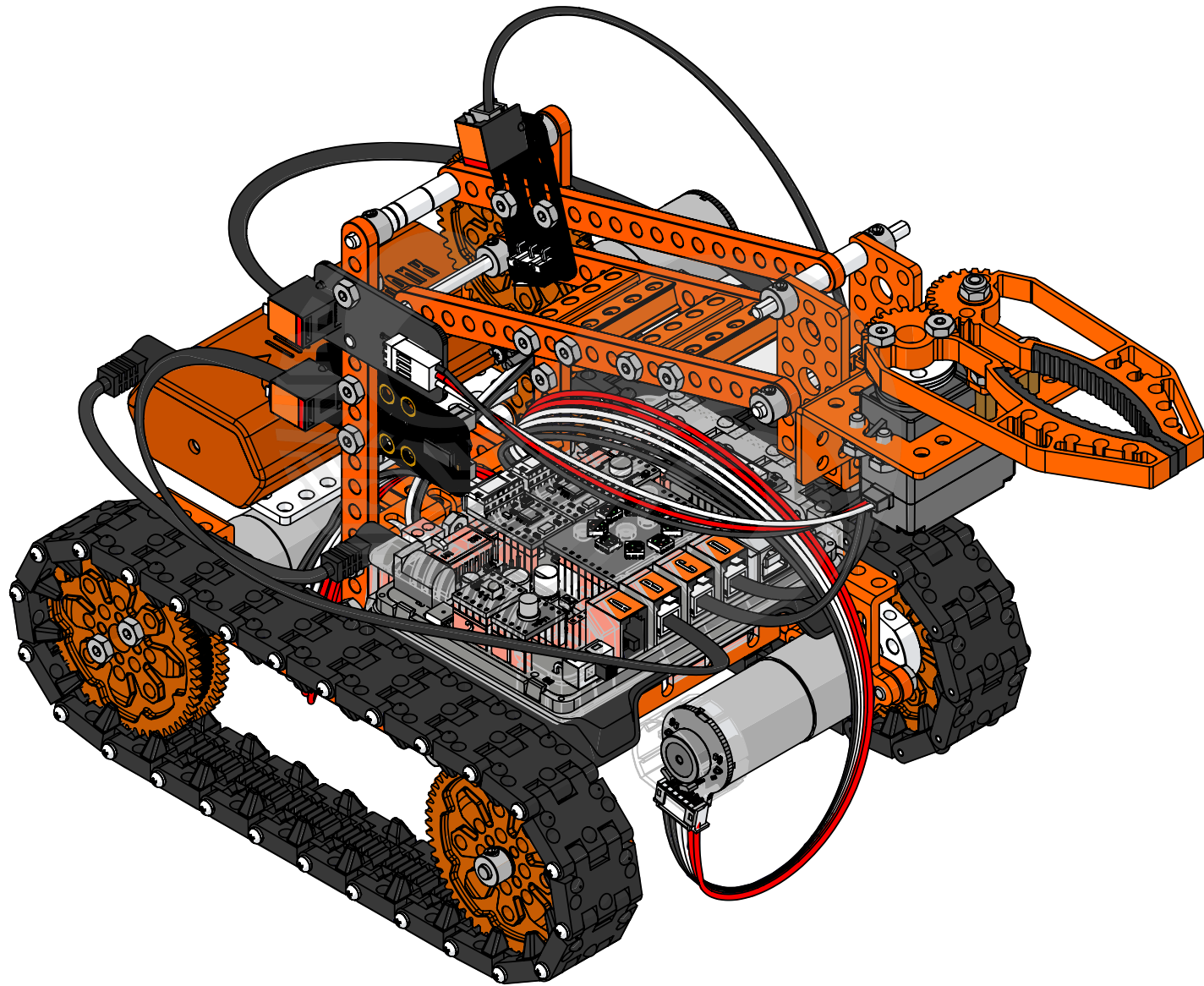


「 Chapter 3 Robot Arm Tank 」



「 Robot Arm Tank 」

► 00: Assembly Guide of Mainboard ELF



1x328P MicroChip Module V1.0



1xWeeeMake Bluetooth 4.1 Module



1xLight Sensor (Pin)



1xIR Receiver (Pin)



1xSound Sensor (Pin)



1xELF Mainboard



1xELF Mainboard Lid



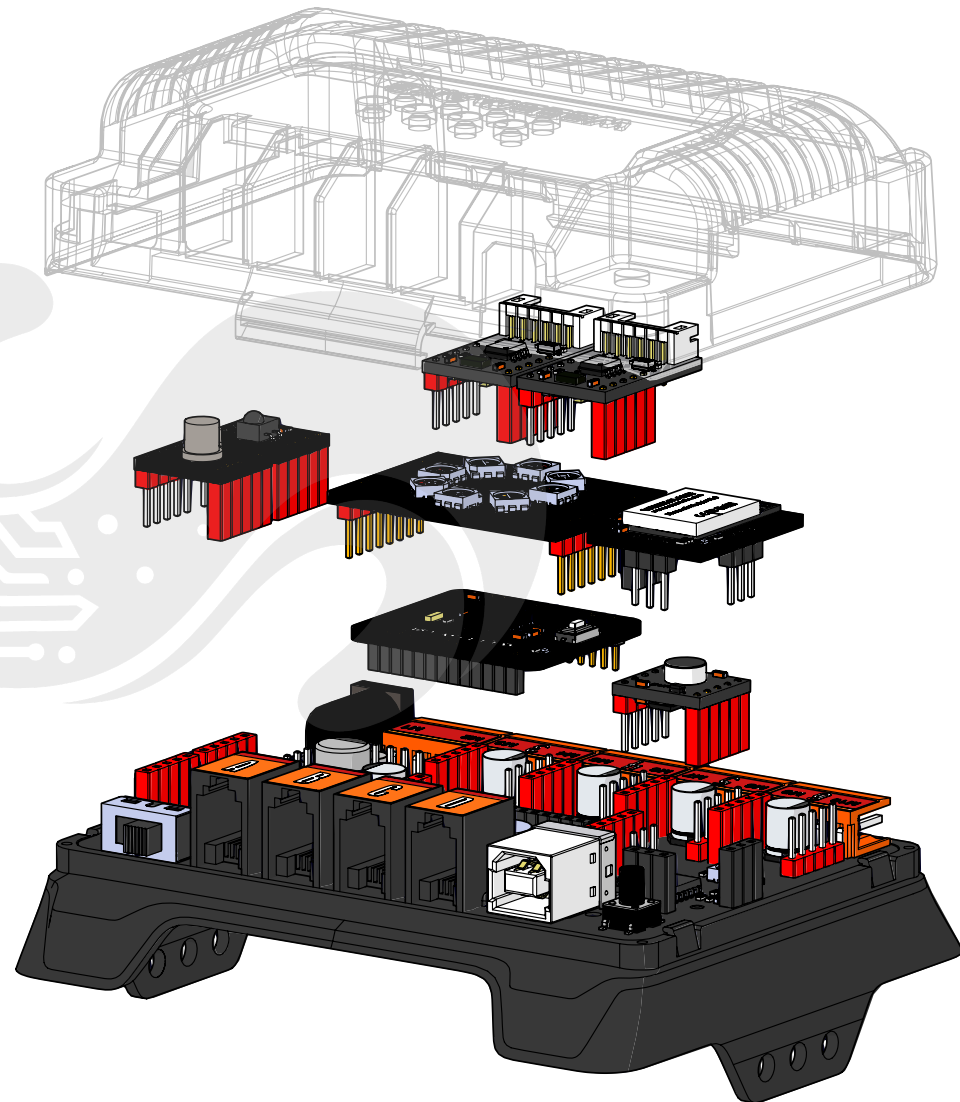
1xELF Mainboard Base



1xRGB LED - 8 (Pin)

