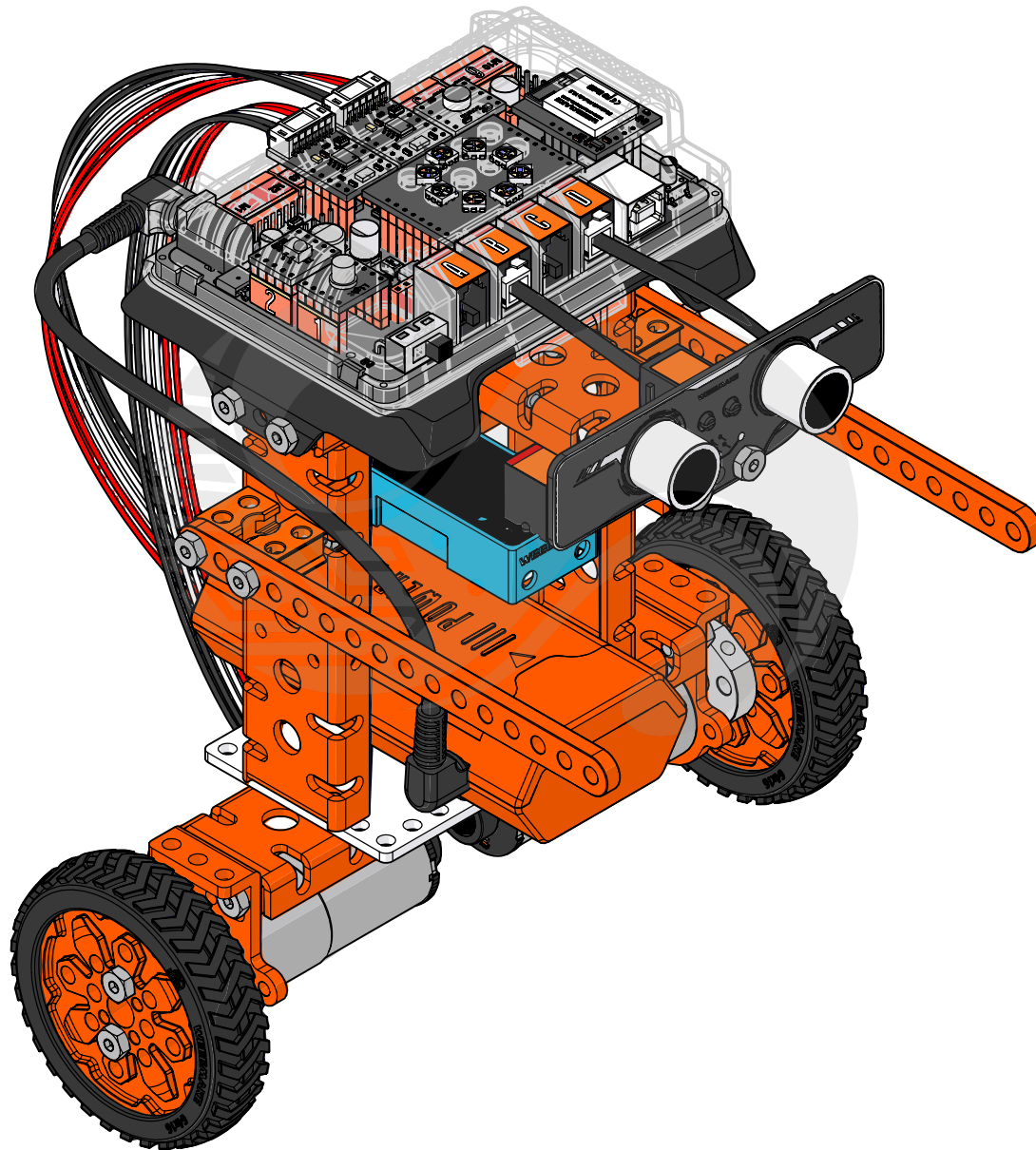


「 Chapter 5 Self-balancing Robot 」



「 Self-balancing Robot 」

► 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



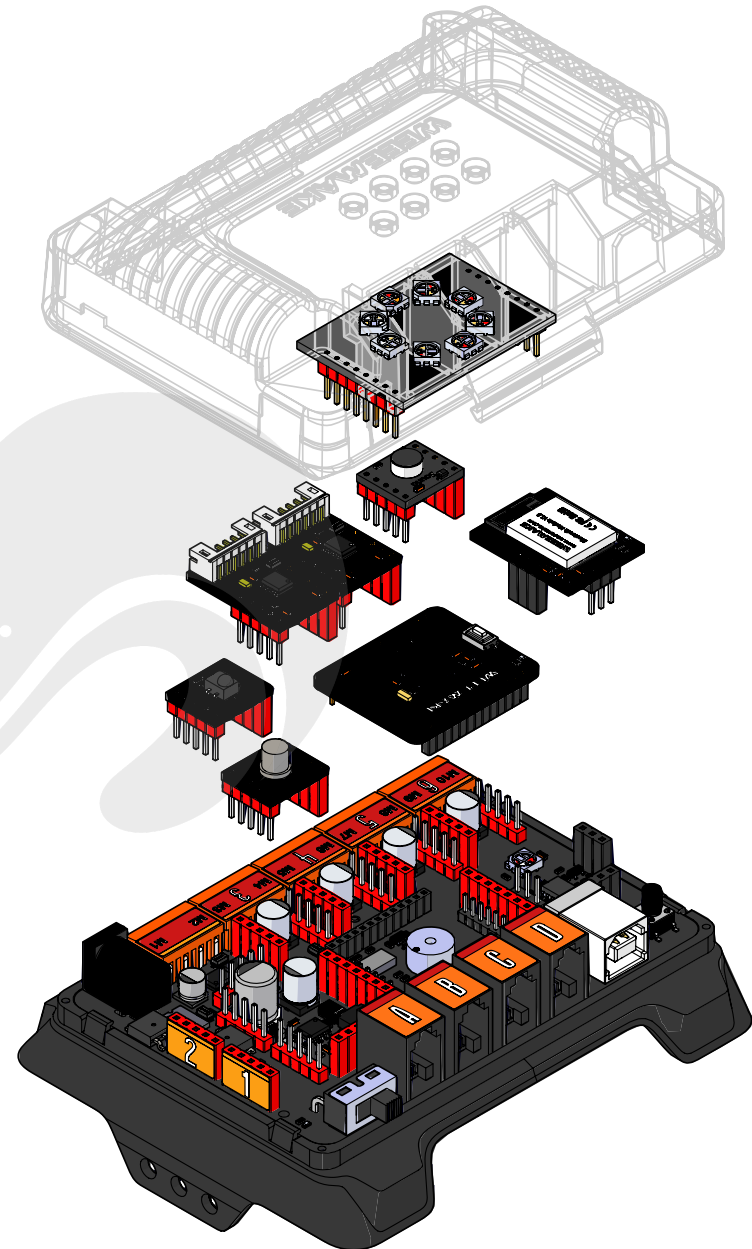
1xELF Mainboard Base



