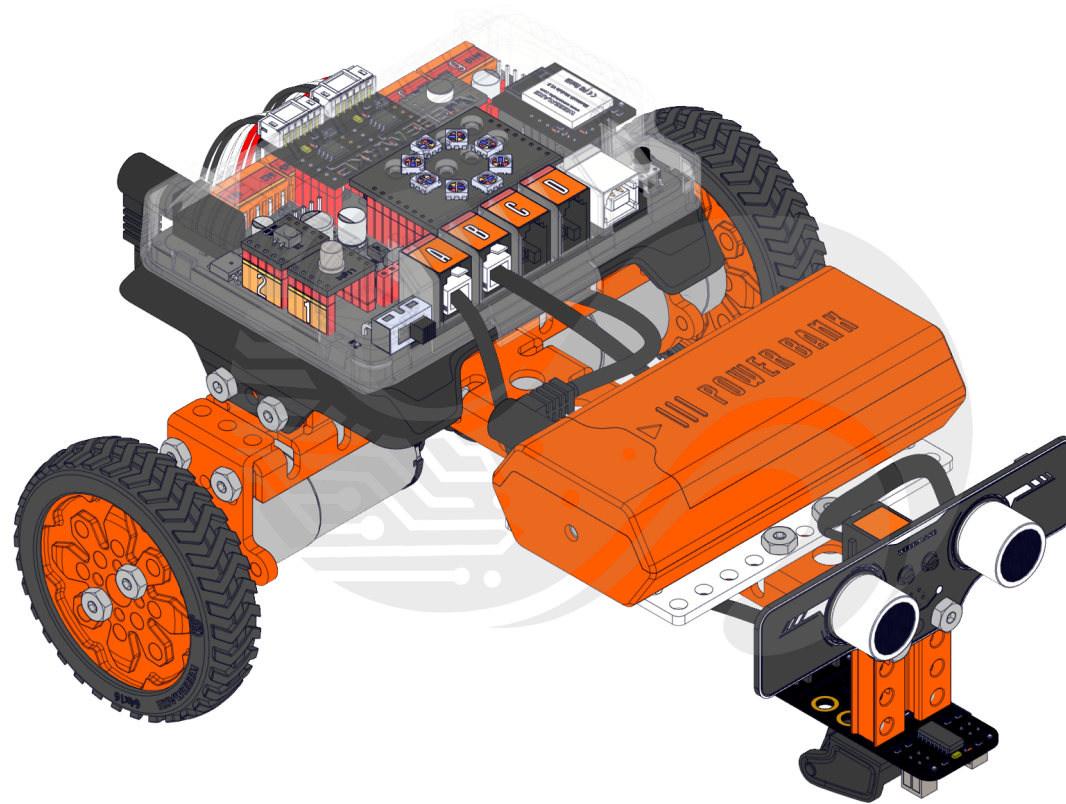


「 Chapter 10 3-Wheel Robot 」



0.Common Module Installation—Assembly Guide of Mainboard ELF



1x 328P MicroChip Module V1.0



1x WeeeMake Bluetooth 4.1 Module



1x Light Sensor (Pin)



1x IR Sensor (Pin)



1x Sound Sensor (Pin)



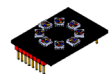
1x ELF Mainboard



1x ELF Mainboard Lid



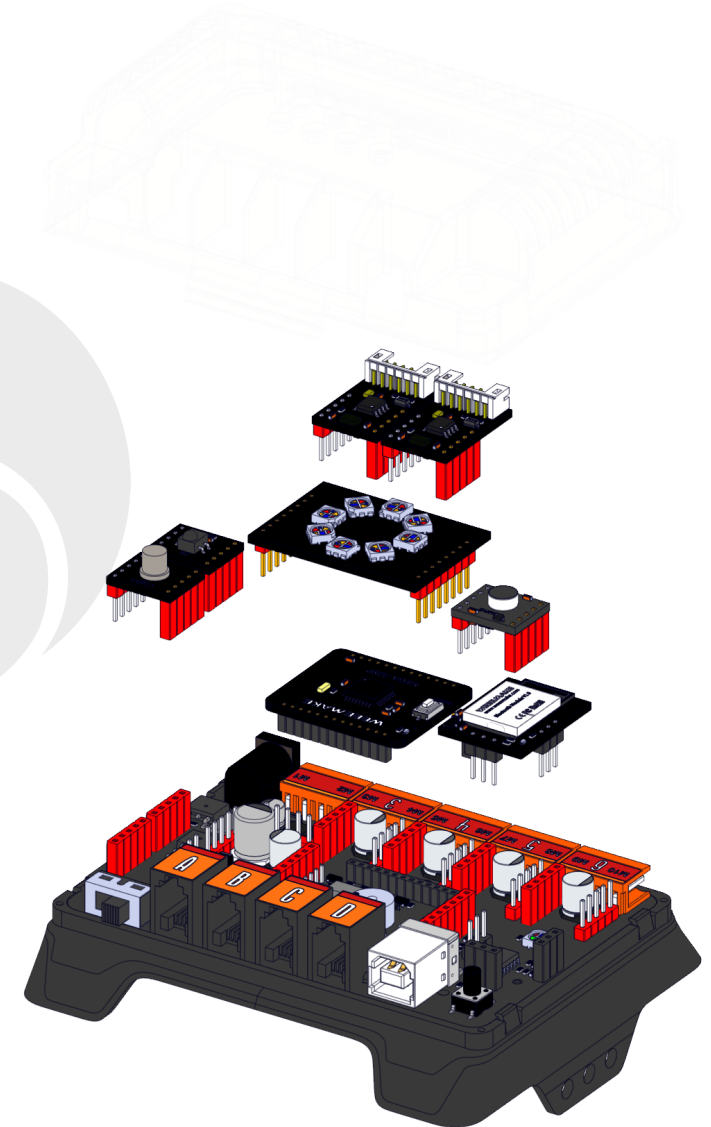
1x ELF Mainboard Base



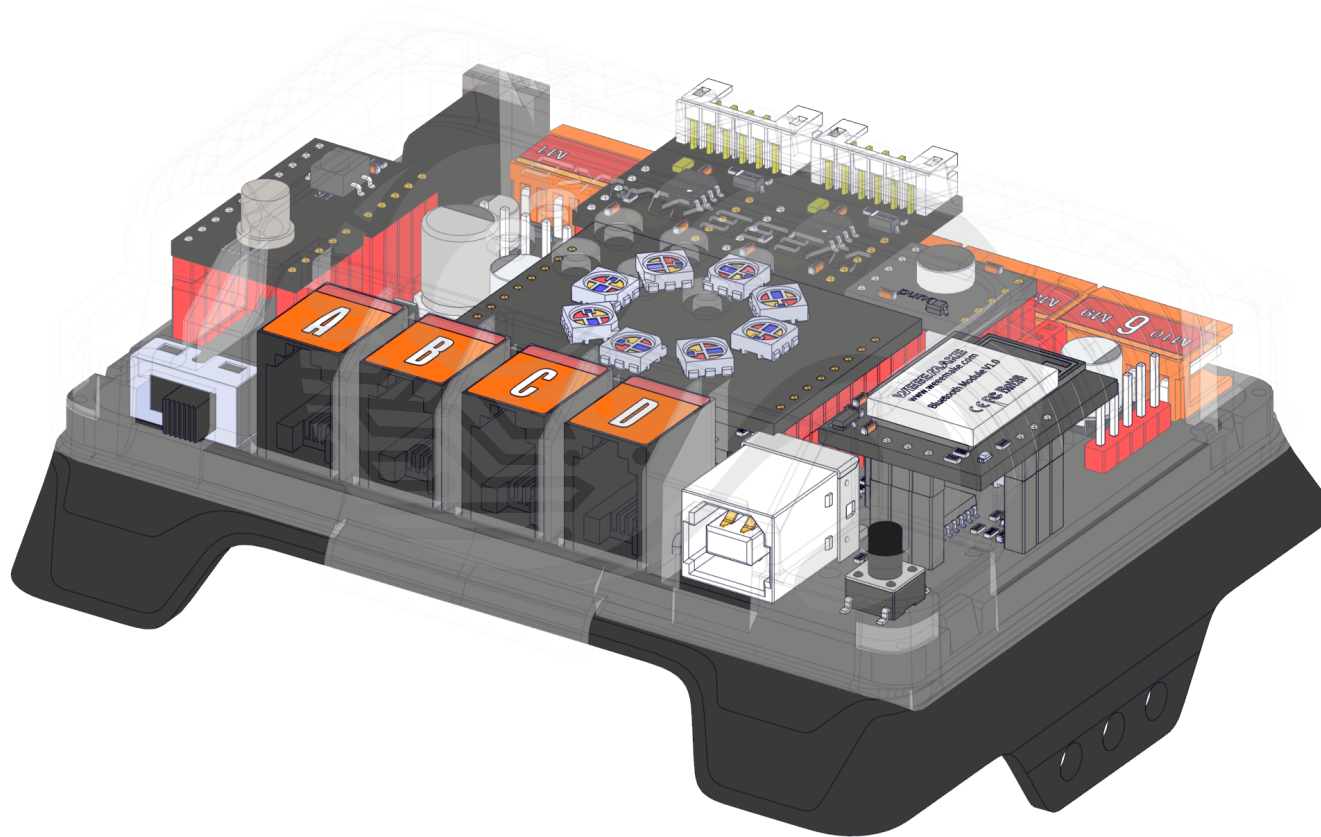
1x RGB LED - 8 (Pin)