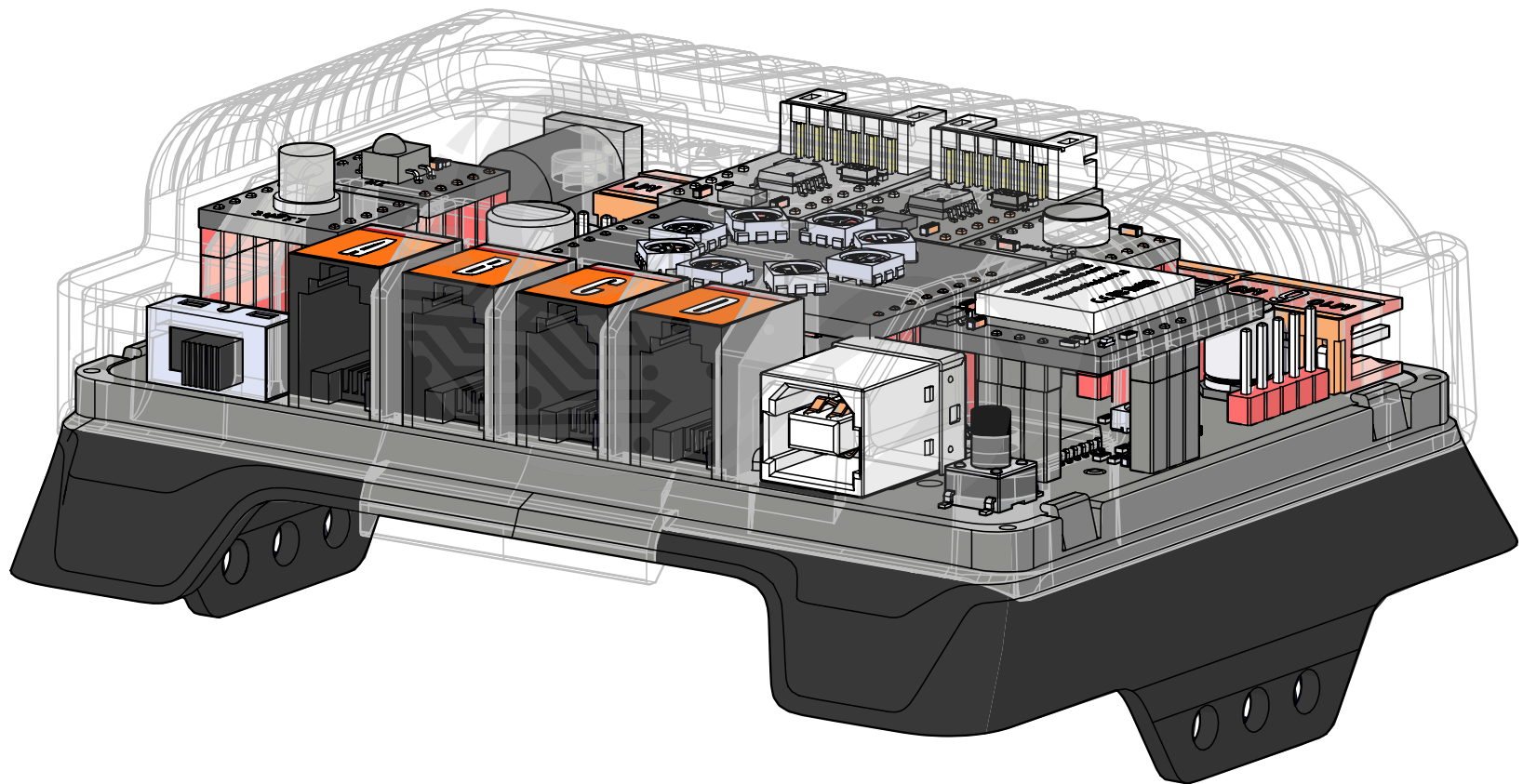


2xDC/Encoder Motor Driver



「 Robot Arm Tank 」

▶ 00: Assembly Guide of Mainboard ELF



「 Robot Arm Tank 」

► 00: Assembly Guide of Mainboard ELF



4xScrew M4*8



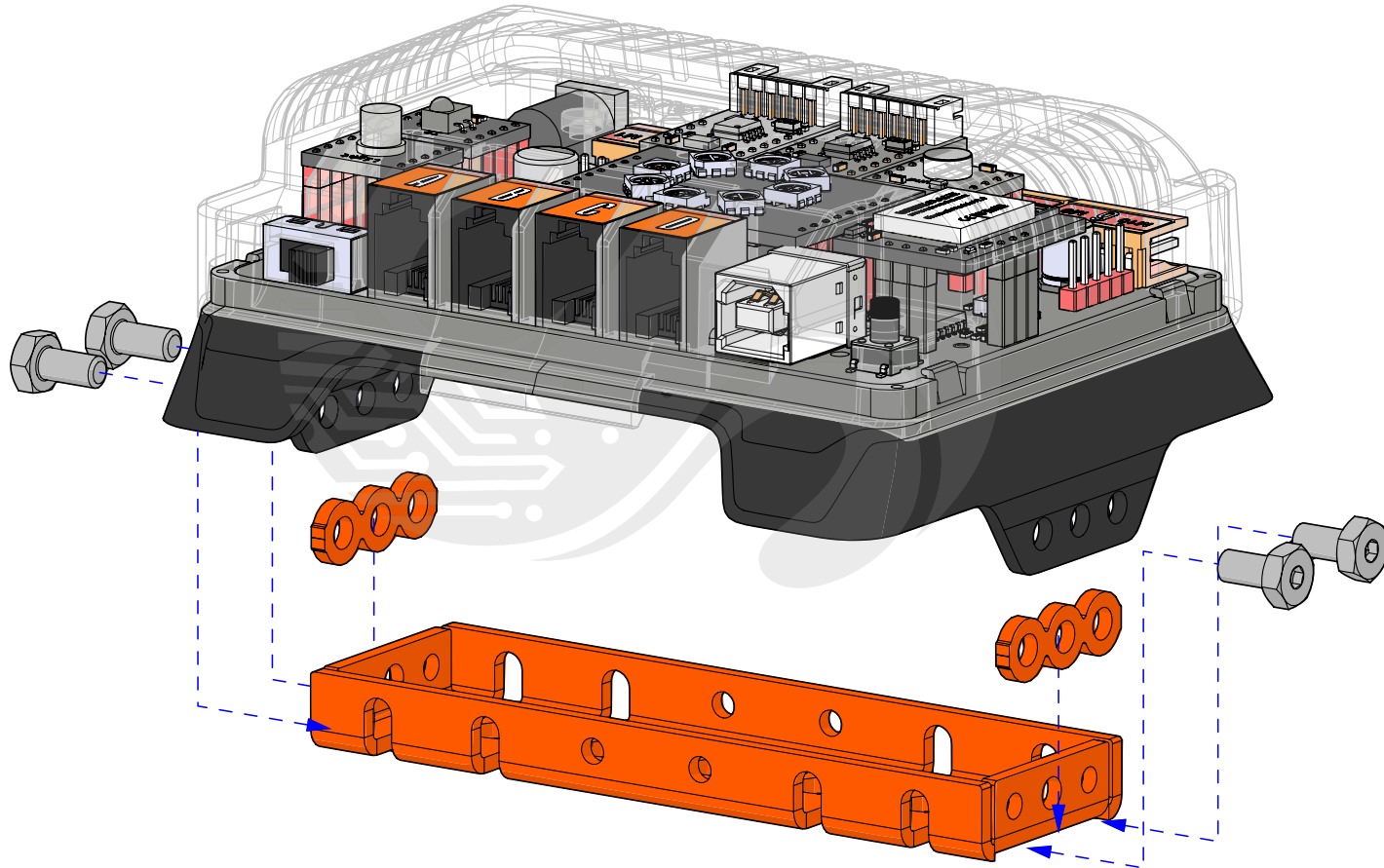
2xLinkage 0208-24



1xBeam 1030-100-B

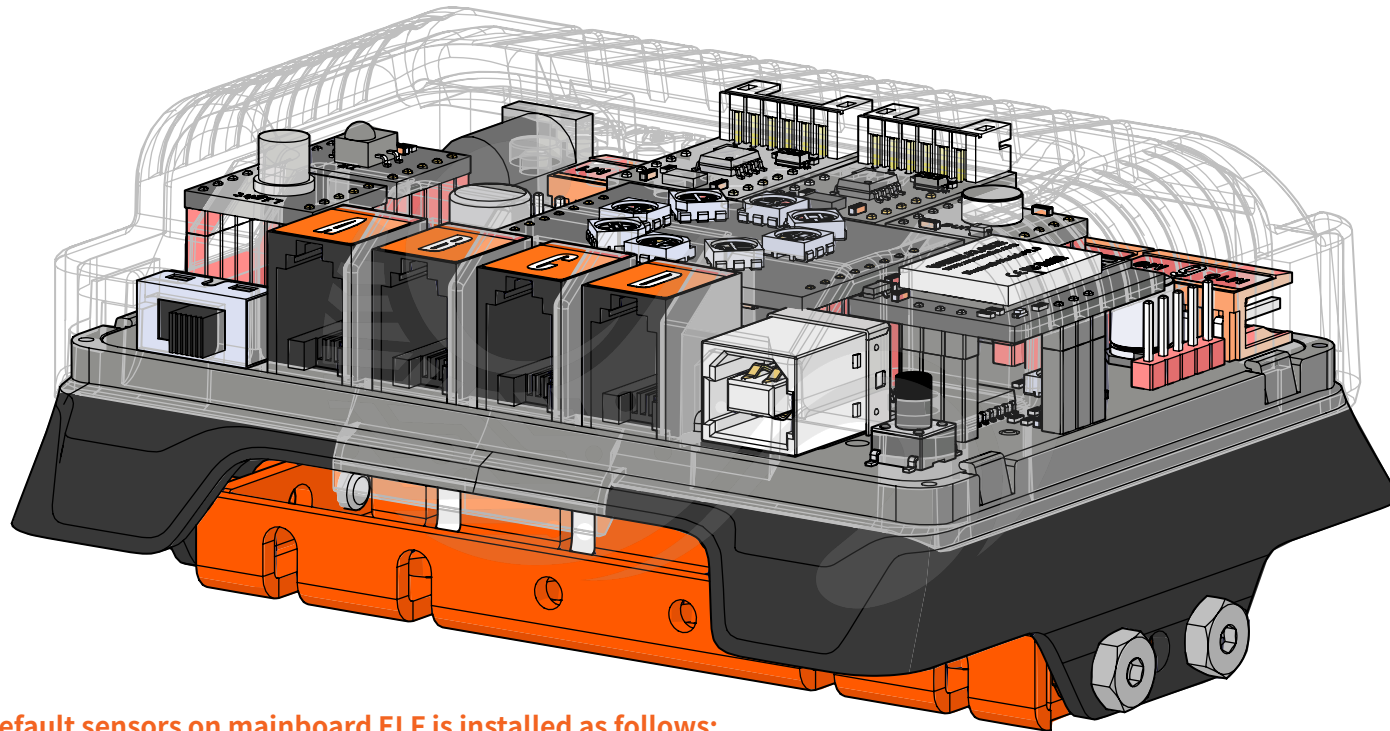


1xMainboard ELF



「 Robot Arm Tank 」

▶ 00: Assembly Guide of Mainboard ELF



Tips:

The default sensors on mainboard ELF is installed as follows:

Port 1 - Light Sensor Port 2 - IR Receiver Port 3 & 4 - DC/Encoder Motor Driver Port 5 - Sound Sensor

MCU Port - 328P Micro Chip

Communication Port - Bluetooth Module

Special port - RGB LED -8 Module

「 Robot Arm Tank 」

► 01: Assemble Slide Beam 0824-32



1xSlide Beam 0824-32



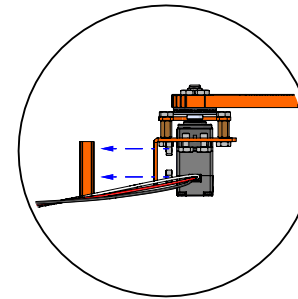
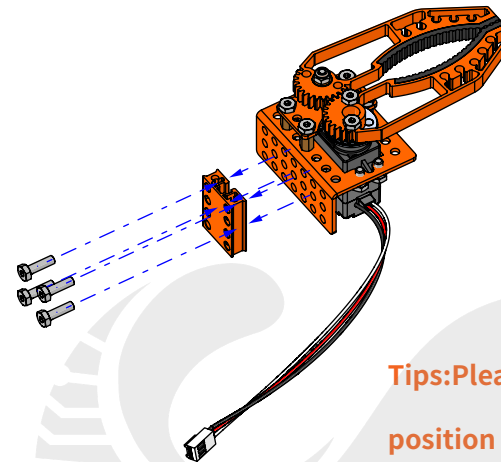
1xMG995 Metal Robot Gripper



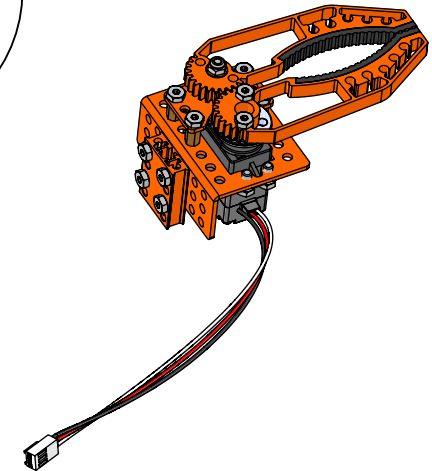
4xScrew M4*14



4x Nut M4



Reference view



Tips:Please pay attention to the hole position and direction.