1xRGB LED - 8 (Pin)

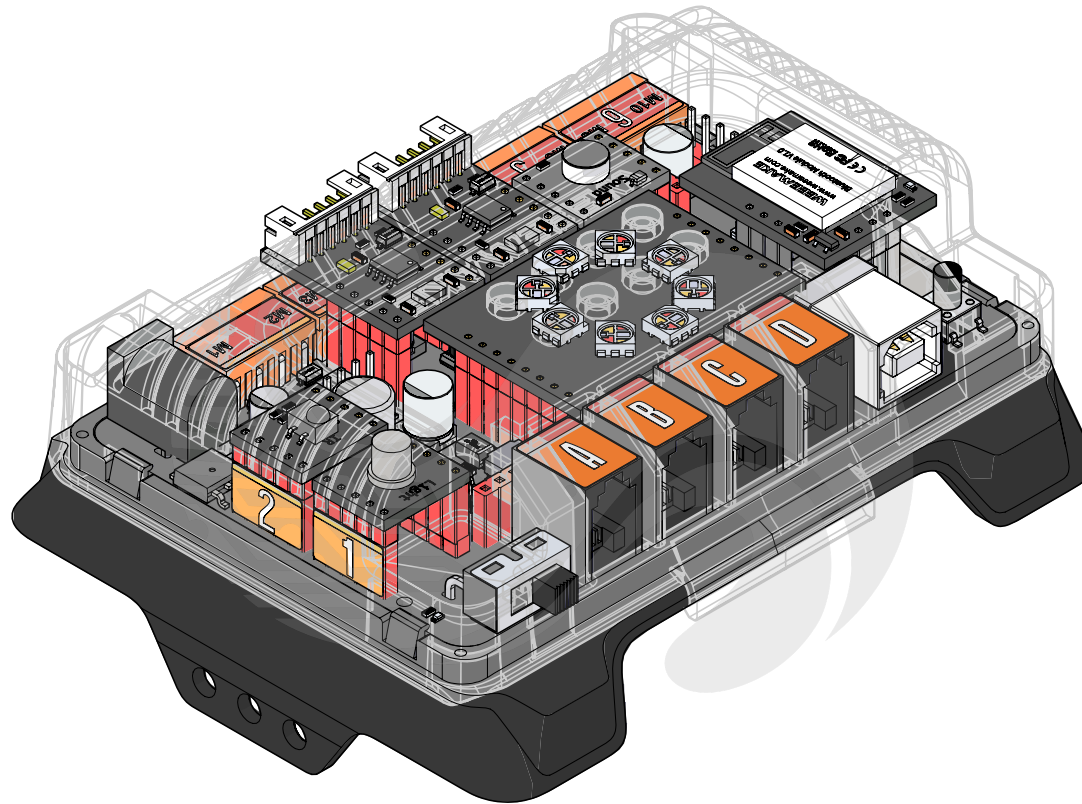


2xDC/Encoder Motor Driver



「 Self-balancing Robot 」

► 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

「Self-balancing Robot 」

► 01: Assemble the Encoder DC Motor-25(188RPM)