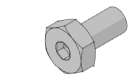
2x DC/Encoder Motor Driver



0.Common Module Installation—Assembly Guide of Mainboard ELF



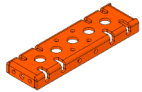
0.Common Module Installation—Assembly Guide of Mainboard ELF



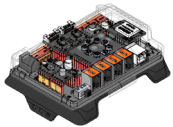
4xScrew M4*8



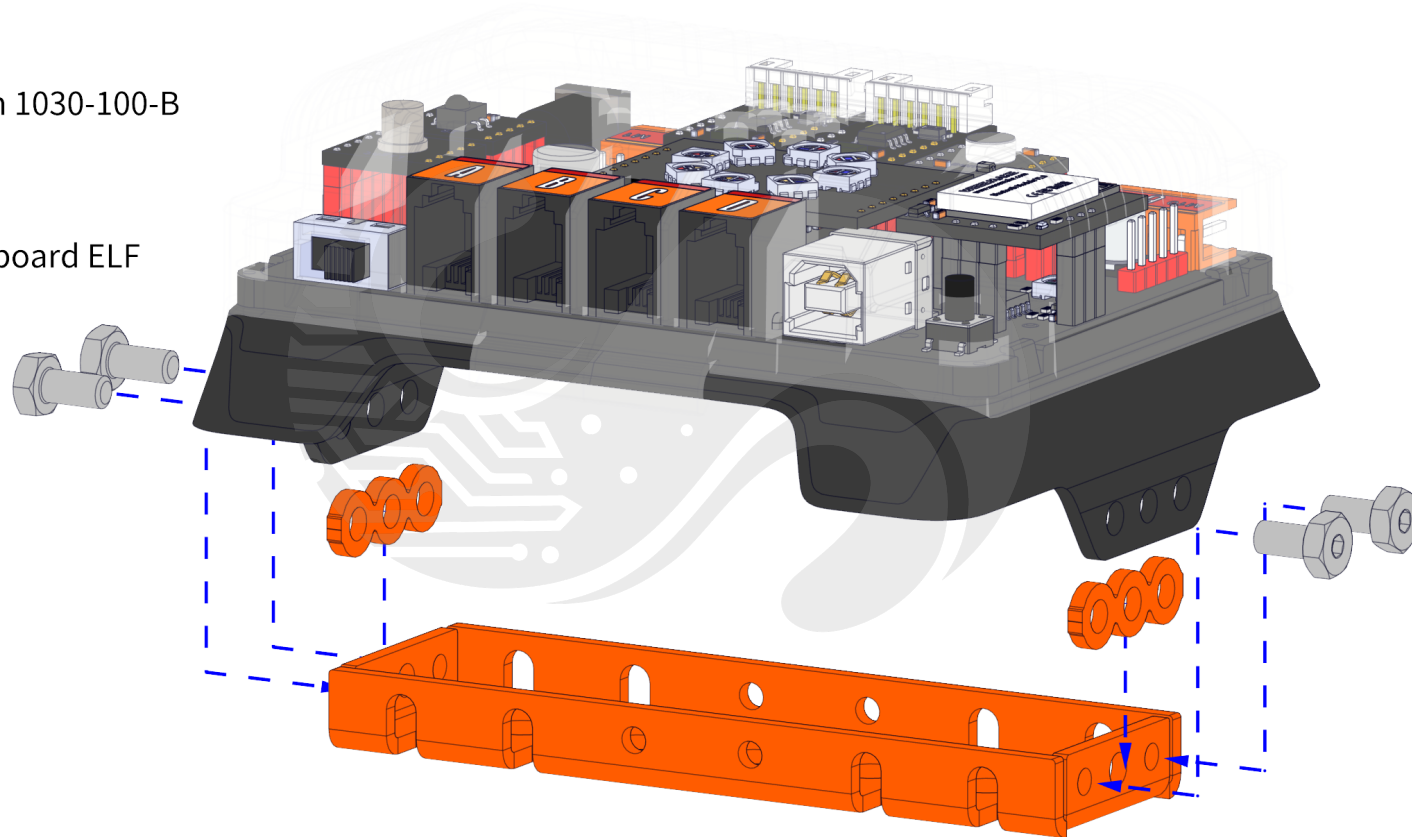
2xLinkage 0208-24



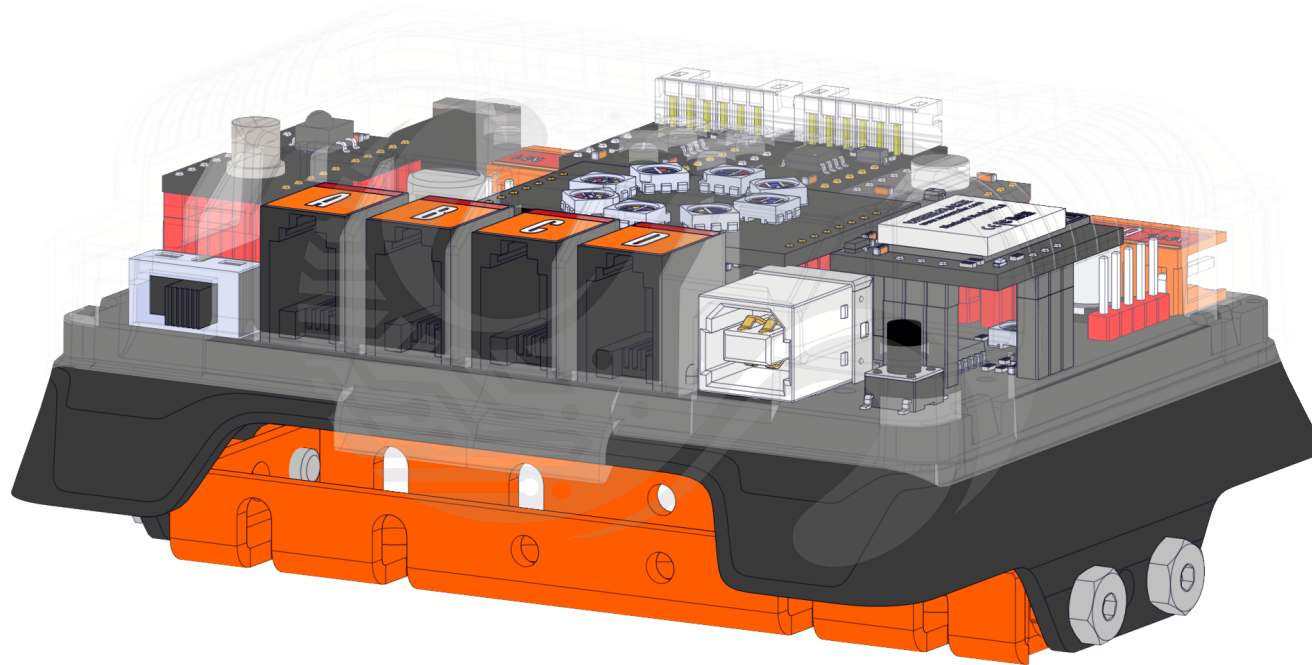
1xBeam 1030-100-B



1xMainboard ELF



0.Common Module Installation—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

