or modify the circuit board.

### BATTERY SAFETY INFORMATION:

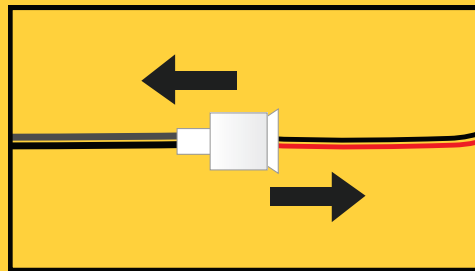
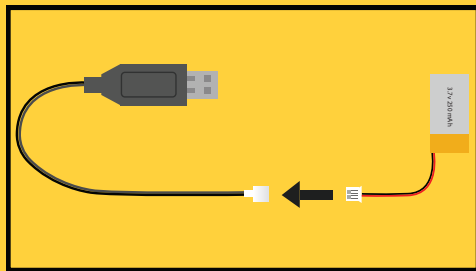
- This toy is designed to work with provided 250 mAh 3.7V LiPo battery and charger.
- Rechargeable battery must be charged by adult only.
- Do not leave charging without supervision of adult.
- There is a risk of fire and personal injury if battery is punctured, damaged or misused.
- Do not disassemble or damage the battery pack.
- Use only the supplied 250 mAh 3.7V LiPo battery. Using any other battery may damage the model.
- Use only the included USB charging cable to charge the battery.
- Please check on a regular basis the wire, plug, battery, charger, and other electronic parts on the toy. If any damage is found, please stop using the product immediately.
- Stop charging if battery becomes hot, smells, smokes or gives off strong odour.
- Never throw batteries into fire to avoid explosion or leakage.
- Check the batteries on regular basis to avoid leakage.
- Recycle or dispose of batteries according to local laws and guidelines.



## BATTERY CHARGING:

### Rechargeable battery must be charged by adult only.

- The new battery pack needs to be charged before use.
- Connect the USB charging cable to 5V USB power source, such as laptop.
- Connect the battery to the charger (see picture on the left). The charger will show a red LED light when charging the battery. When the battery is fully charged, the red LED light turns off.
- To disconnect cables, hold the connectors of both cables and pull apart (see picture on the right).
- Do not attempt to overcharge the battery.



KEEP THIS INSTRUCTION MANUAL AND THE PRODUCT BOX AS IT CONTAIN IMPORTANT INFORMATION FOR FUTURE REFERENCE.

Due to the continuous product improvement, the pictures on this manual may differ slightly from the actual product. Please adhere to actual product instead.

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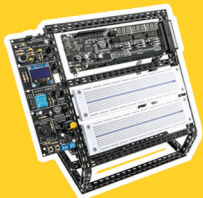
[www.totemmaker.net](http://www.totemmaker.net)  
Totem Technology, UAB  
Saulėtekio al. 15-709, Vilnius, 10224, Lithuania  
For customer support please contact: [support@totemmaker.net](mailto:support@totemmaker.net)

 **WARNING:**  
CHOKING HAZARD - Small parts.  
Not for children under 3 years.

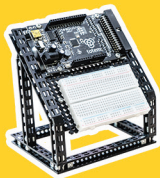




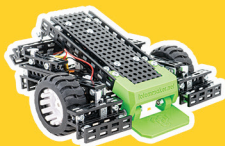
# Discover more of Totem:



Mini Lab



Micro Lab



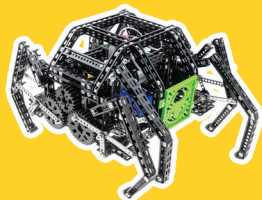
Mini Trooper



Young Engineer Kits



4WD Car Kit



Spider

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with **#totemmaker**

[www.totemmaker.net](http://www.totemmaker.net)