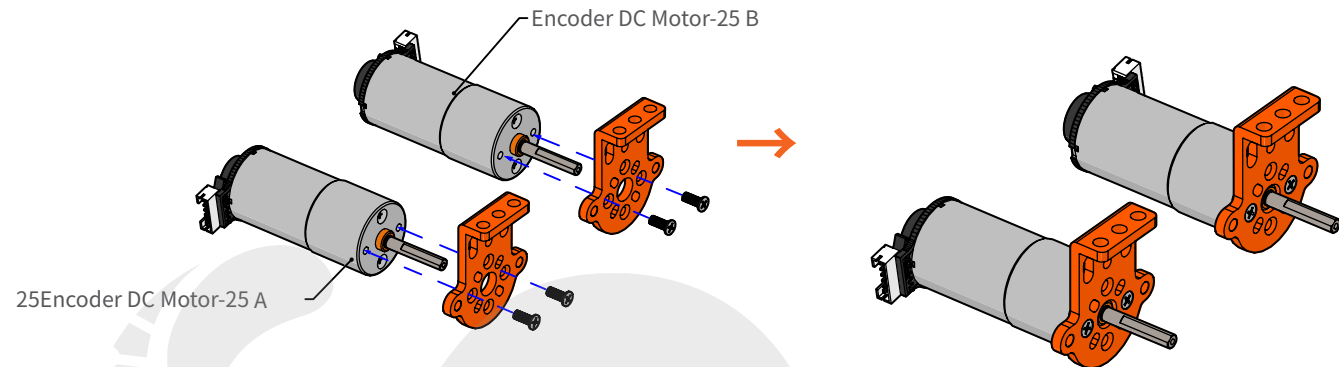
2x25 Motor Bracket



4xCountersunk Head Screw M3x6



2xEncoder DC Motor-25 (188RPM)

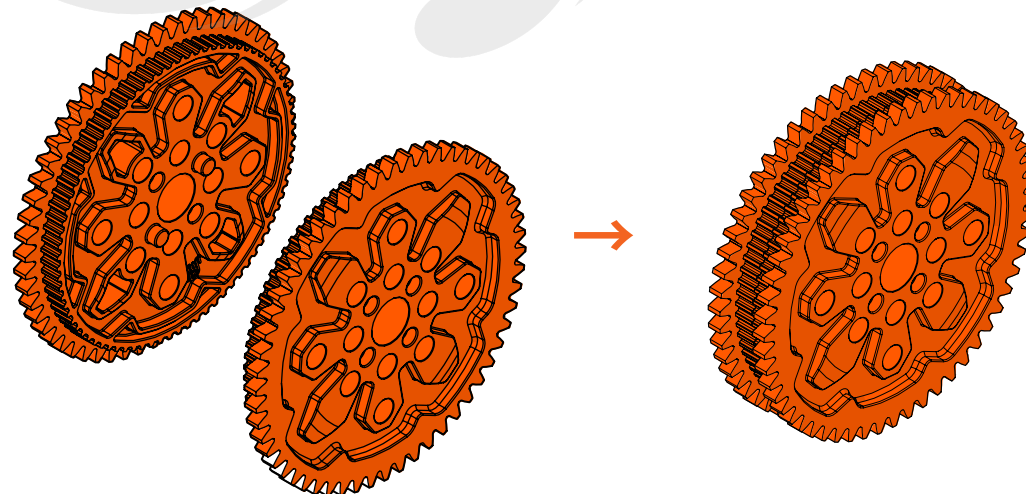


Note: Please install according to the hole position and direction. The motor wiring plugs of the two motors need to be opposite in direction for subsequent installation.

► 02: Assemble the 56T Plastic Gear



2x56T-Plastic Gear

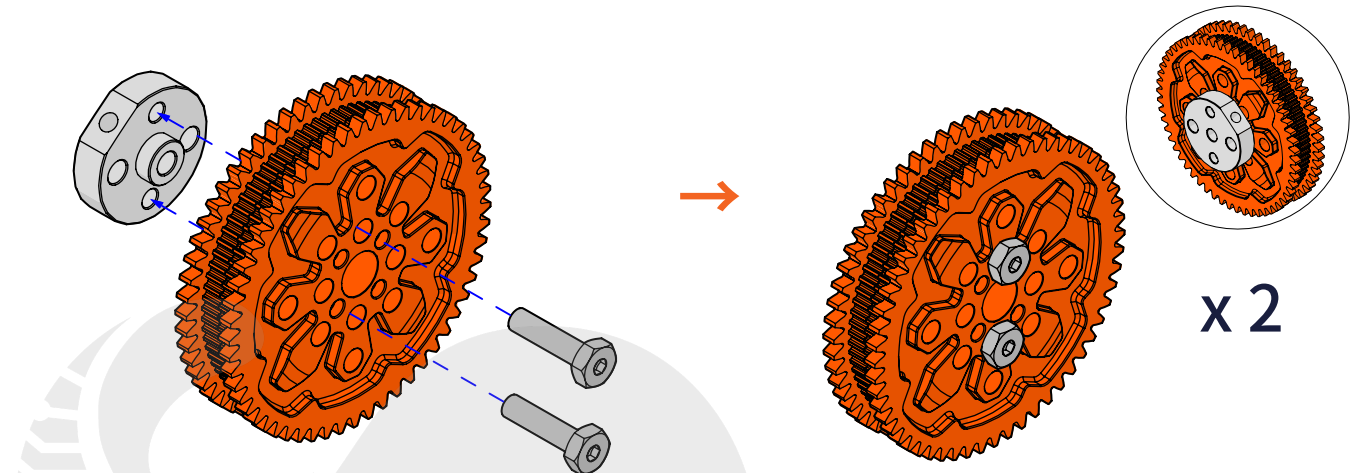


Tips:Engage two 56T plastic gear with each other to assemble a 56T wheel hub.