1.Assemble Encoder DC Motor-25



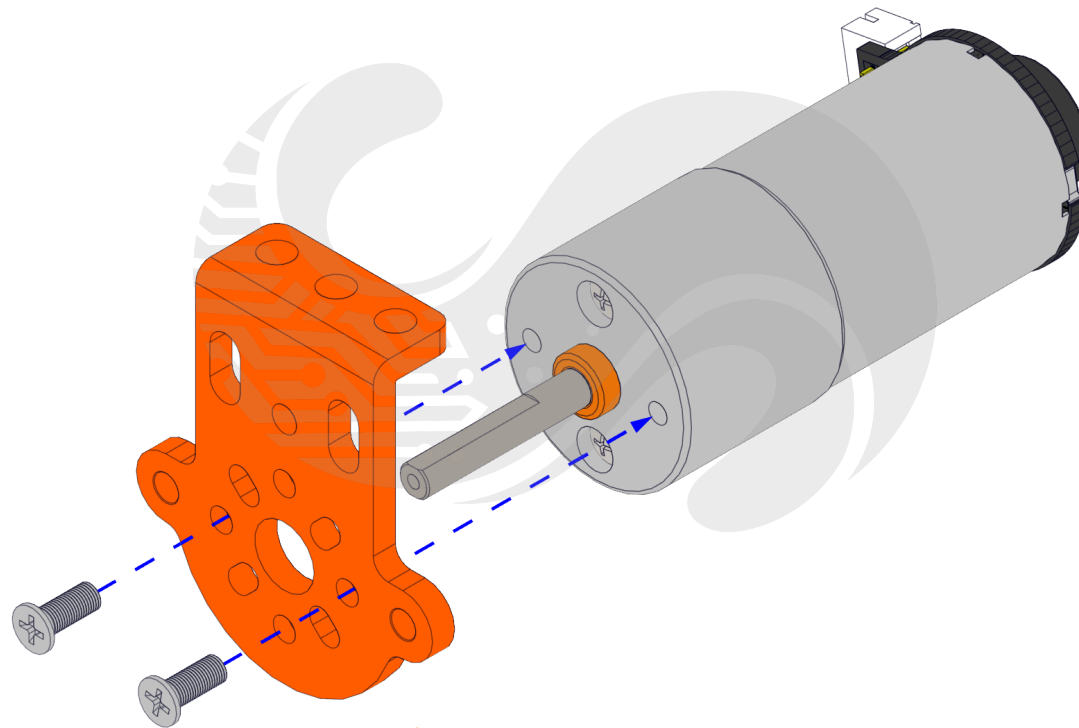
2xCountersunk Head Screw M3*6



1x25 Motor Bracket

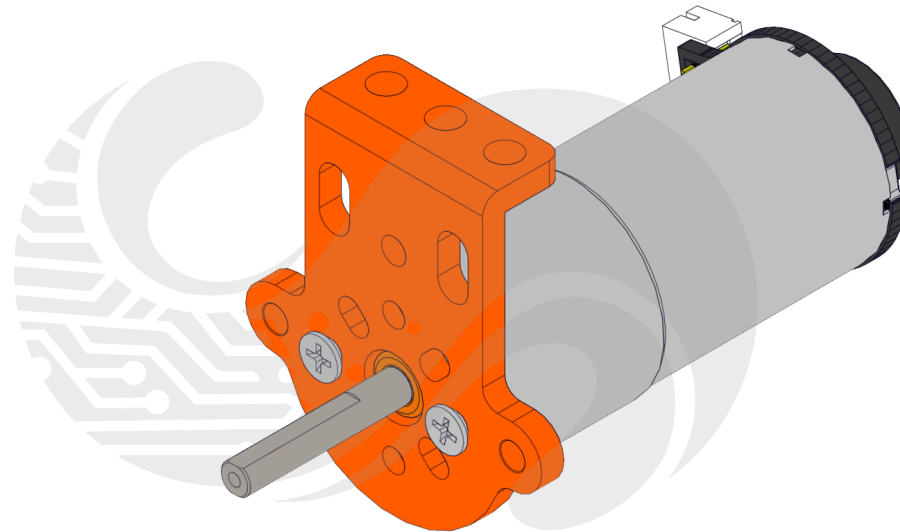


1xEncoder DC Motor-25 9V188RPM



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

1.Assemble Encoder DC Motor-25



×2

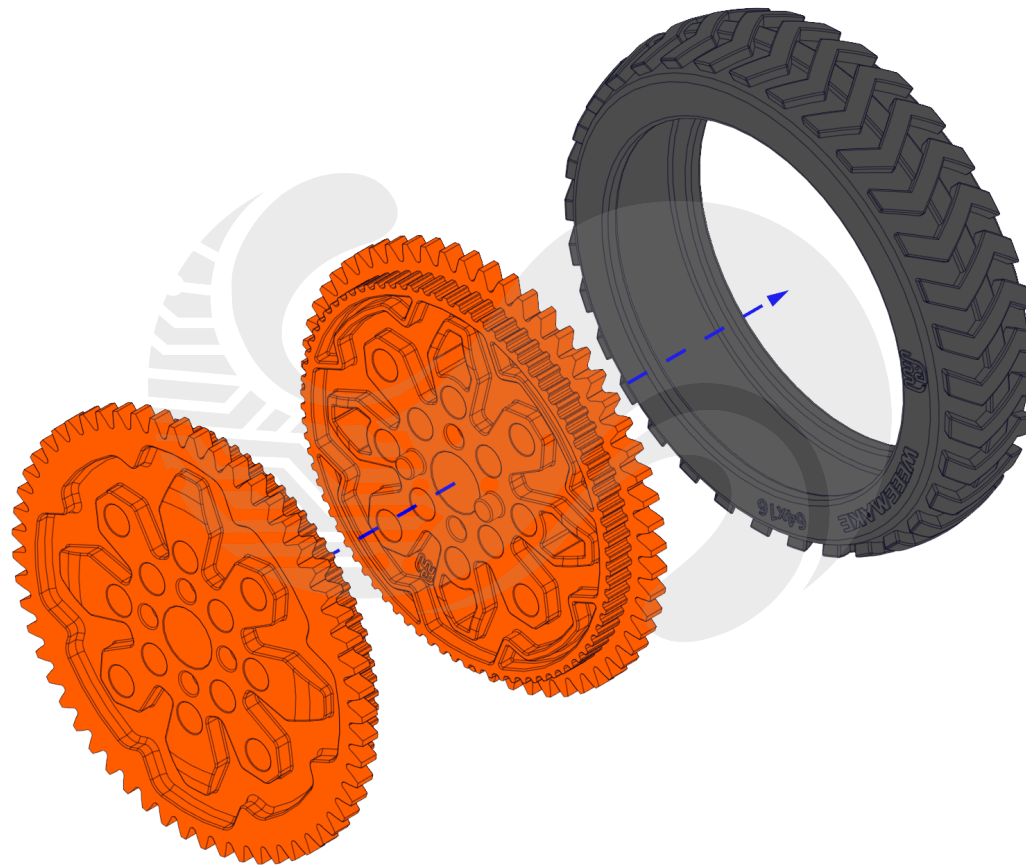
2.Assemble Wheel



2x56T-Plastic Gear



1xTyre 64*16



Engage two 56T plastic gear with each other to assemble a 56T wheel hub and then load the tyre.