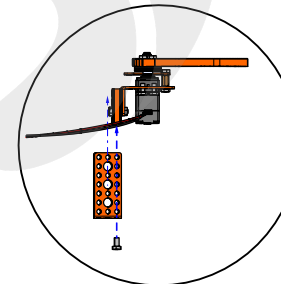
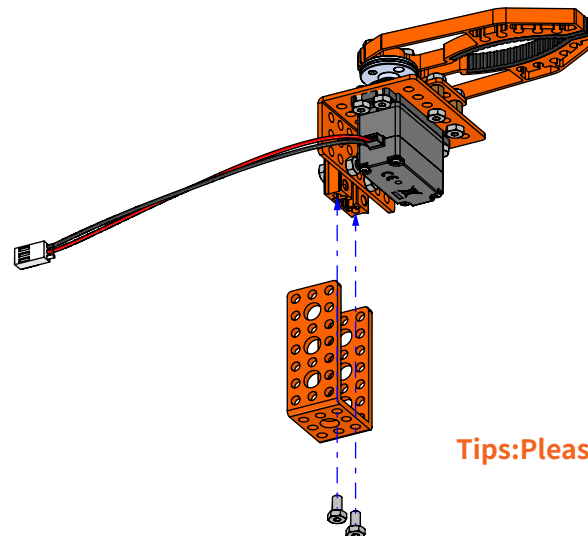
► 02: Assemble Bracket U1



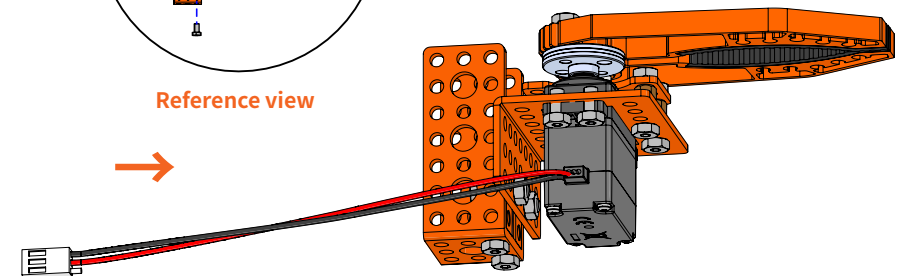
1xBracket U1



2xScrew M4*8



Reference view

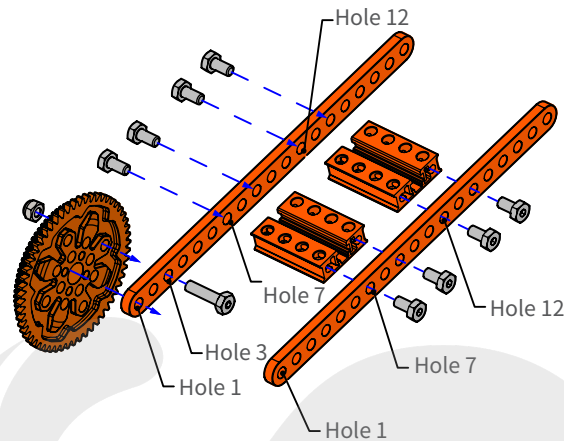


Tips:Please pay attention to the hole position and direction.

「 Robot Arm Tank 」

► 03: Assemble the Main Arm

-  2xSlide Beam 0824-32
-  2xBeam 0410-154
-  1x56T-Plastic Gear V1.0
-  8xScrew M4*8
-  1xScrew M4*20
-  1xNylon Lock Nut M4

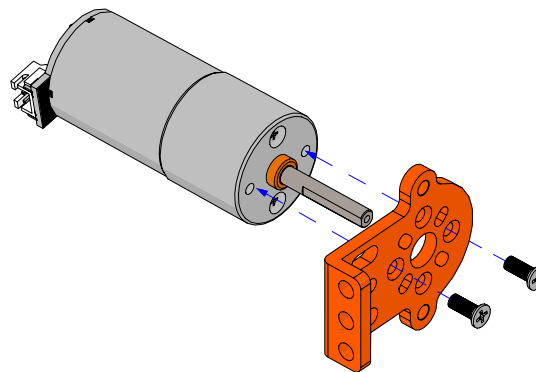


Tips:

Please pay attention to the hole position and direction.

► 04: Assemble DC Motor-25 (50RPM)

-  1x25 Motor Bracket
-  1xDC Motor-25 (50RPM)
-  2xCountersunk Head Screw M3*6



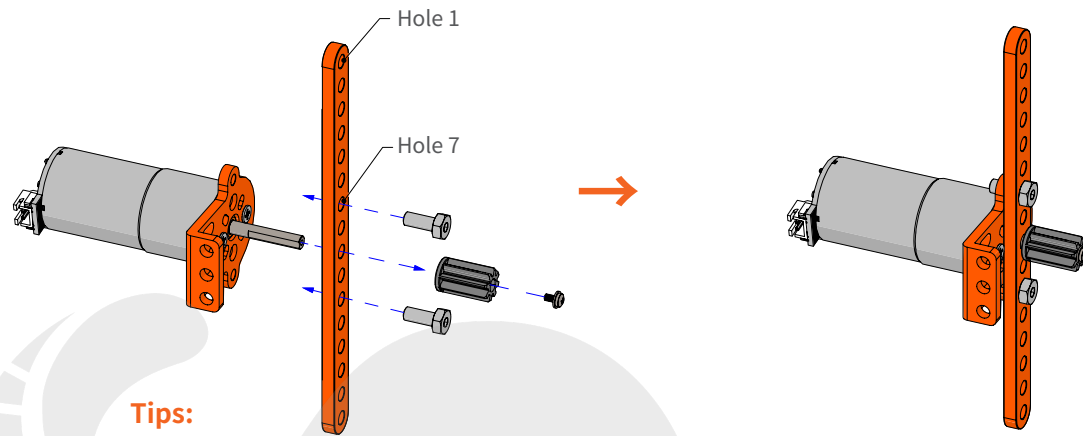
Tips:

Please pay attention to the hole position and direction.

「 Robot Arm Tank 」

► 05: Assemble 8T Plastic Gear

-  1xDC Motor-25 (50RPM) Assembly
-  1xBeam 0410-130
-  2xScrew M4*8
-  1x 8T-Plastic Gear V1.0 (Flat Hole)
-  1x Screw M2*4

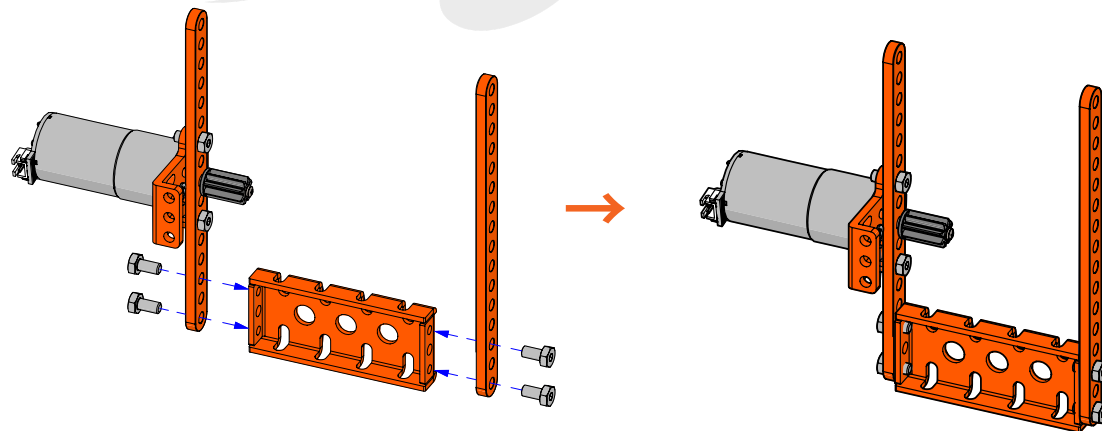


Tips:

Please pay attention to the hole position and direction.

► 06: Assemble the Main Arm

-  1xBeam 1030-68
-  1xBeam 0410-130
-  4xScrew M4*8



Tips:

Please pay attention to the hole position and direction.

「 Robot Arm Tank 」

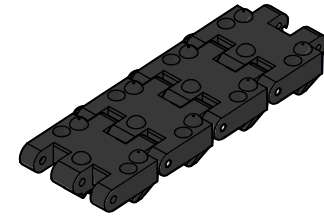
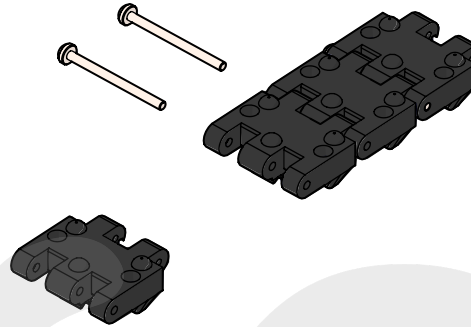
► 07: Assemble Caterpillar Track



26xTrack



26xTrack Axle 2*26



x 2

Tips: Assemble two caterpillar tracks as shown, each caterpillar track is consisted of 26 pieces of track.