「Self-balancing Robot 」

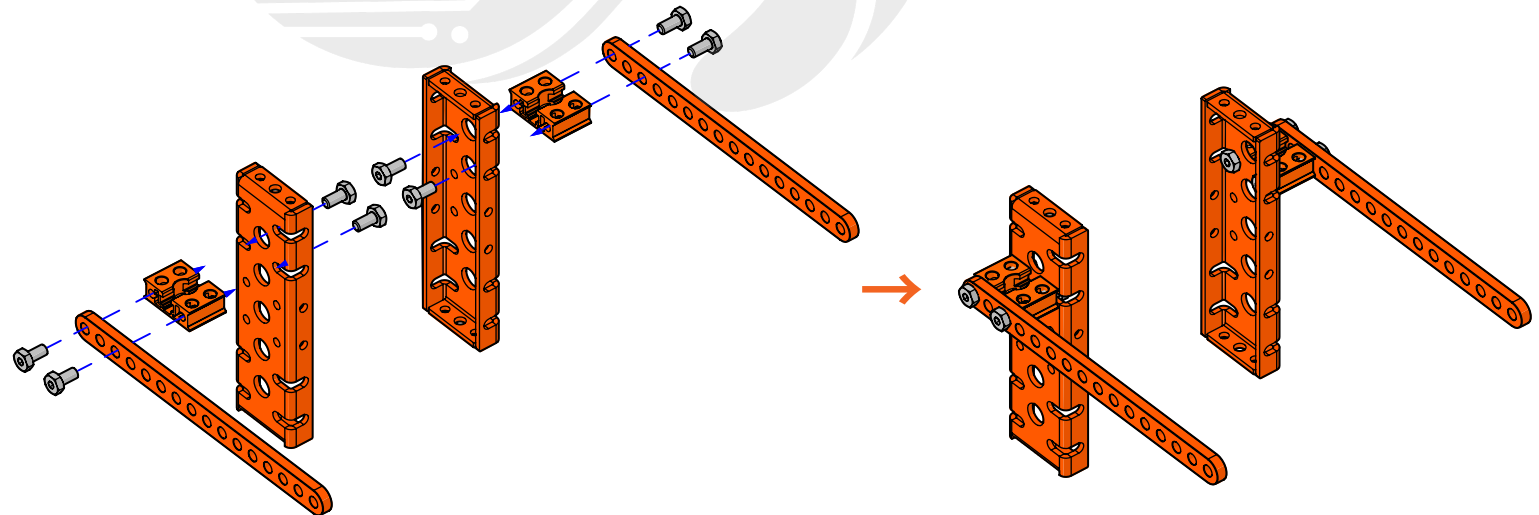
► 03: Assemble Flange Hub

-  2xScrew M4*20
-  1xDriving Flange Hub 4mm
-  1xWheel Assembly



► 04: Assemble the Arm

-  8xScrew M4*8
-  2xBeam 0410-130
-  2xBeam 0824-16-A
-  2xBeam 1030-100-B



Tips:

Please pay attention to the hole position and direction.

「Self-balancing Robot 」

► 05: Assemble Main Structure



2xArm



1xBeam 1030-100



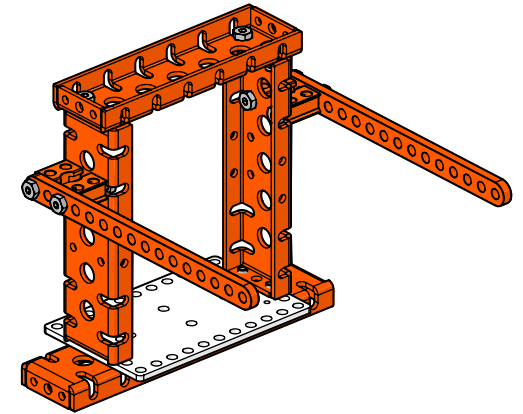
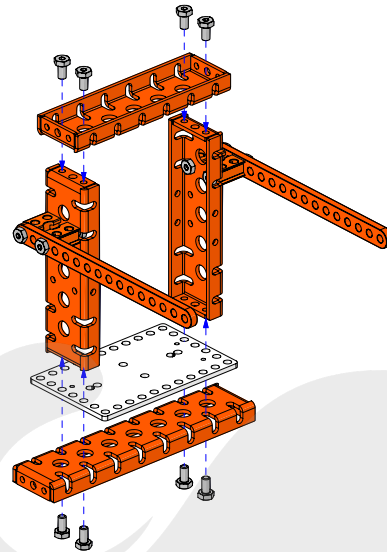
1xBeam 1030-132