2.Assemble Wheel



× 2

3.Assemble Flange Hub



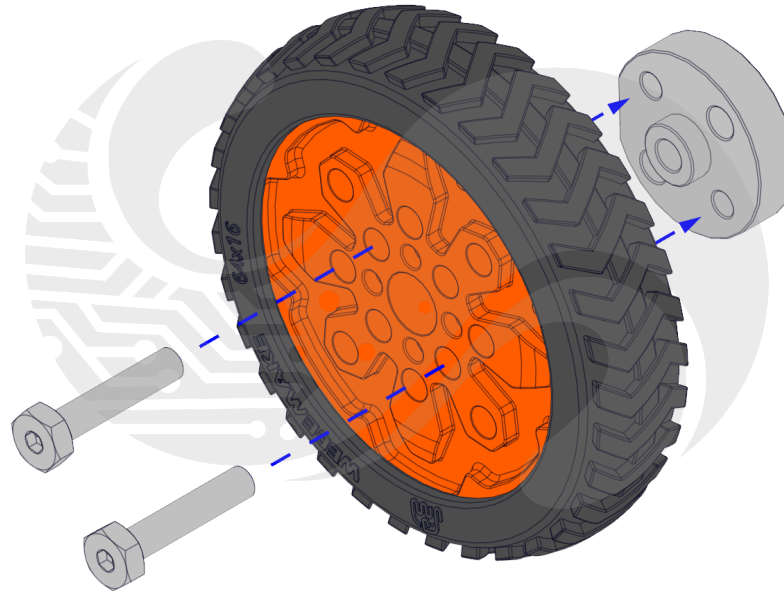
2xScrew M4*20



1xDriving Flange Hub 4mm



1xWheel assembly



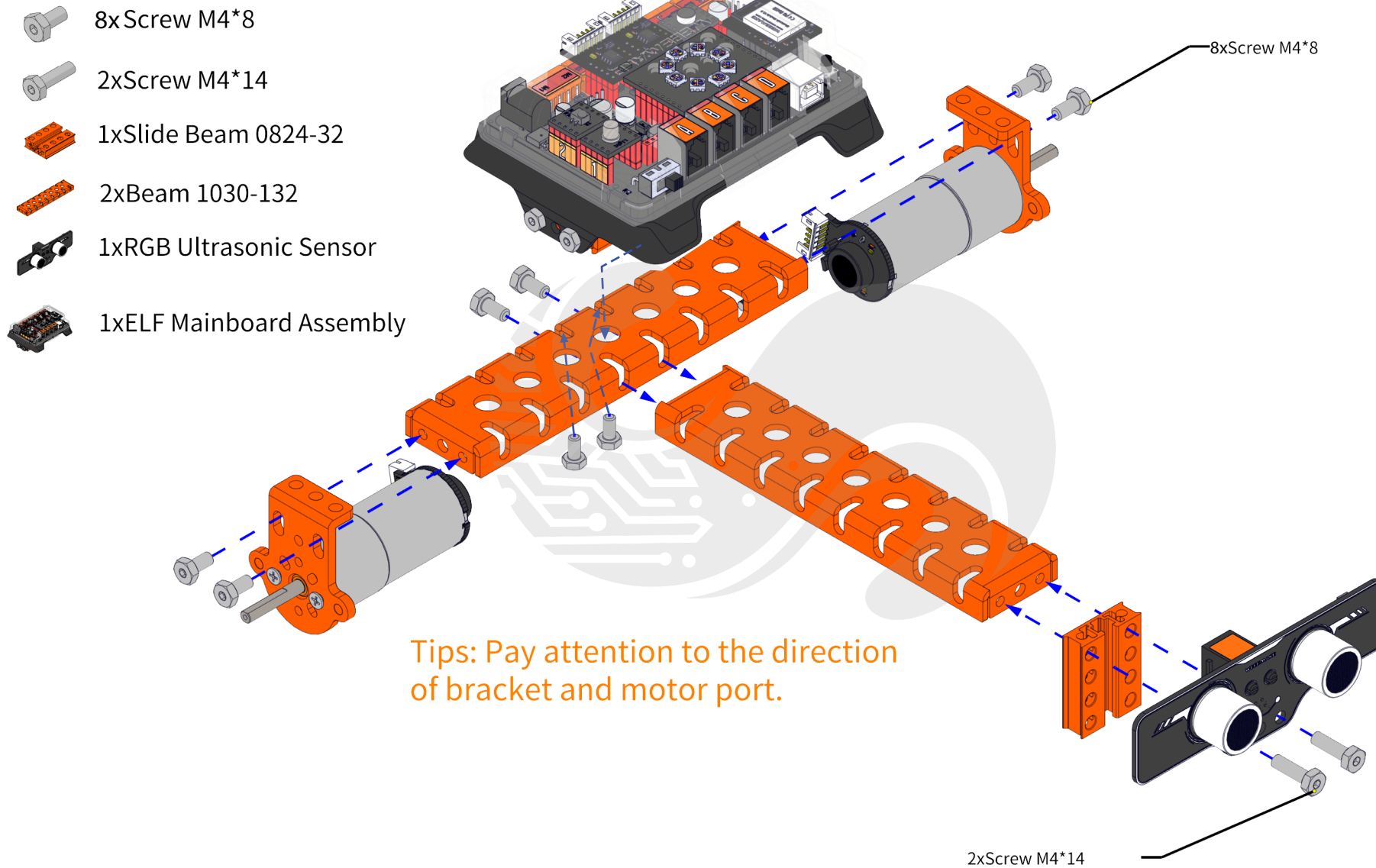
3.Assemble Flange Hub



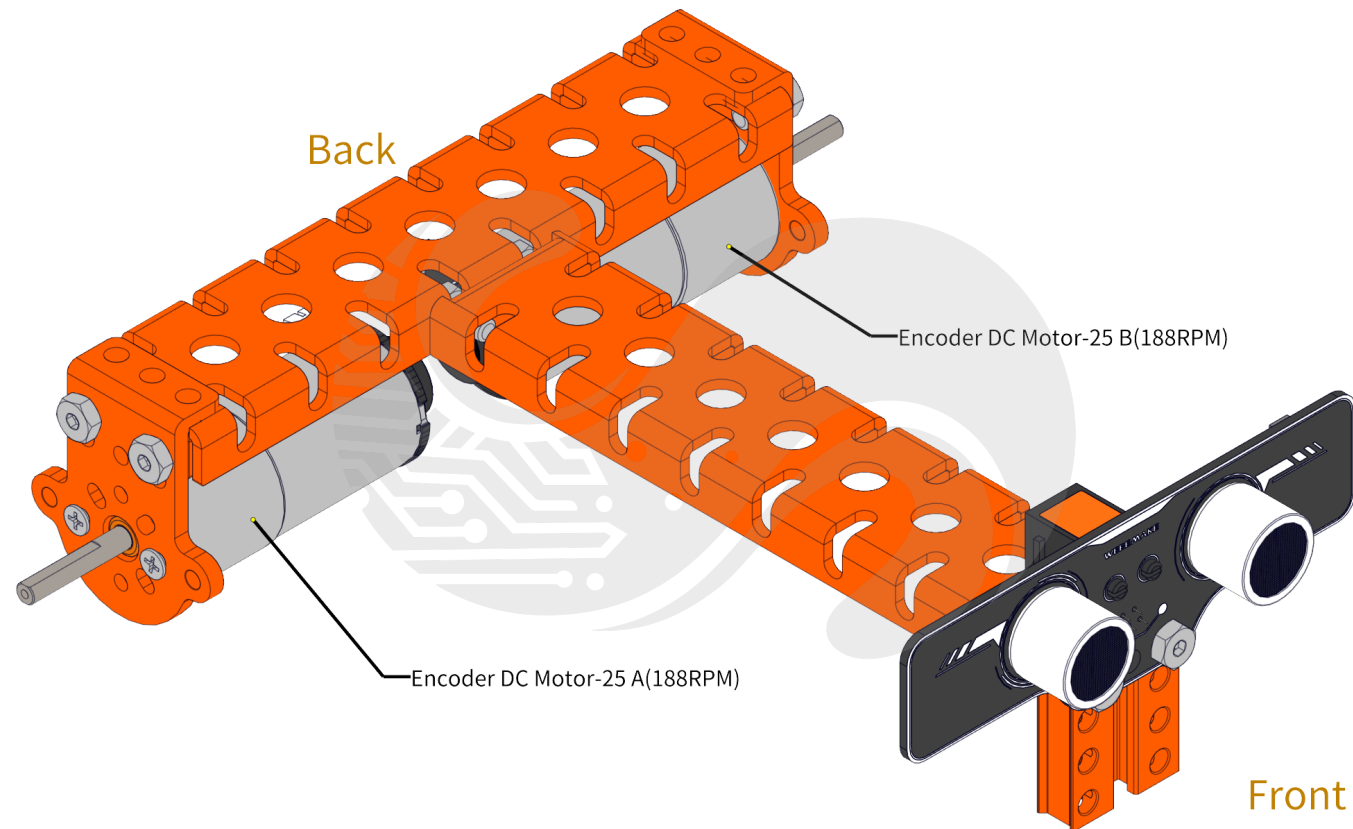
Reference view

× 2

4.Assemble Base Structure



4.Assemble Base Structure





LEGO Technic Part 1



er 4*7*10

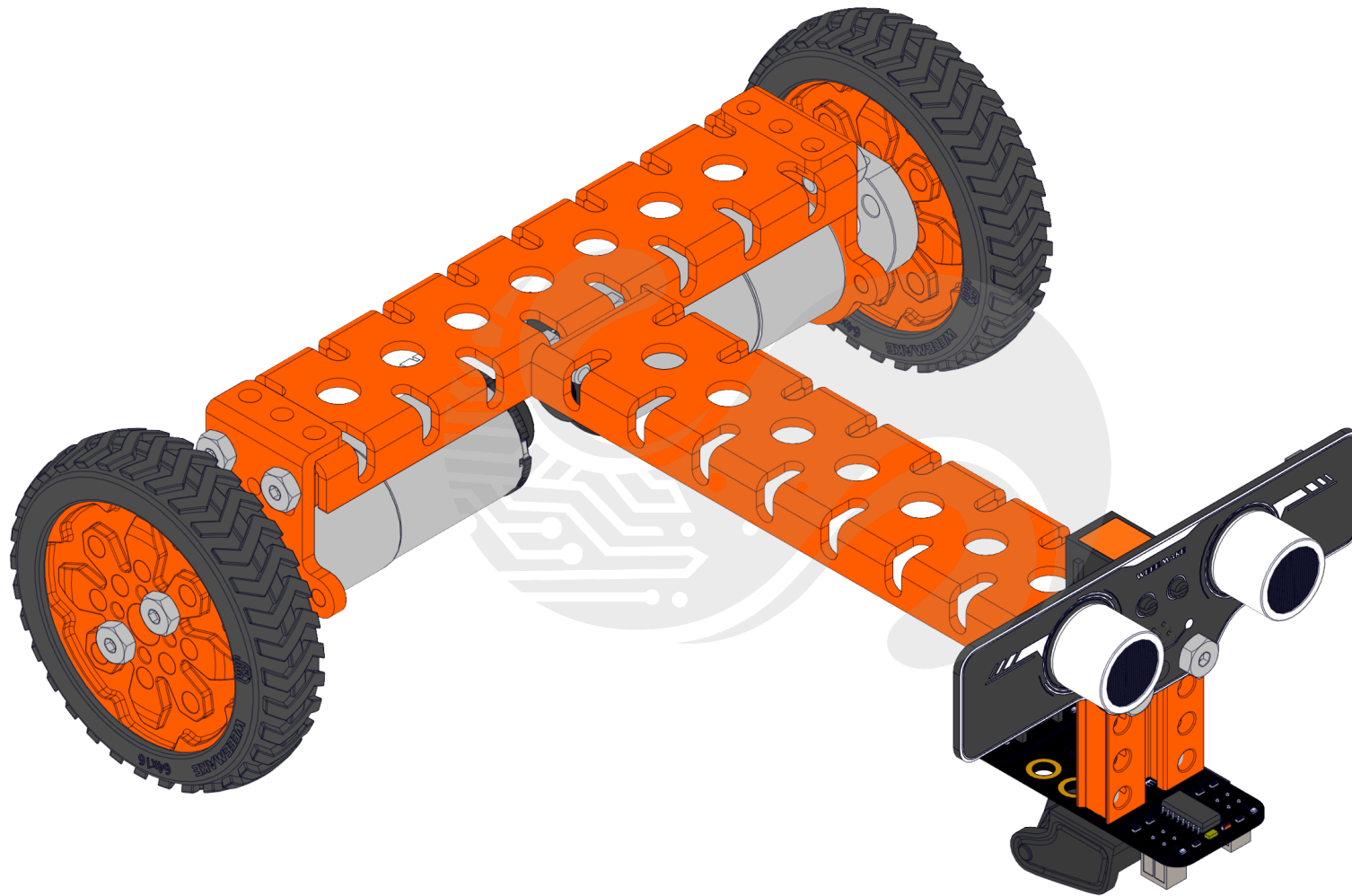
er

Line-following Sensor

assembly

This exploded view diagram illustrates the assembly of a line-following robot. The central component is a long orange Technic beam (1x15) with two grey DC motors mounted on it. Two black wheels with orange hubs are attached to the ends of the beam. A black line-following sensor module is positioned at the front of the robot. The sensor module consists of a black PCB with four yellow infrared LEDs, a black sensor housing, and a black sensor cable. The sensor is shown being attached to the front of the robot using a black Technic connector and a black Technic pin. The background features a faint, stylized circuit board pattern.