► 08: Assemble Acrylic Bracket



1xSlide Beam 0824-80



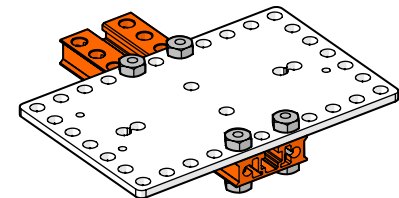
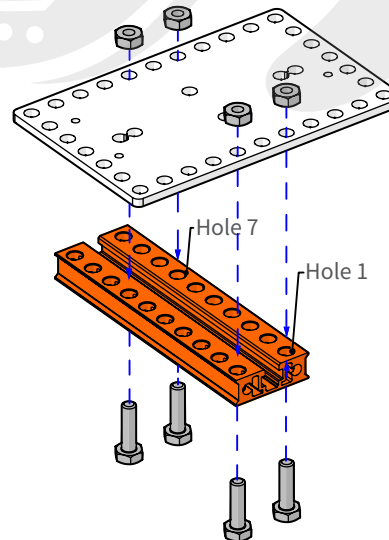
1xAcrylic Bracket



4xScrew M4*14



4xNut M4



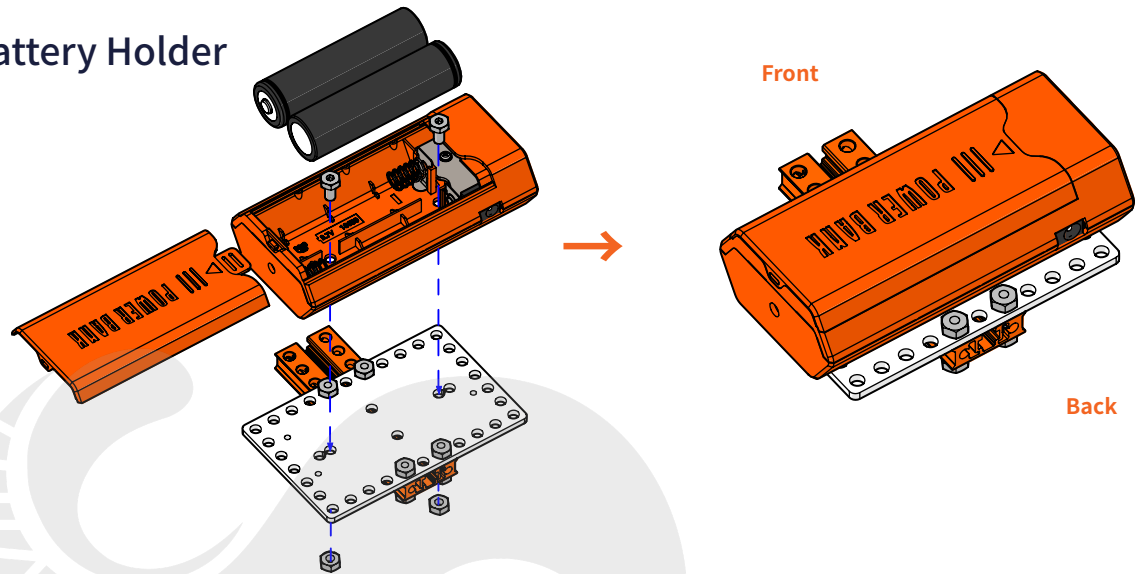
Tips:

Please pay attention to the hole position and direction.

「 Robot Arm Tank 」

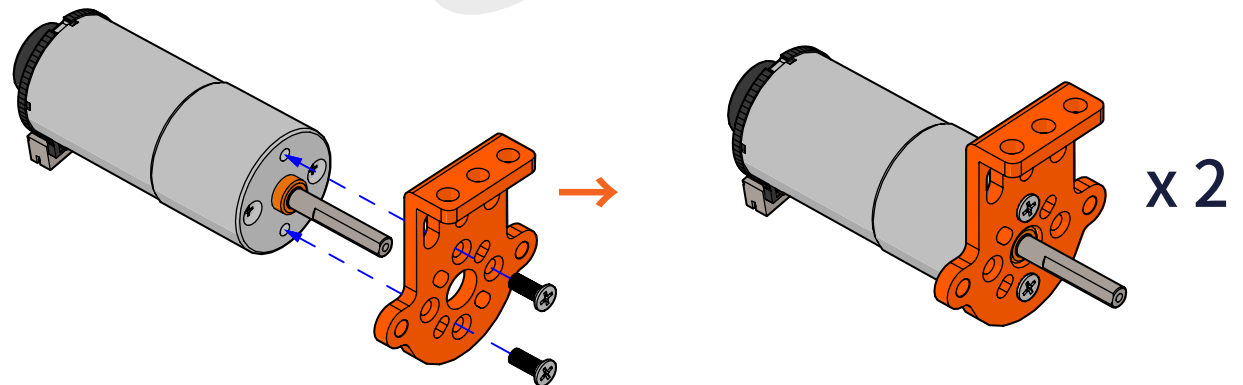
► 09: Assemble the 18650 Lithium Battery Holder

-  2x18650 Lithium Battery
-  1xLithium Battery Holder Lid
-  1xLithium Battery Holder
-  2xScrew M4*8
-  2xNut M4



► 10: Assemble Encoder DC Motor-25

-  1x25 Motor Bracket
-  1xEncoder DC Motor-25 9V188RPM
-  2xCountersunk Head Screw M3*6



Tips:

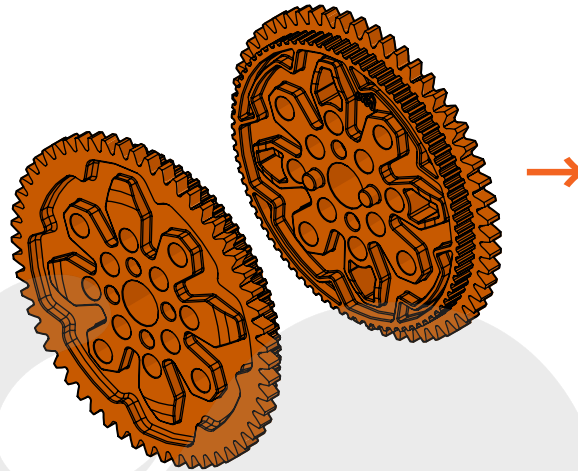
Please pay attention to the hole position and direction.

「 Robot Arm Tank 」

► 11: Assemble 56T Plastic Gear



2x56T-Plastic Gear



x 4

► 12: Assemble Active Wheel



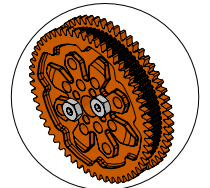
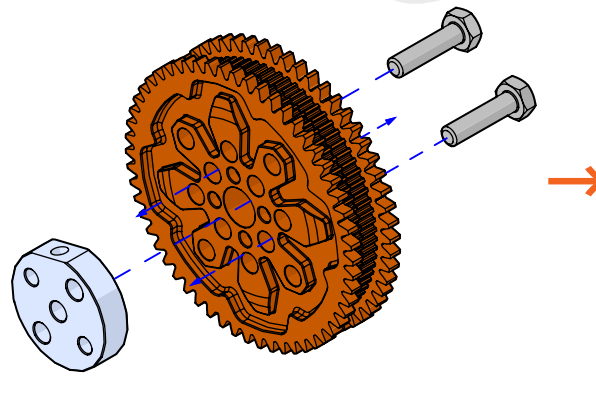
1xDriving Flange Hub 4mm



1x56T-Plastic Gear Assembly



2xScrew M4* 20



Reference view

x 2

Tips:

Please pay attention to the hole position and direction.

「 Robot Arm Tank 」

► 13: Assemble Base Structure



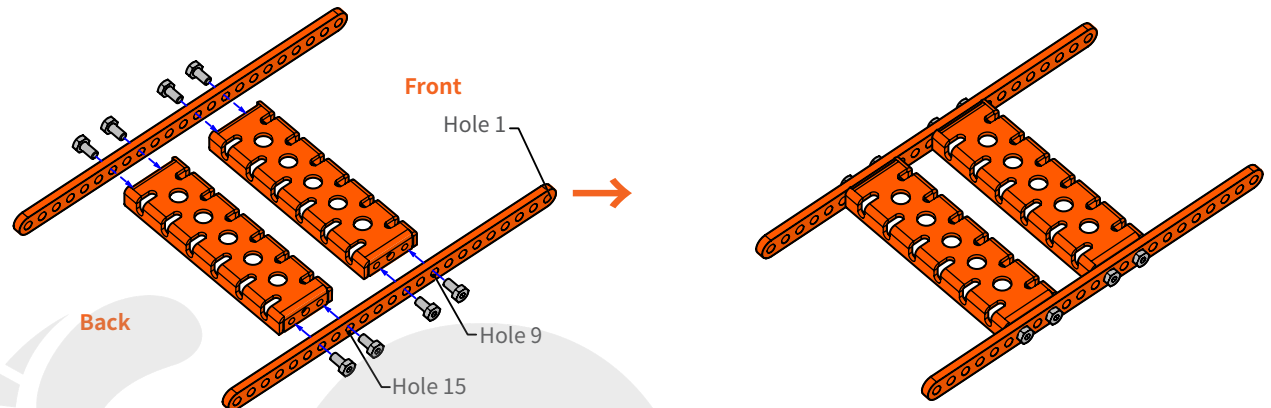
2xBeam 1030-100



2xBeam 0410-186



8xScrew M4*8



Tips:

Please pay attention to the hole position and direction.

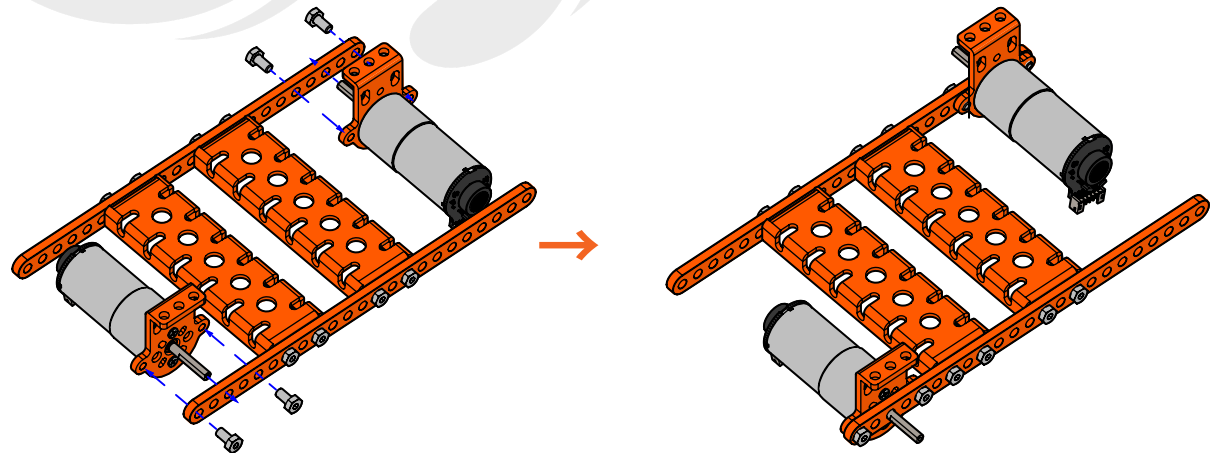
► 14: Assemble Base Structure Motor



2xEncoder DC Motor-25 (188RPM) Assembly



4xScrew M4*8



Tips:

Please pay attention to the hole position and direction.