1xAcrylic Bracket



8xScrew M4*8



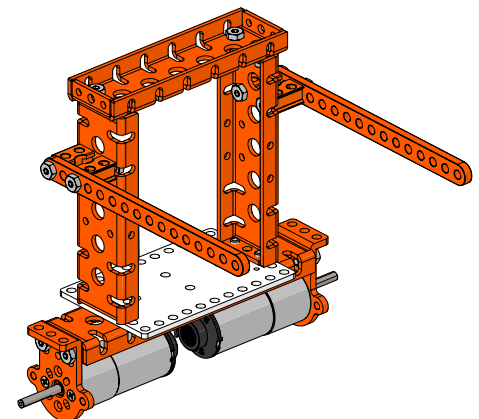
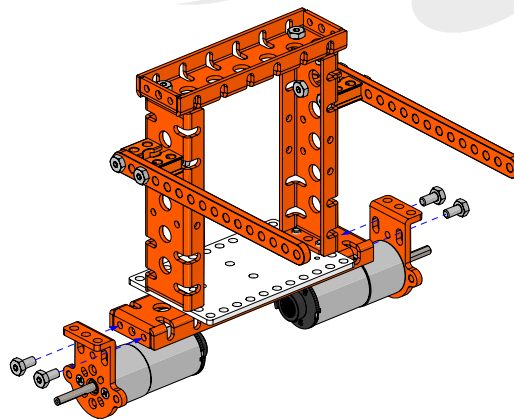
► 06: Assemble Motor



4xScrew M4*8



2xEncoder DC Motor-25 (188RPM) Assembly



Tips:

Please pay attention to the hole position and direction.

「Self-balancing Robot 」

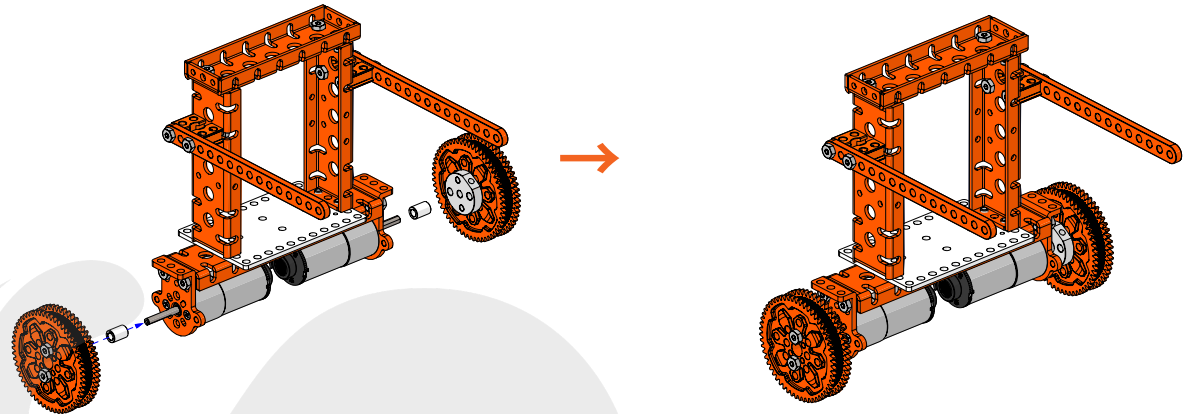
► 07: Assemble the Wheel Assembly onto The Motor