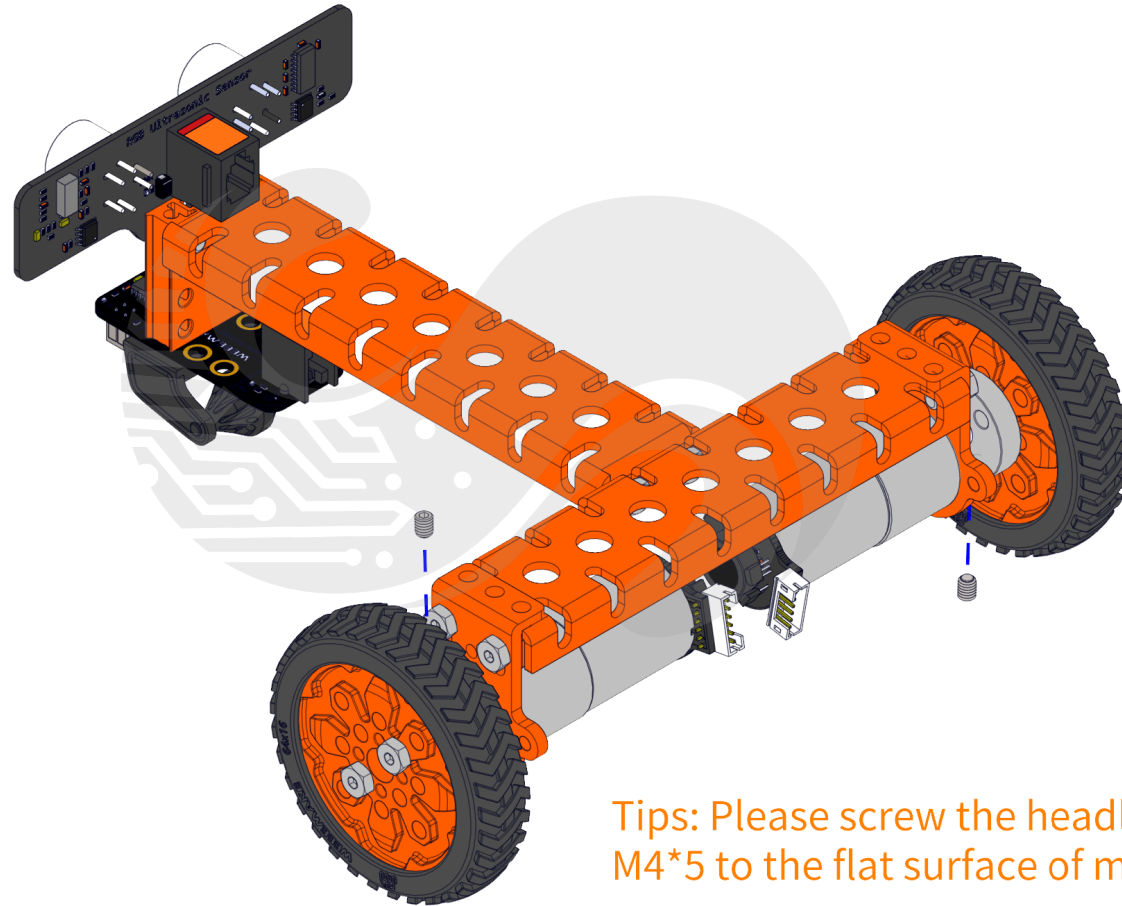
5. Assemble Wheel and Double-way Line-following Sensor



6. Fix Wheel

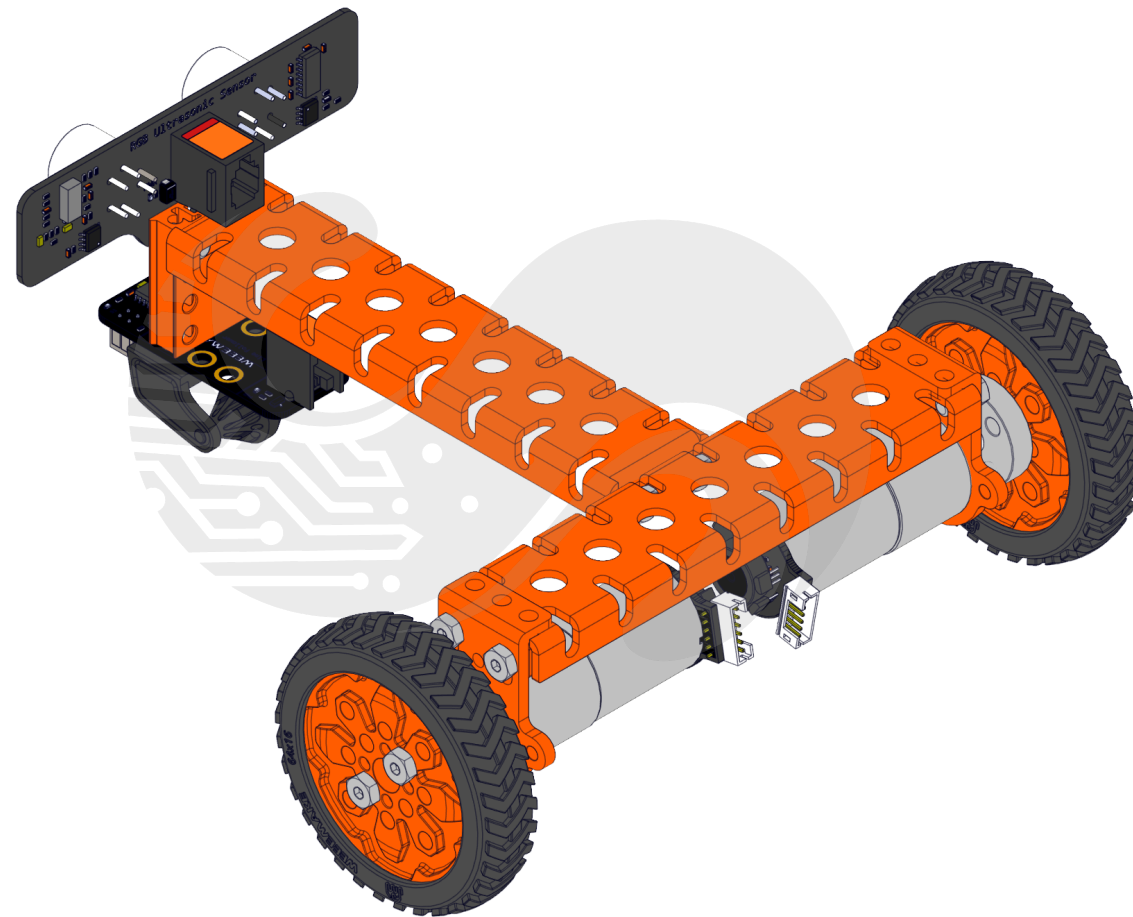


2xHeadless Screw M4*5

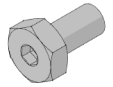


Tips: Please screw the headless screw M4*5 to the flat surface of motor shaft.

6. Fix Wheel



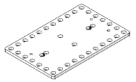
7.Assemble Mainboard ELF and Acrylic mini Bracket