「 Robot Arm Tank 」

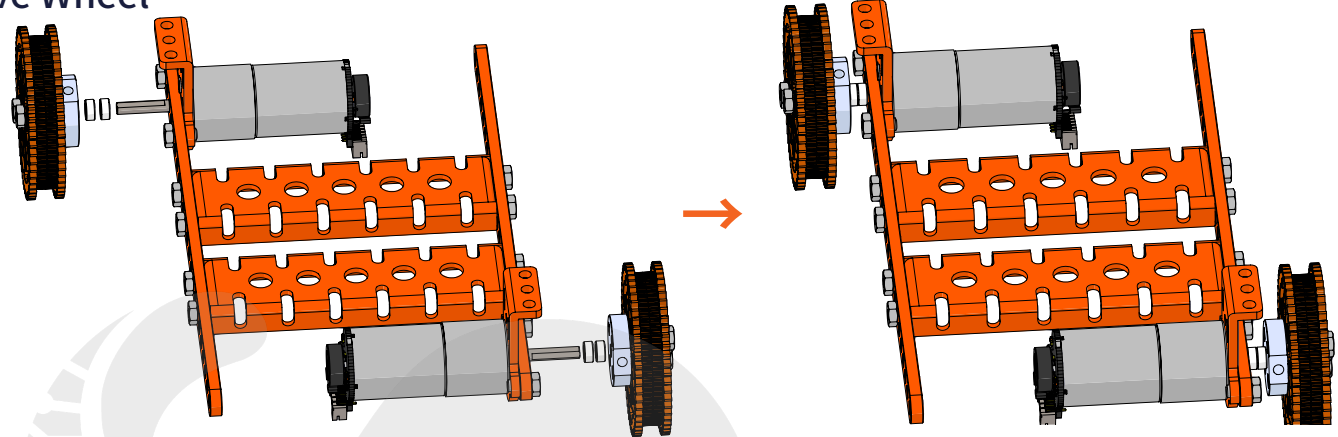
► 15: Assemble and Fix the Active Wheel



2xActive Wheel



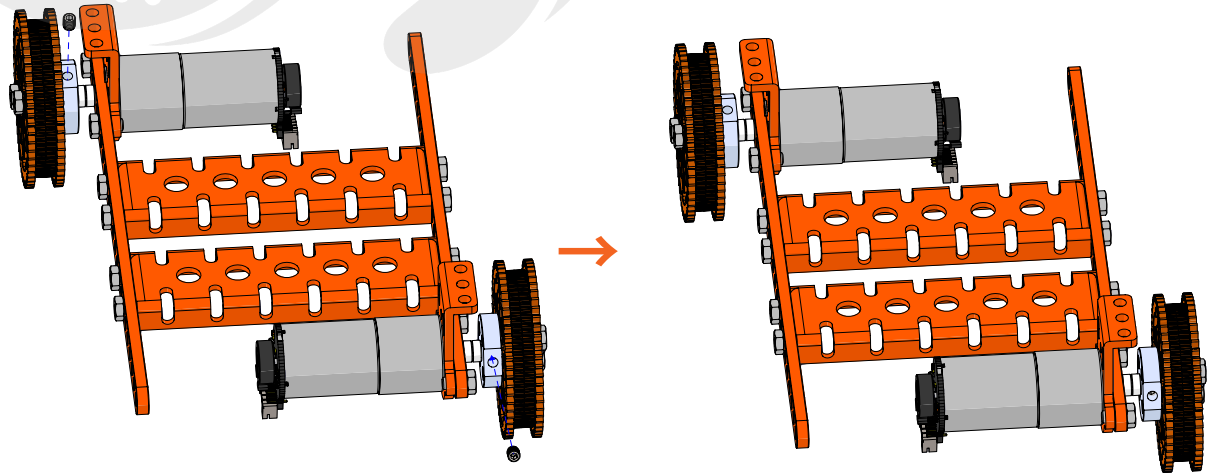
4xNylon Spacer 4*7*3



► 15: Assemble and Fix the Active Wheel



2xHeadless Screw M4*5



Tips:

Please screw the headless screw M4*5 to the flat surface of motor shaft.

「 Robot Arm Tank 」

► 16: Assemble and Fix the Driven Wheel



2xThreaded shaft 4-48

2x56T-Plastic Gear Assembly

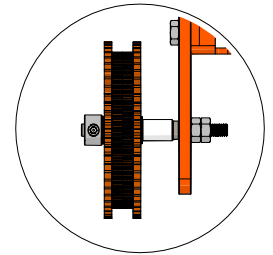
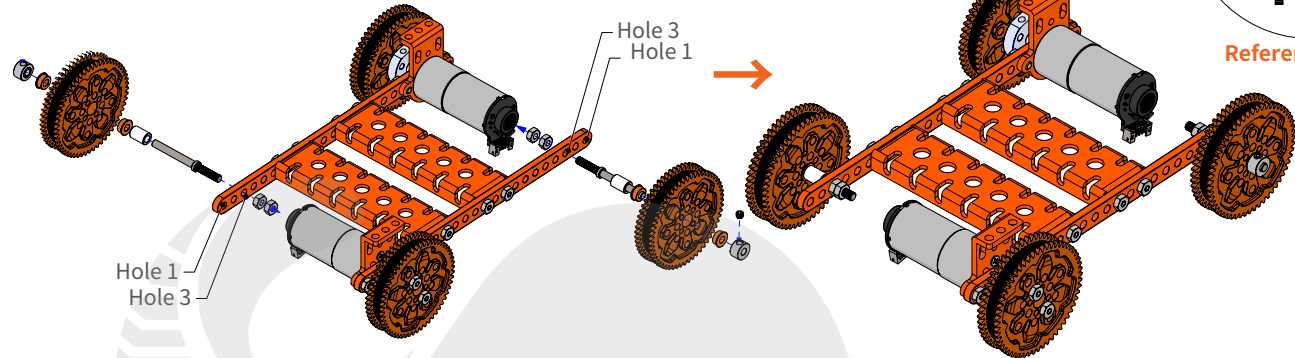
4xFlange Copper Bearing 4*8*3.5

2x Shaft Collar - 4mm

2xNylon Spacer 4*7*10

4xNut M4

2xHeadless Screw M4*3

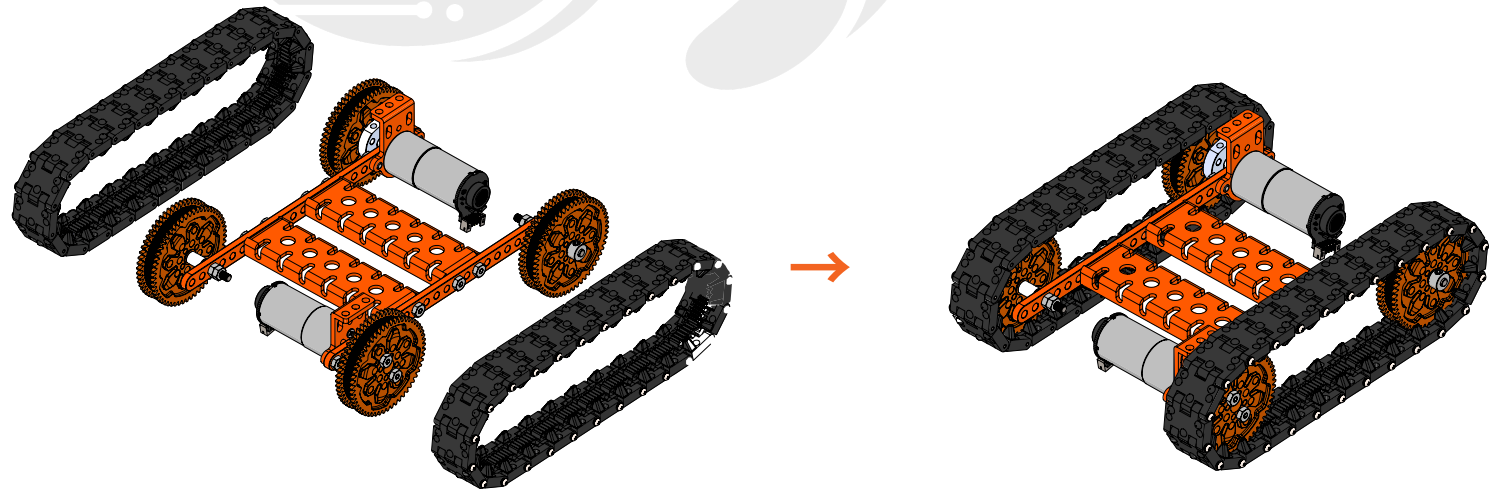


Reference view

► 17: Assemble the Track on the Chassis



2xTrack Assembly



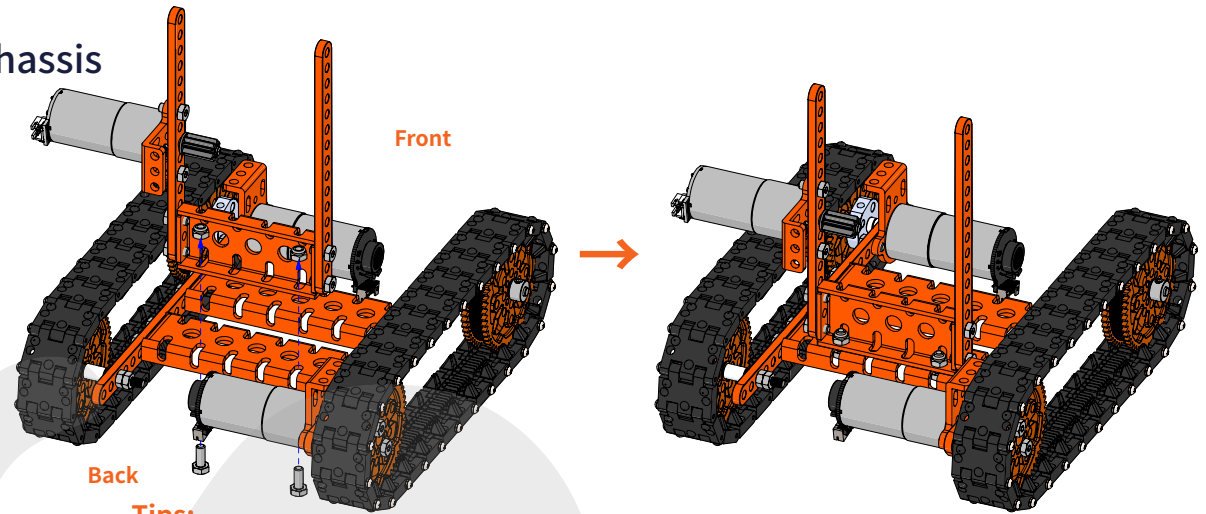
Tips:

1.Pay attention to the correct direction.