2xWheel Assembly



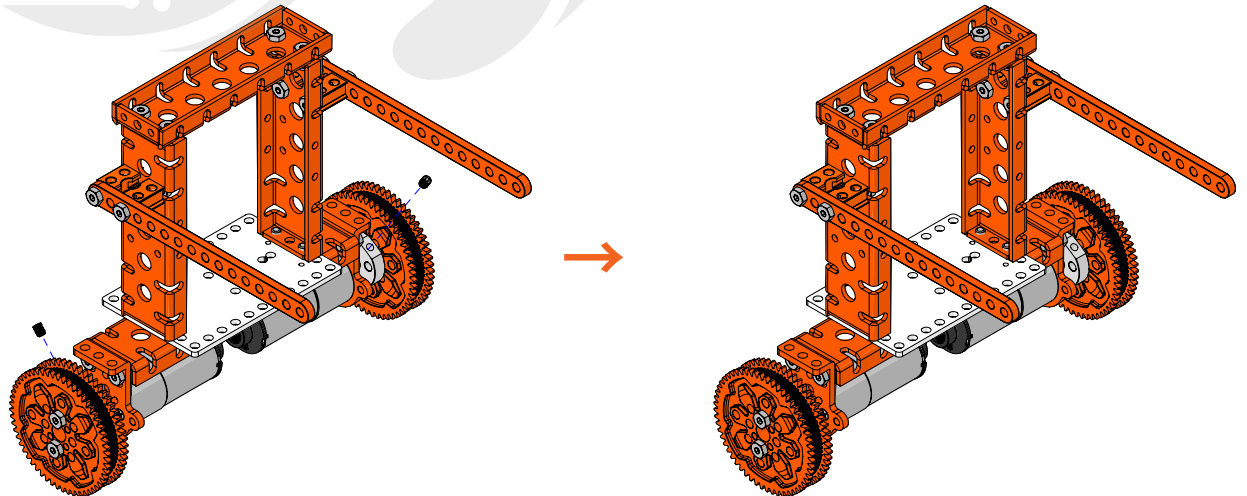
2xNylon Spacer 4*7*10



► 08: Fix the Wheel Assembly



2xHeadless Screw M4*5



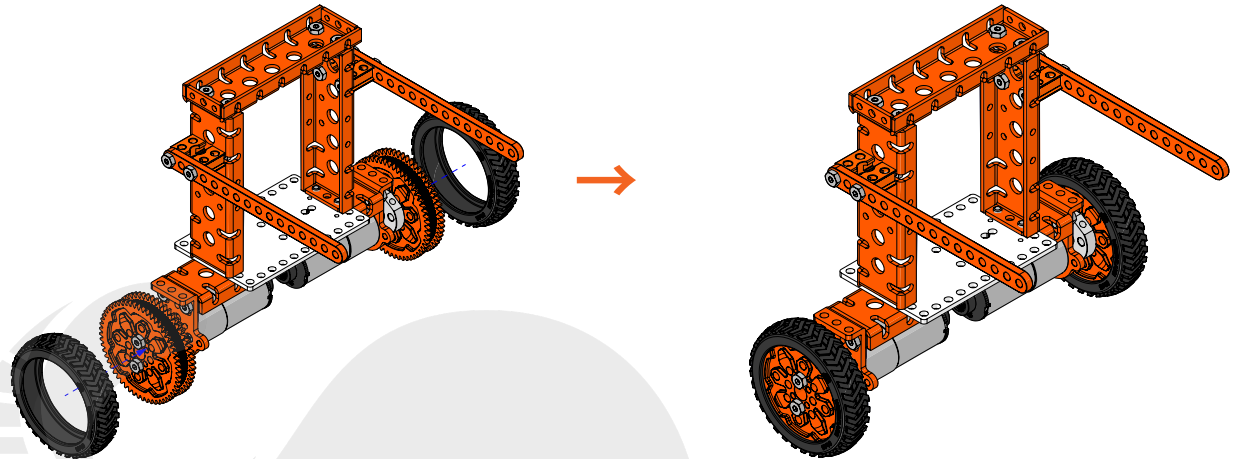
Tips:
Please pay attention to the hole position and direction. Please screw the headless screw M4*5 to the flat surface of motor shaft.

「Self-balancing Robot 」

► 09: Assemble Tyre 64*16



2xTyre 64*16



► 10: Assemble the 18650 Lithium Battery Holder



2xScrew M4*8



2xNut M4



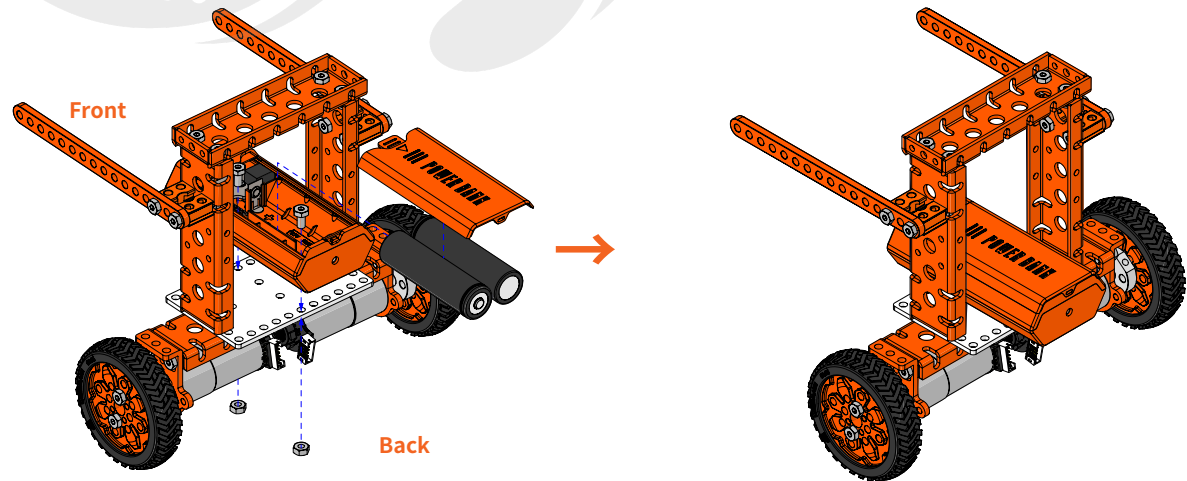
2x18650 Lithium Battery



1xLithium Battery Holder Lid



1x18650 Battery Holder



Tips:

Please pay attention to the hole position and direction.