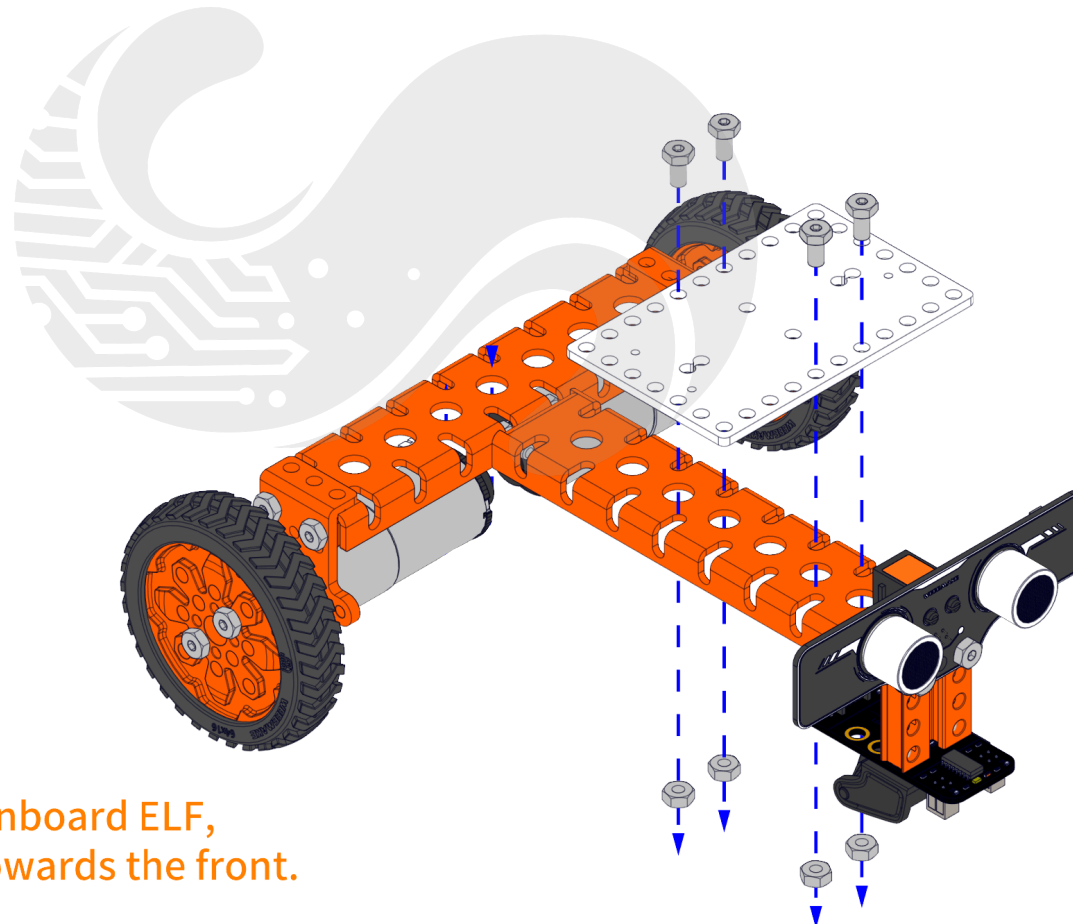
4xScrew M4*8



4xScrew Nut M4

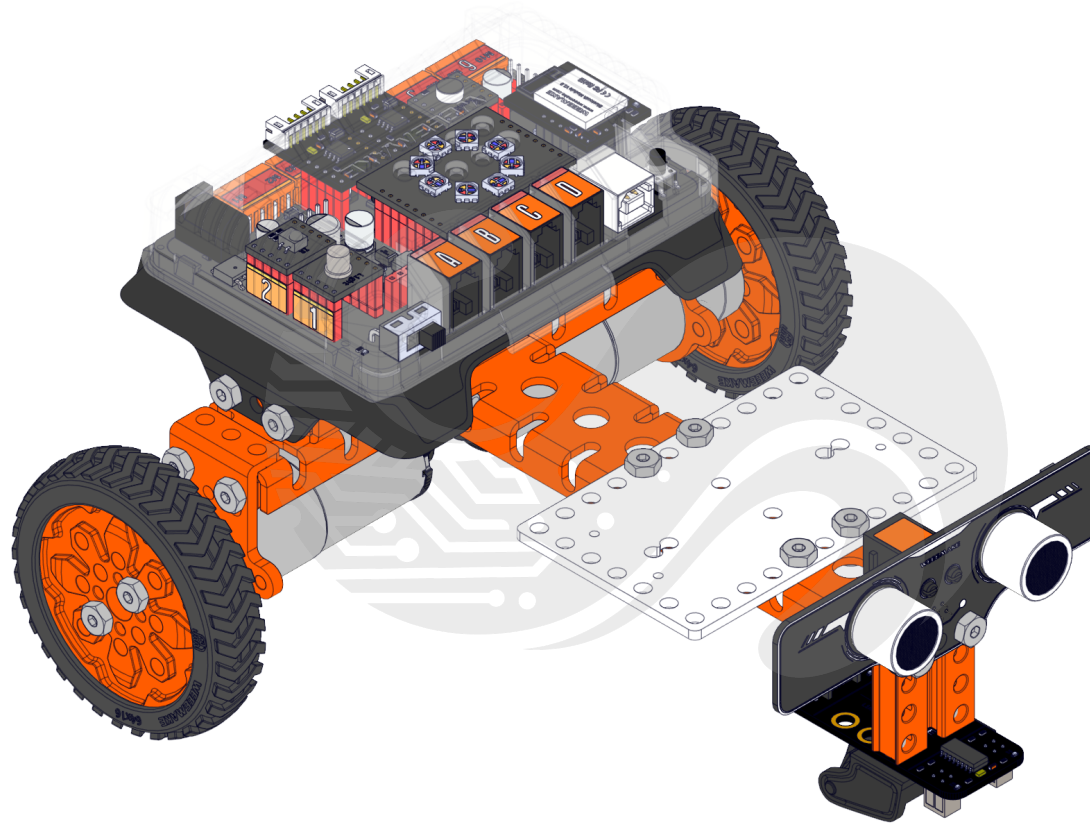


1xELF mini Acrylic Bracket



Note: While fixing the mainboard ELF,
make the USB interface towards the front.