「 Robot Arm Tank 」

► 18: Assemble the Fixed Arm on the Chassis

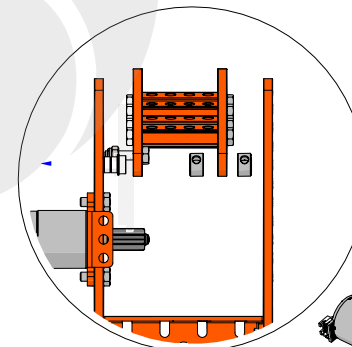
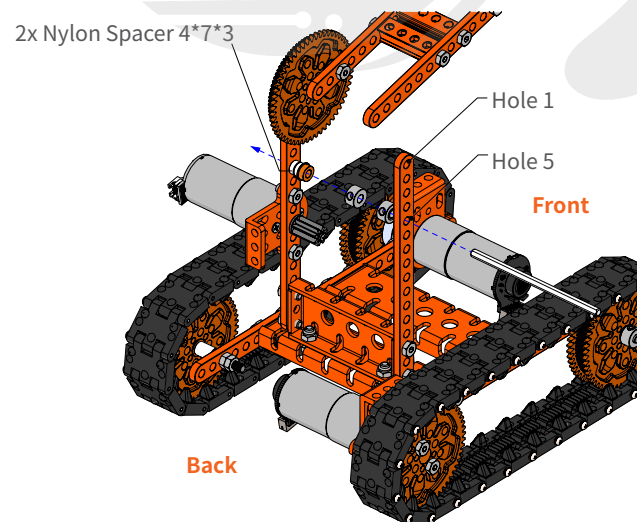
-  1xFixed Arm
-  2xScrew M4*10
-  2xNylon Lock Nut M4



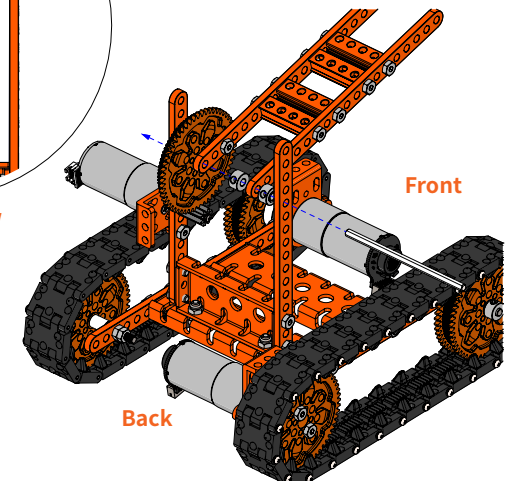
Tips:
 1. Pay attention to the correct hole and direction.
 2. The nylon lock nut M4 needs to be tightened.

► 19: Assemble the Main Arm on the Chassis

-  1xMain Arm
-  1xFlat Shaft 4-80
-  1xFlange Copper Bearing 4*8*3.5
-  2xShaft Collar - 4mm
-  2xNylon Spacer 4*7*3



Reference view



Tips:

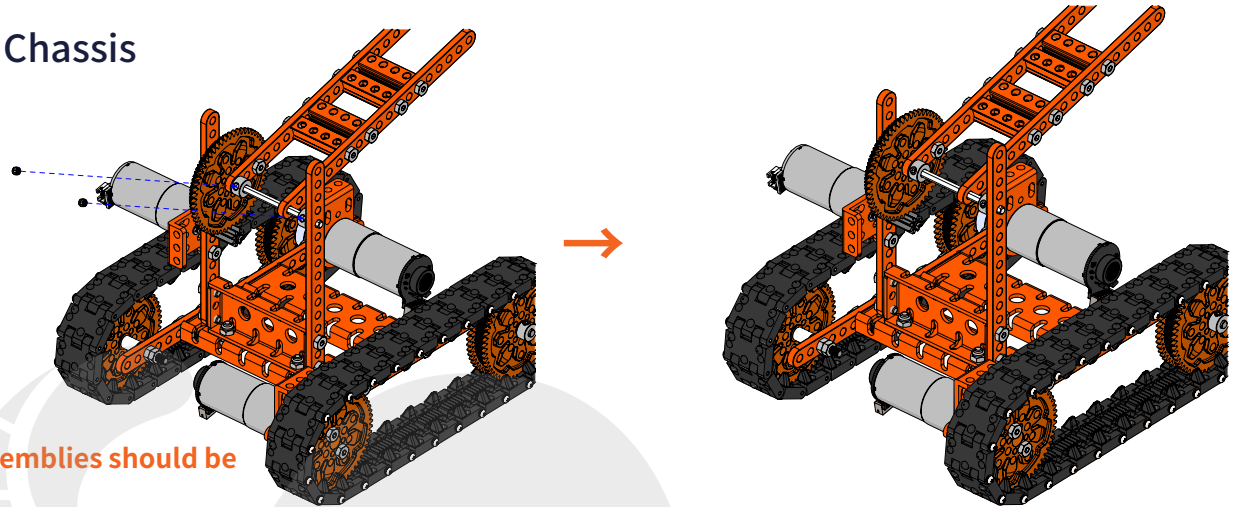
Please pay attention to the hole position and direction.

「 Robot Arm Tank 」

► 19: Assemble the Main Arm on the Chassis



2xHeadless Screw M4*3



Note: The left and right assemblies should be symmetrical and should not be shaken.

► 20: Assemble the Auxiliary Arm on the Chassis



1xBeam 0410-154



1xFlat Shaft 4-80



3xShaft Collar - 4mm



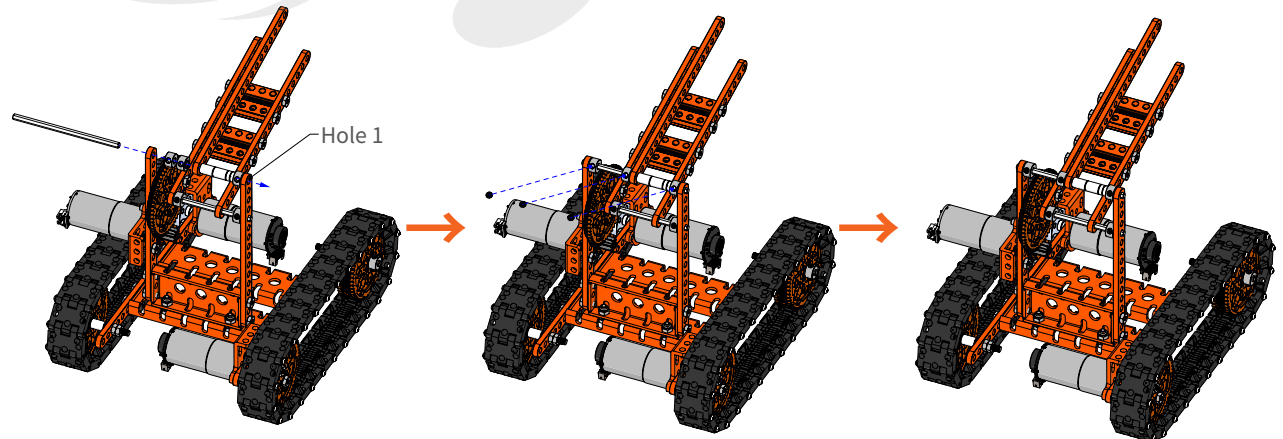
2xNylon Spacer 4*7*3



2xNylon Spacer 4*7*10



3xHeadless Screw M4x3



Tips:

Please pay attention to the hole position and direction.

Note: The left and right assemblies should be symmetrical and should not be shaken.