「Self-balancing Robot 」

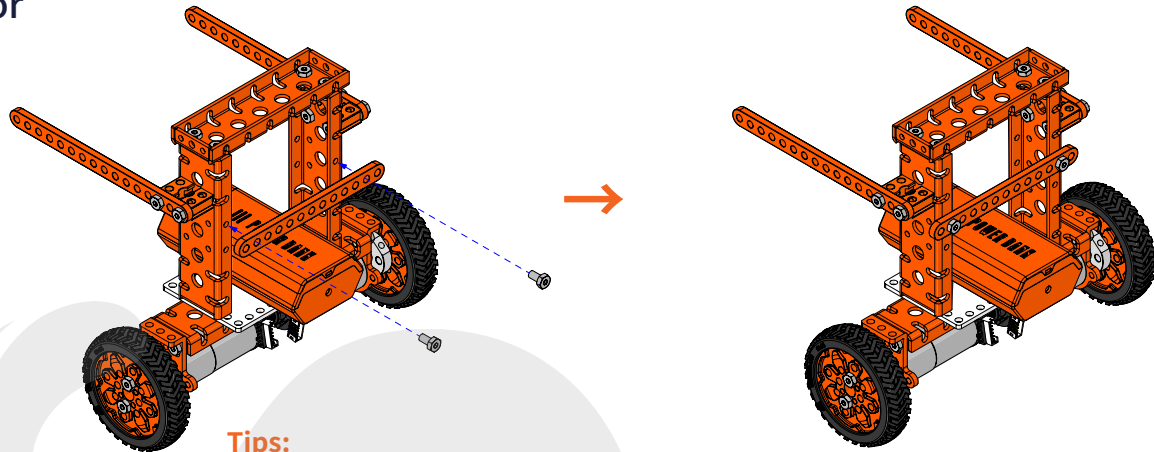
► 11: Assemble the Gyroscope Sensor



2xScrew M4*8



1xBeam 0410-106



Tips:

Please pay attention to the hole position and direction.

► 11: Assemble the Gyroscope Sensor



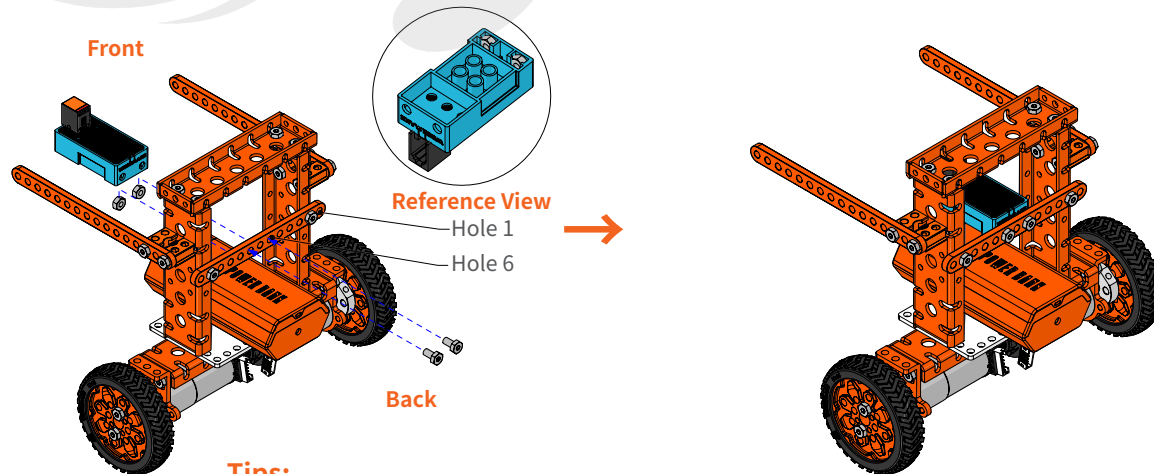
1xGyroscope Sensor



2xScrew M4*8



2xNut M4



Tips:

Please pay attention to the hole position and direction.

「Self-balancing Robot 」

► 12: Assemble the RGB Ultrasonic Sensor



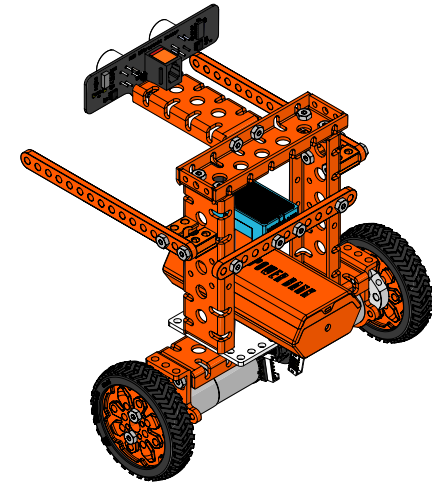
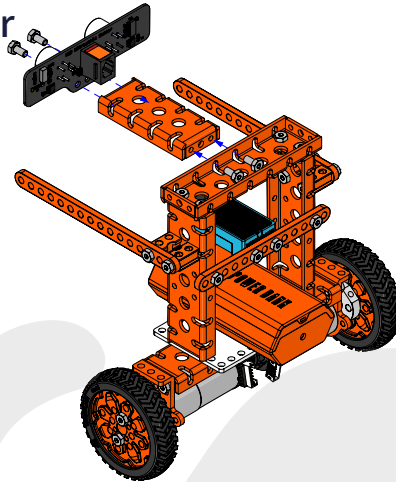
4xScrew M4*8