7. Assemble Mainboard ELF and Acrylic mini Bracket



8.Assemble 18650 Lithium Battery



2xScrew M4*8



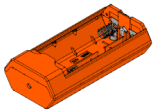
2xScrew Nut M4



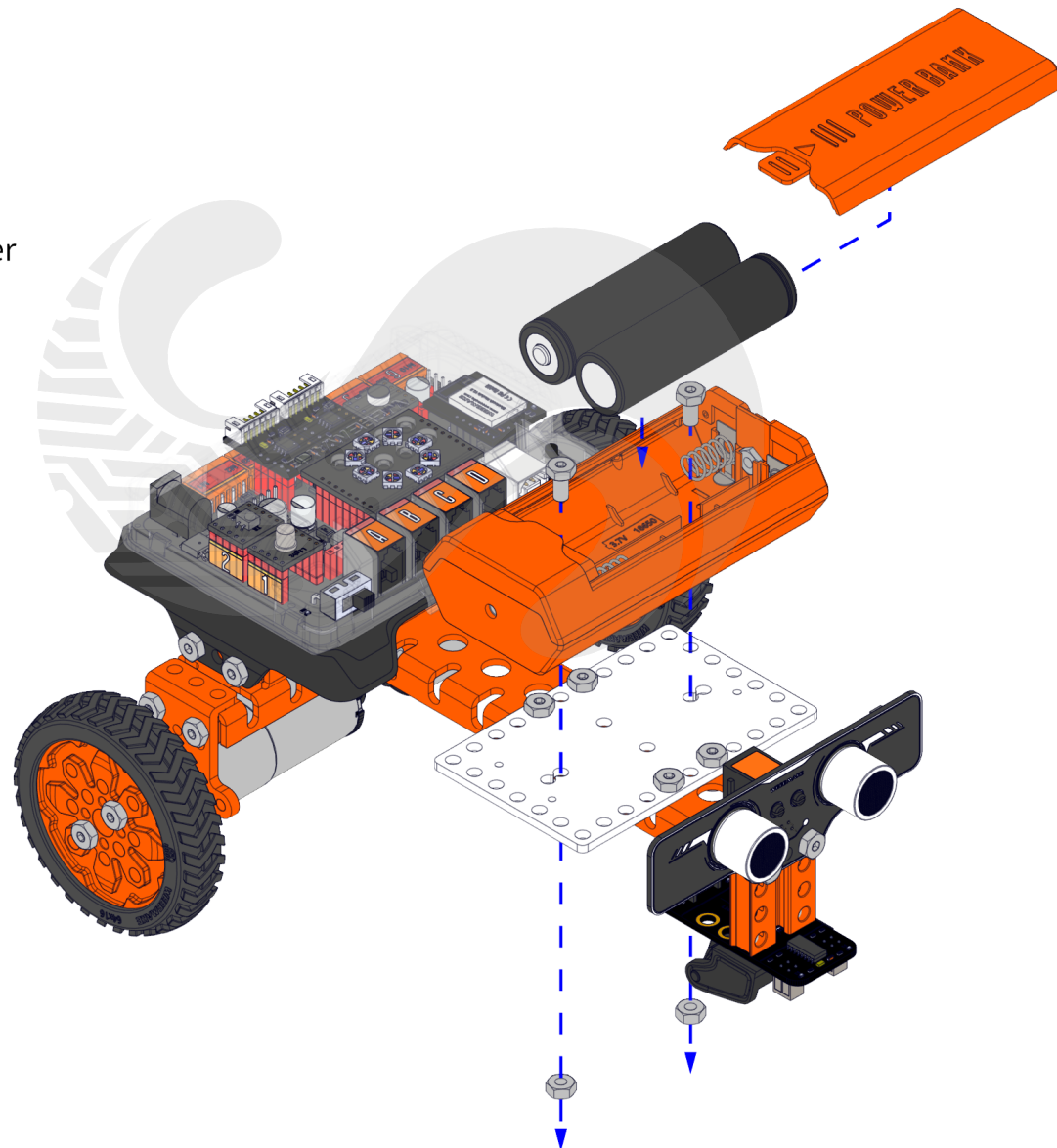
2x18650 Lithium Battery



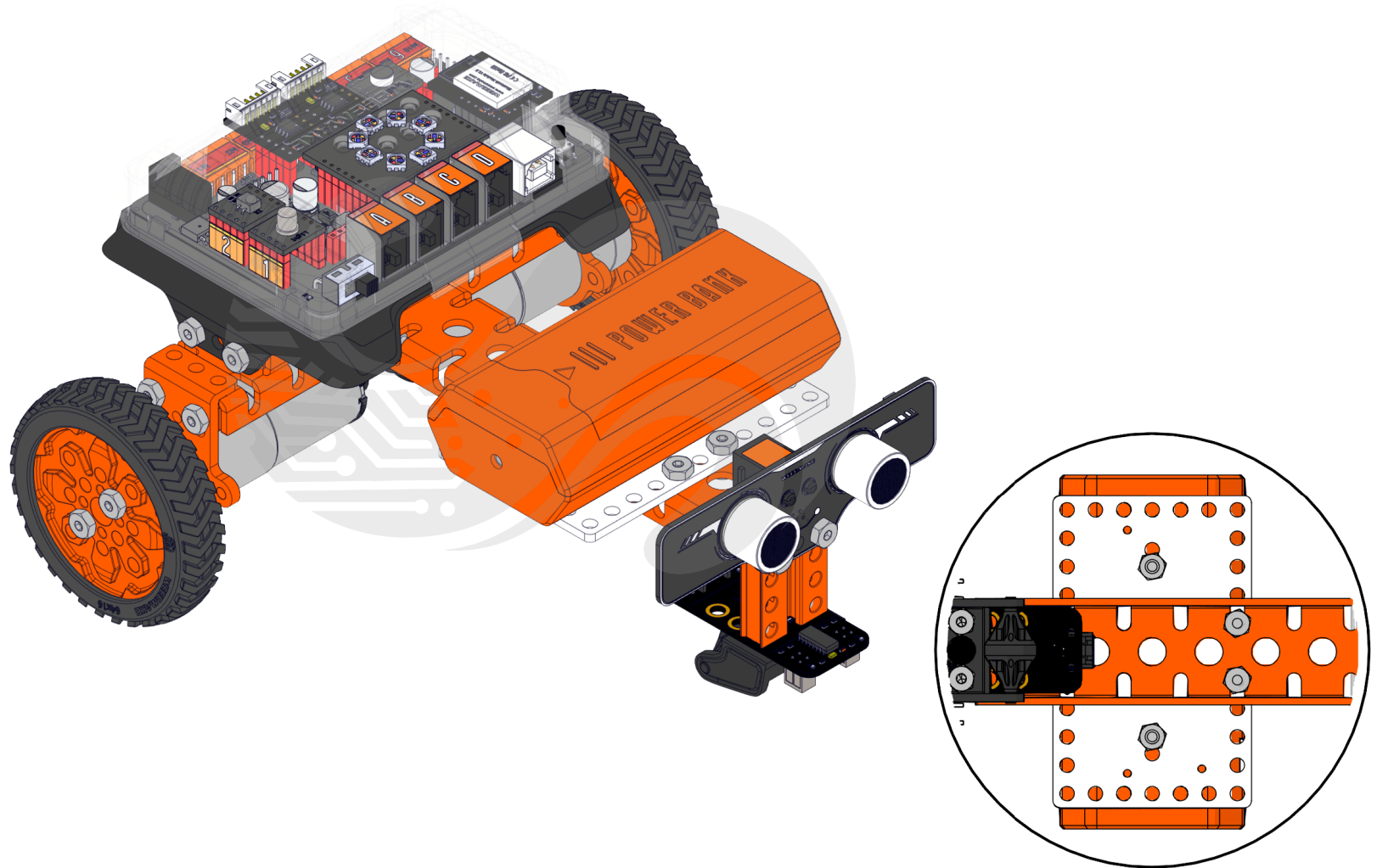
1x18650 Battery Holder Cover



1x18650 Battery Holder



8.Assemble 18650 Lithium Battery