「 Robot Arm Tank 」

► 21: Assemble the Robot Gripper



1xMG995 Metal Robot Gripper Assembly



2xFlat shaft 4-56



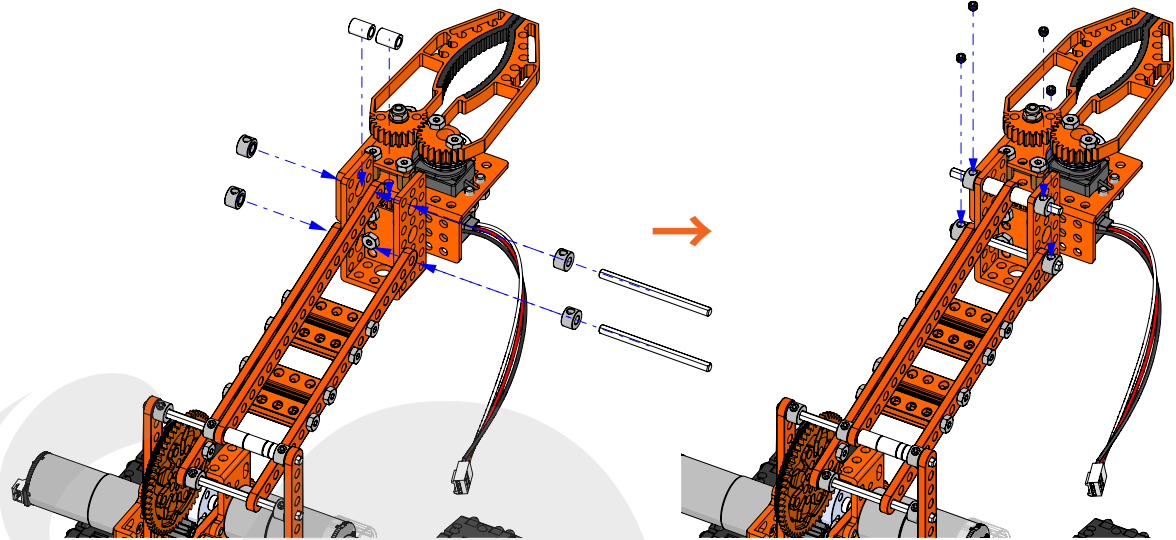
4xShaft Collar - 4mm



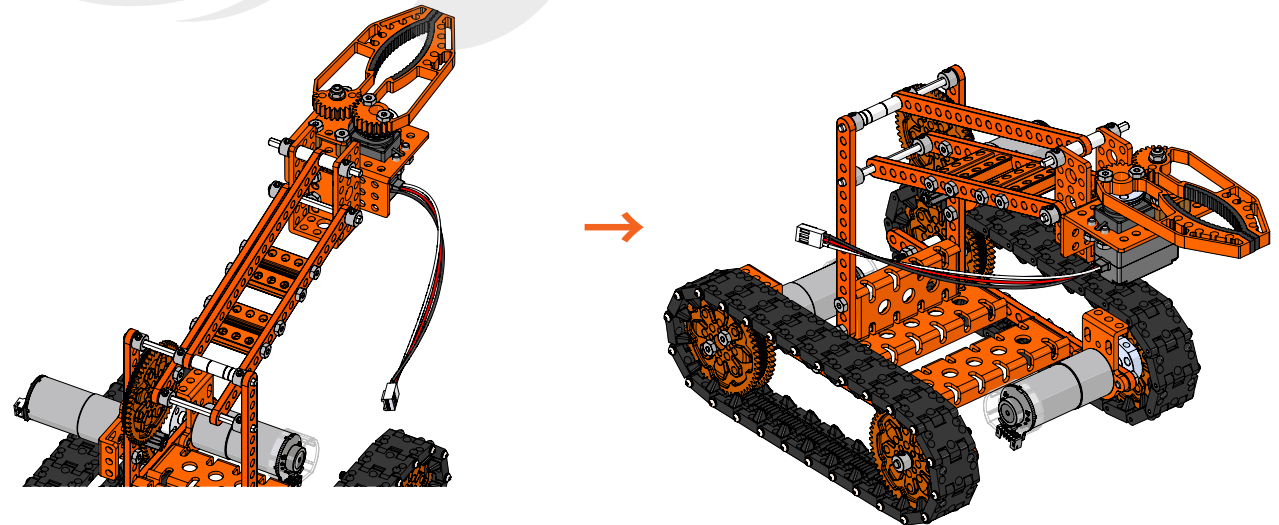
2xNylon Spacer 4*7*10



4xHeadless Screw M4*3



► 21: Assemble the Robot Gripper



「 Robot Arm Tank 」

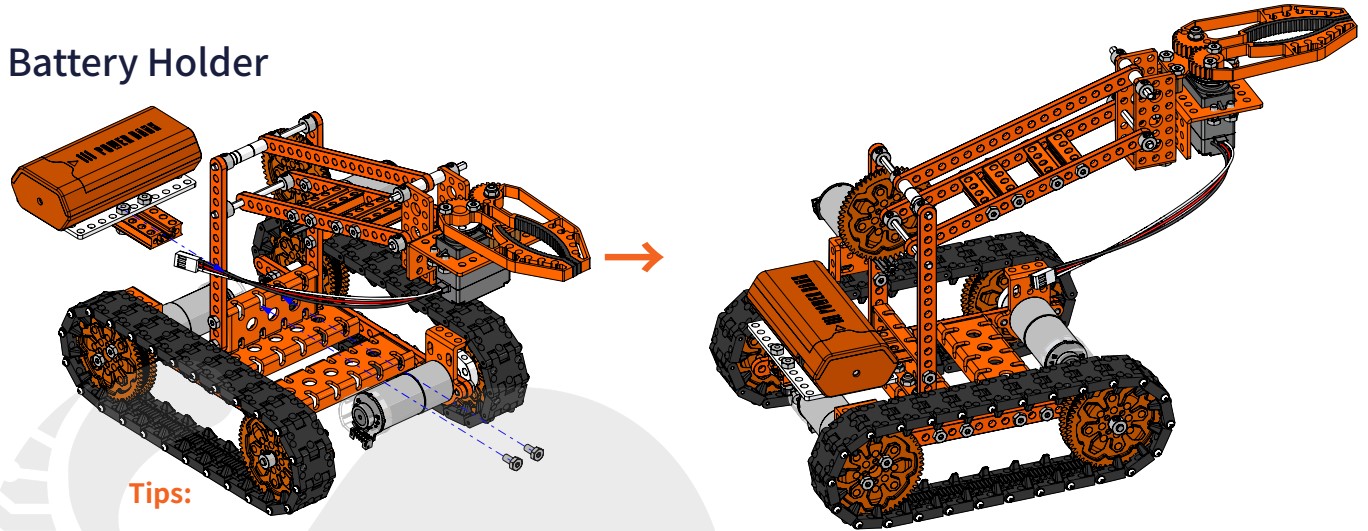
► 22: Assemble the 18650 Lithium Battery Holder



1x18650 Lithium Battery Assembly



2xScrew M4*8



Tips:

Please pay attention to the hole position and direction.

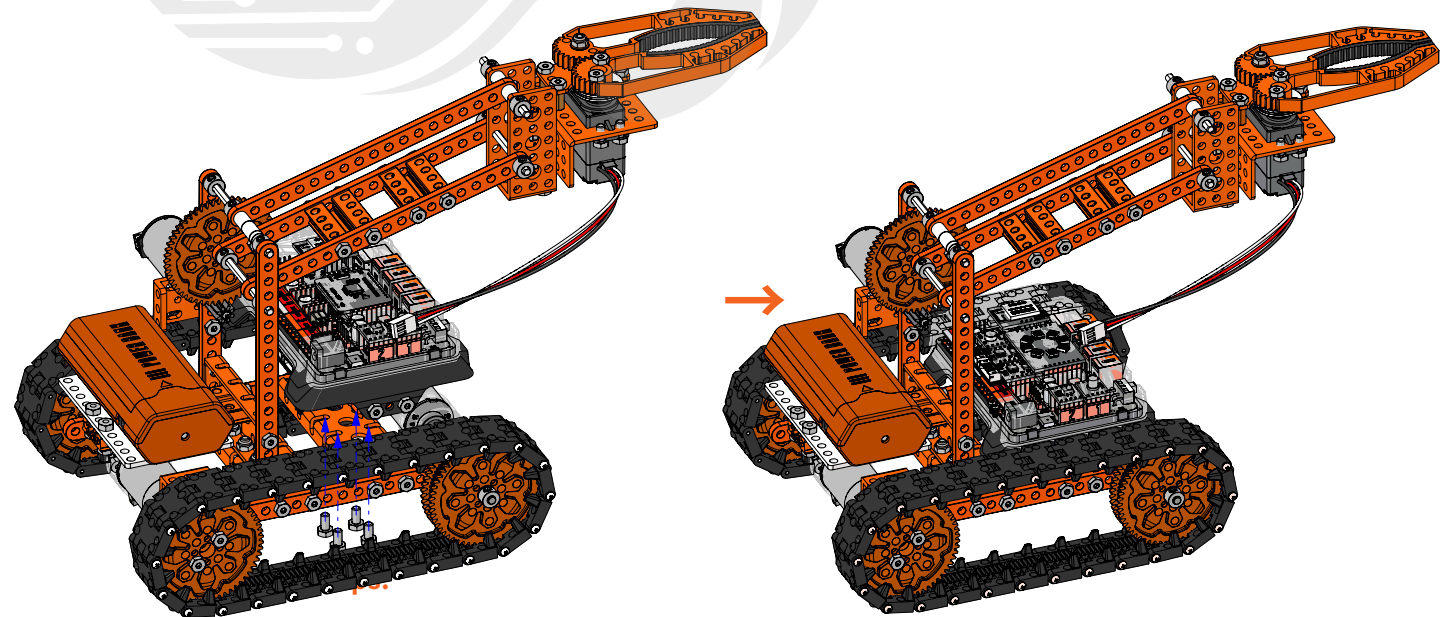
► 23: Assemble the Mainboard ELF



1xELF Mainboard Assembly



4xScrew M4*8

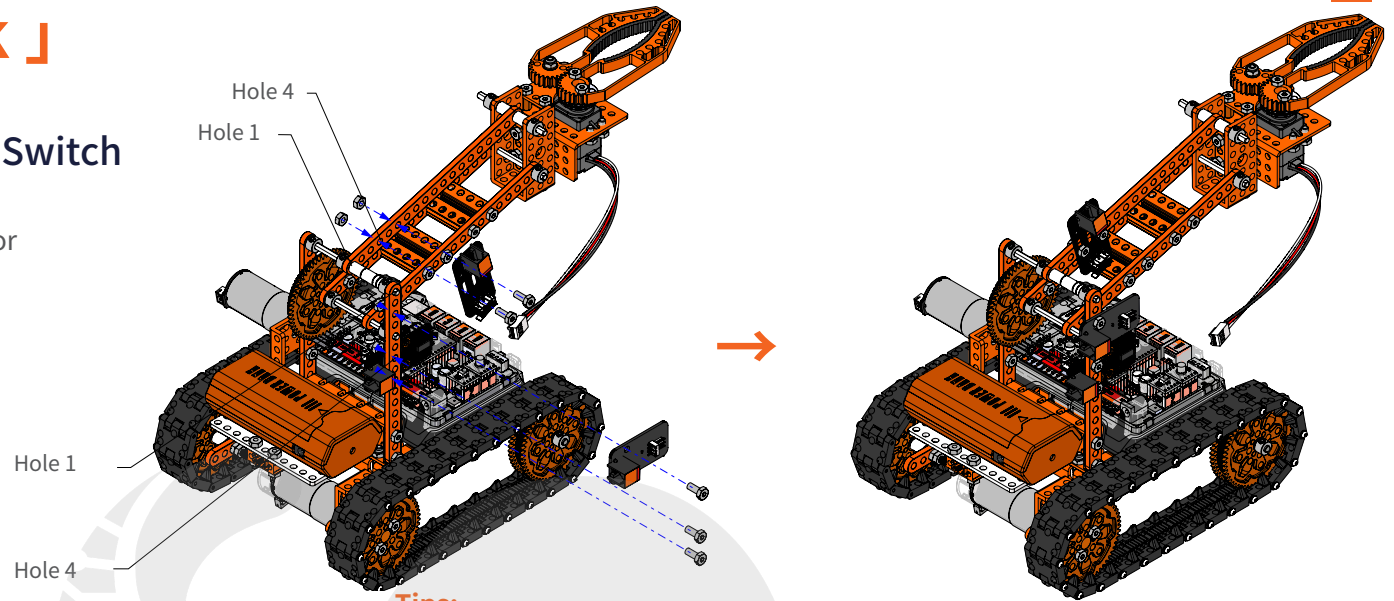


Please pay attention to the hole position and direction.

「 Robot Arm Tank 」

► 24: Assembly of the Limit Switch

-  1xDouble Way Line-following Sensor
-  1xLimit Switch
-  1x RJ11 Adapter Module
-  5xScrew M4*10
-  5xNut M4



Tips:
Please pay attention to the hole position and direction.
Adjustments are required when the limit switch is assembled.