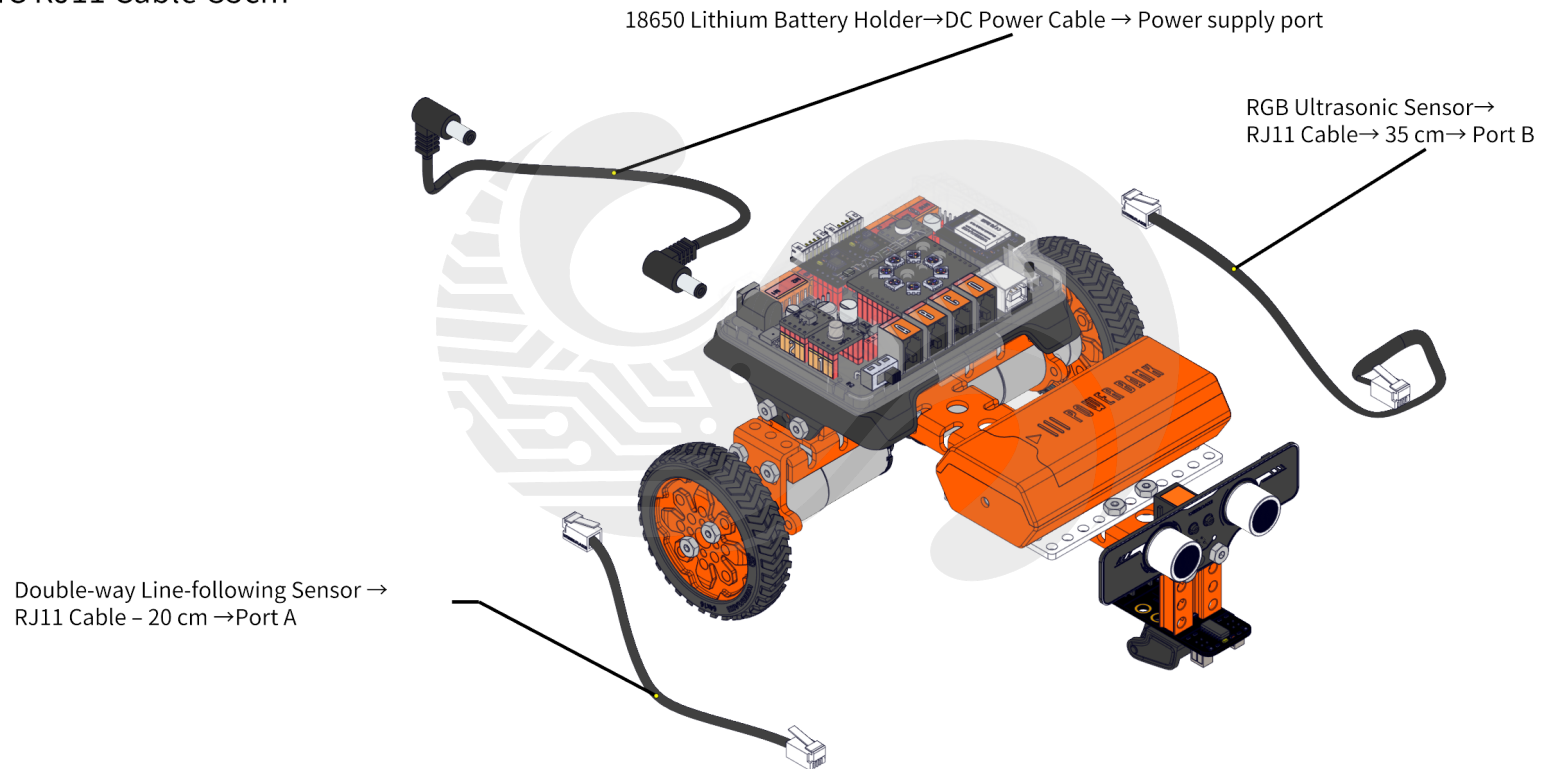
Reference view

9.Wiring

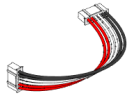
1x5.5-2.1 DC Power Cable-20cm

2x4P4C RJ11 Cable-20cm

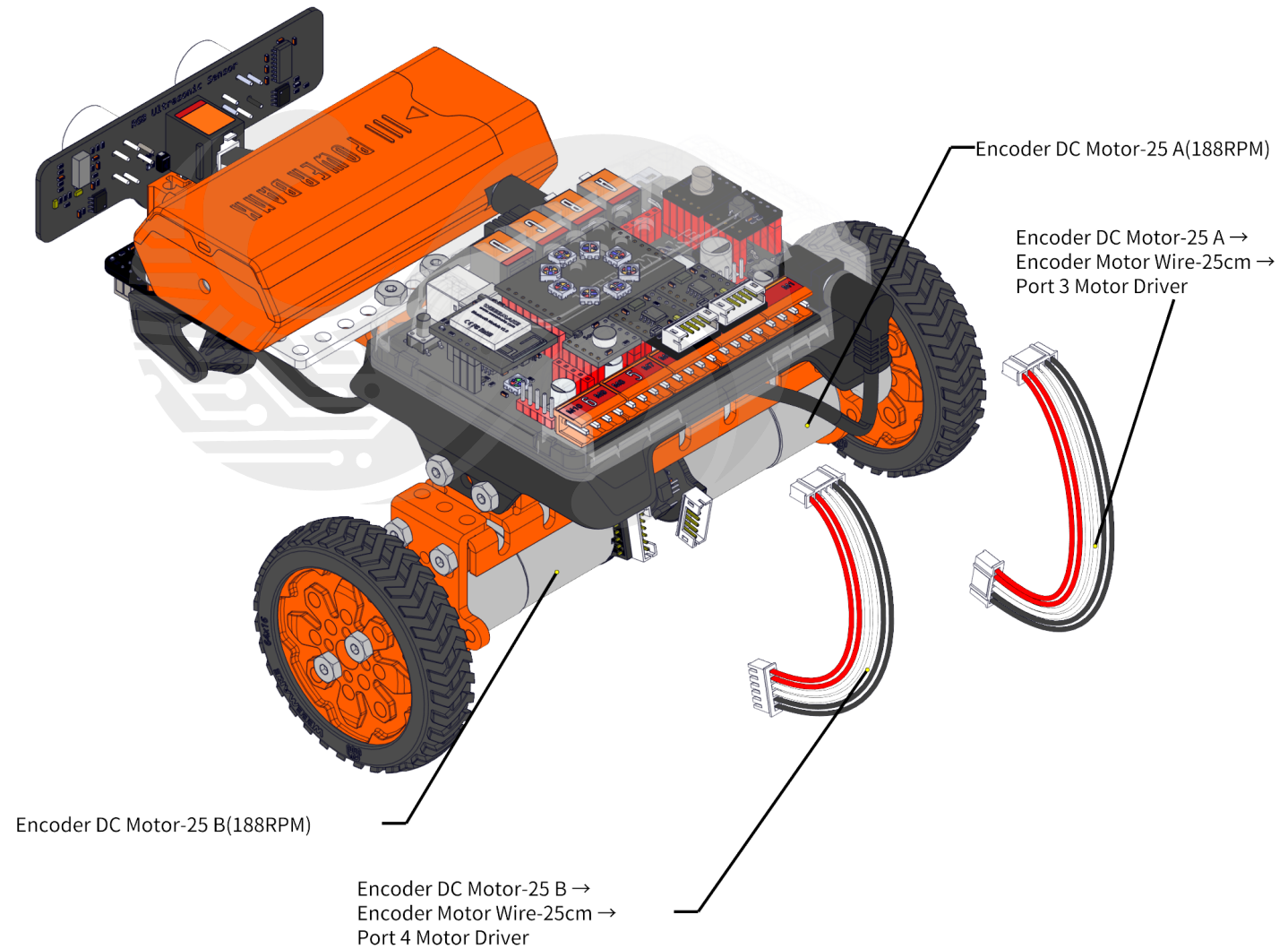
2x4P4C RJ11 Cable-35cm



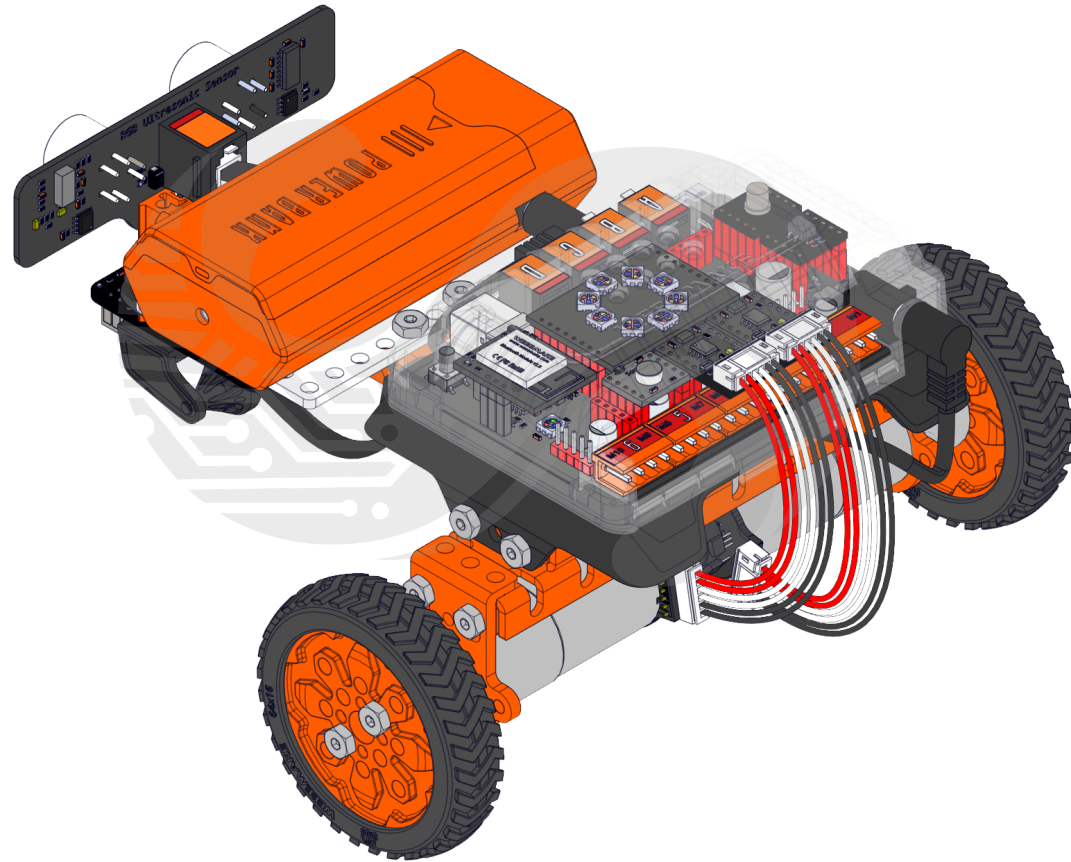
9.Wiring



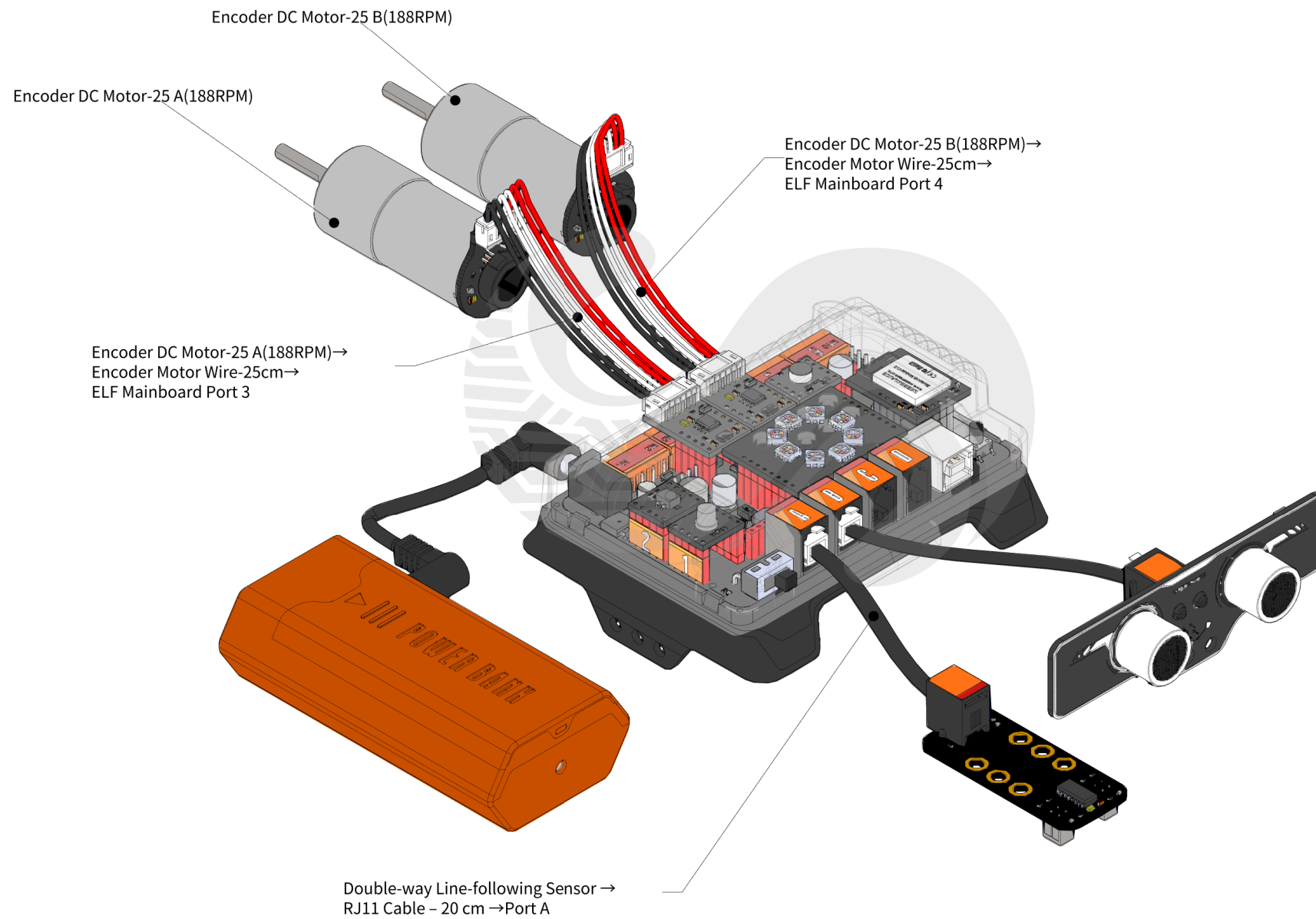
2xEncoder Motor Wire-25cm



9.Wiring



10.Wiring



11.Completion Diagram