► 25: Wiring

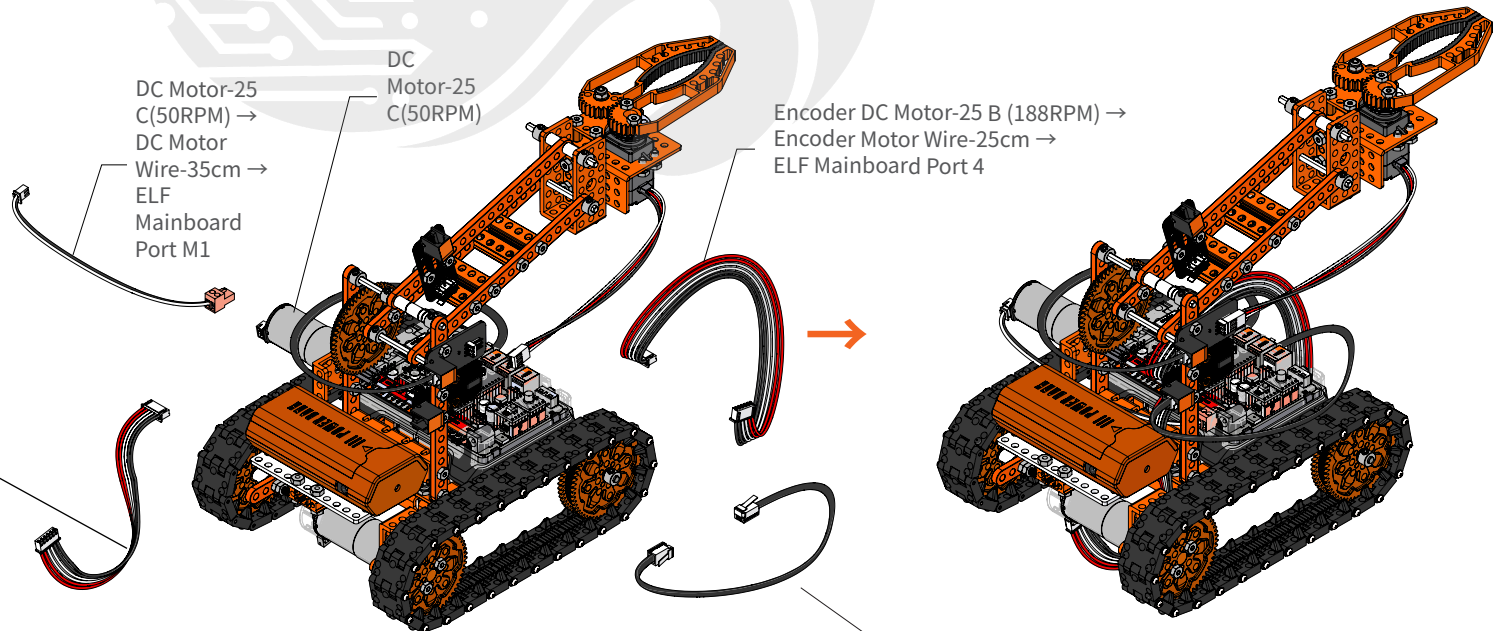
-  2xEncoder Motor Wire-25cm
-  2xDC Motor Wire-35cm
-  RJ11 Cable-20cm

Encoder DC Motor-25 A (188RPM) →
Encoder Motor Wire-25cm →
ELF Mainboard Port 3

DC Motor-25
C(50RPM) →
DC Motor
Wire-35cm →
ELF
Mainboard
Port M1

DC
Motor-25
C(50RPM)

Encoder DC Motor-25 B (188RPM) →
Encoder Motor Wire-25cm →
ELF Mainboard Port 4



Double Way Line-following
Sensor →
RJ11 Cable-20 cm → Port B

「 Robot Arm Tank 」

► 25: Wiring



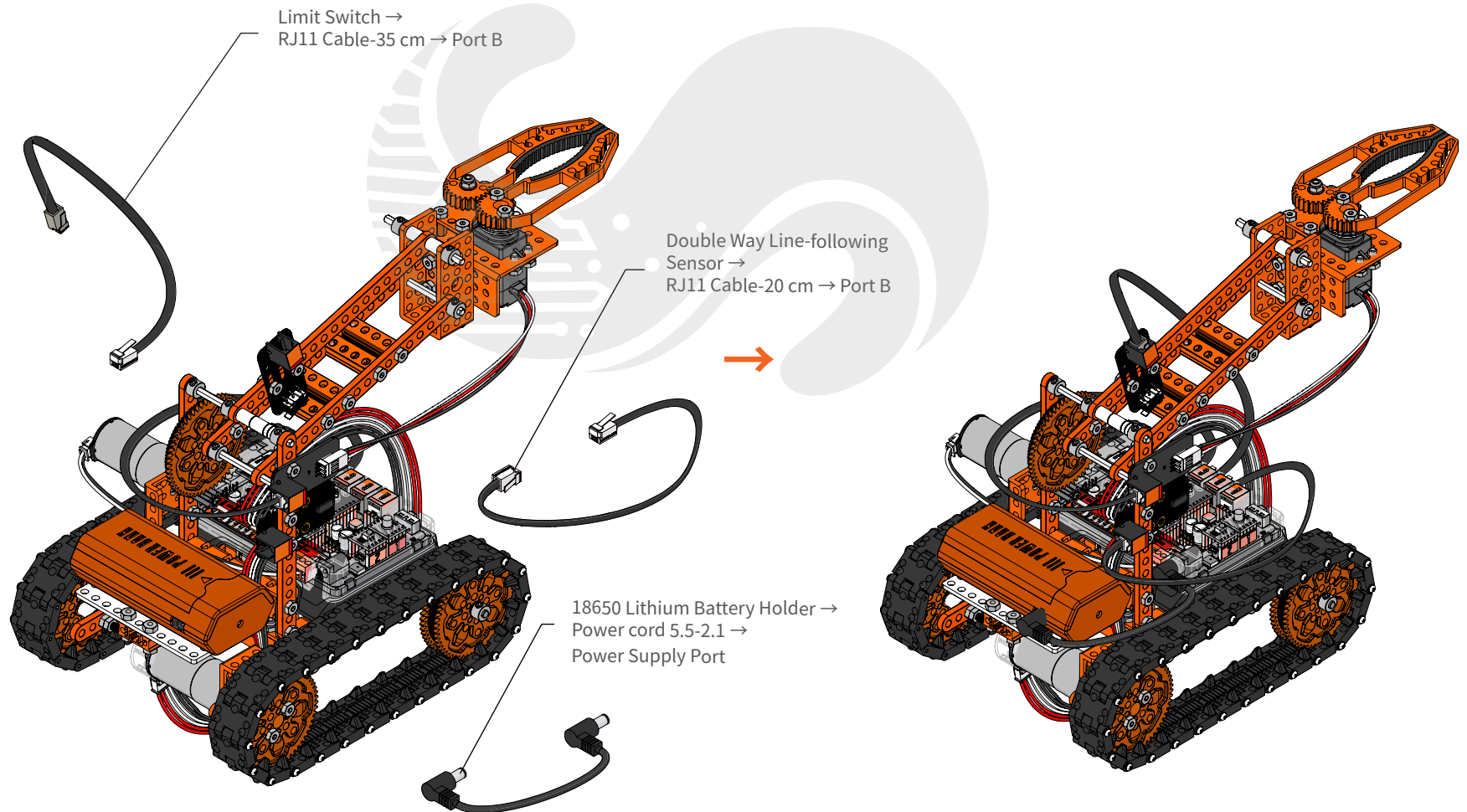
1x4P4C RJ11 Cable -20cm



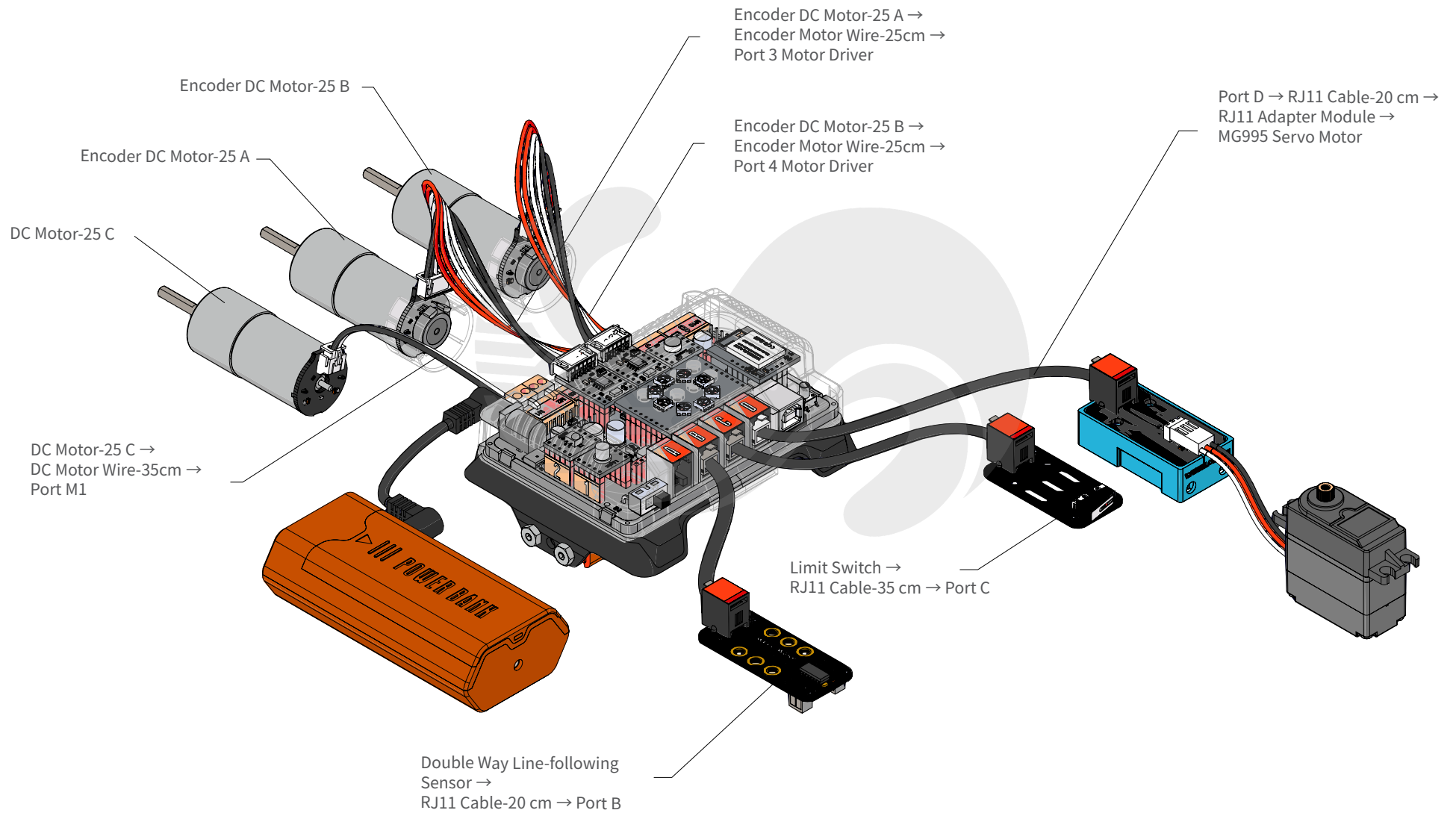
1x4P4C RJ11 Cable -35cm



1xPower cord 5.5-2.1



「 Wiring 」



「 Completion Diagram 」