1xBeam 1030-68



1xRGB Ultrasonic Sensor



► 13: Assemble the Mainboard ELF



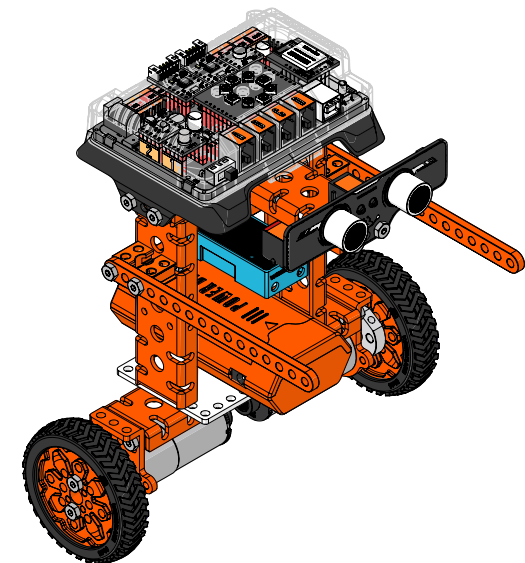
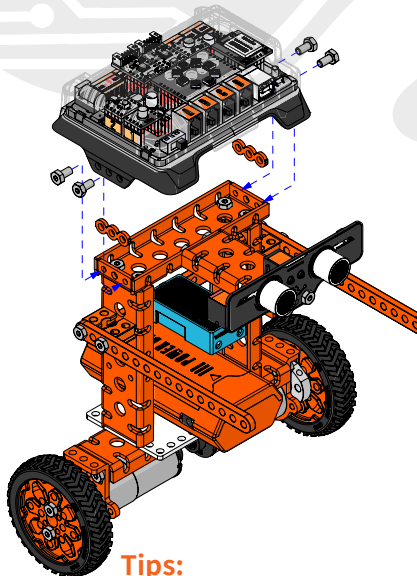
4xScrew M4*8



2xLinkage 0208-24



1xELF Mainboard Assembly



Tips:

Please pay attention to the hole position and direction.

「Self-balancing Robot 」

► 14: Wiring



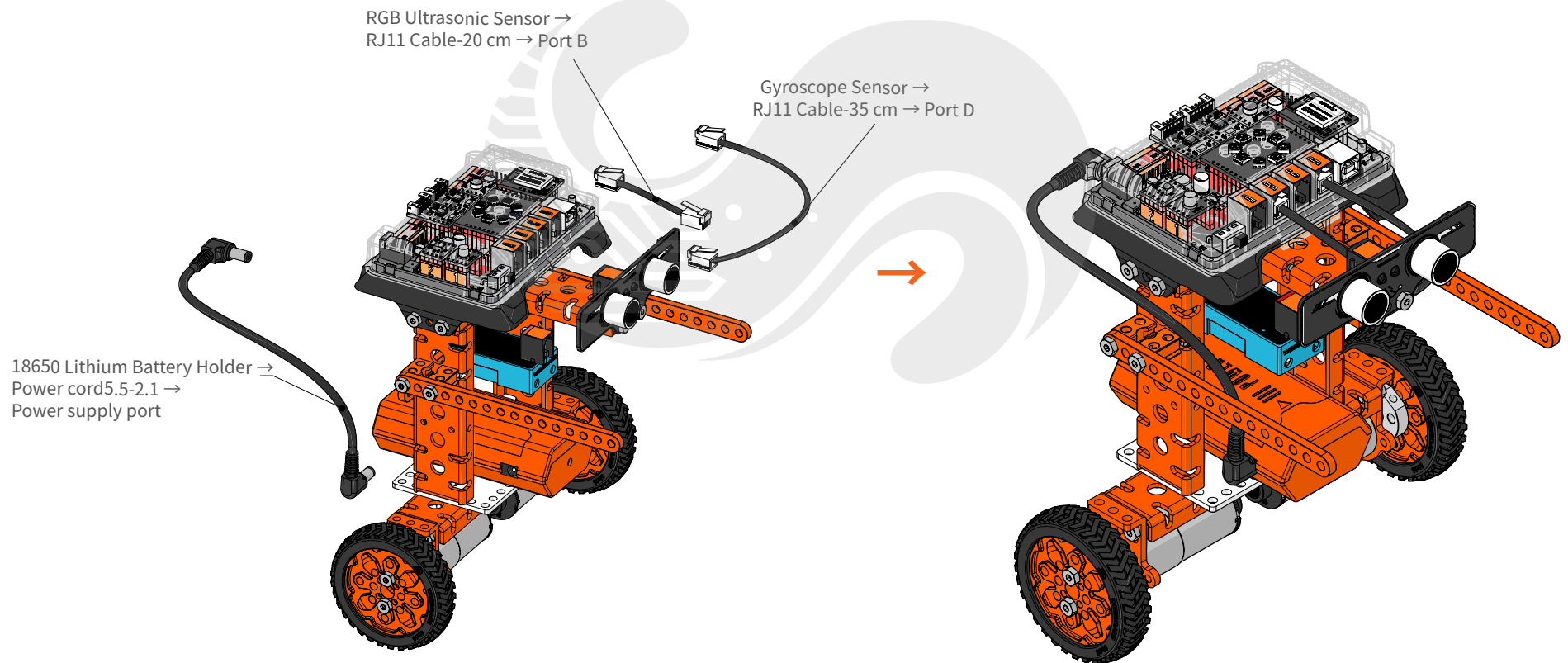
1xPower Cord 5.5-2.1



1x4P4C RJ11 Cable -20cm



1x4P4C RJ11 Cable -35cm

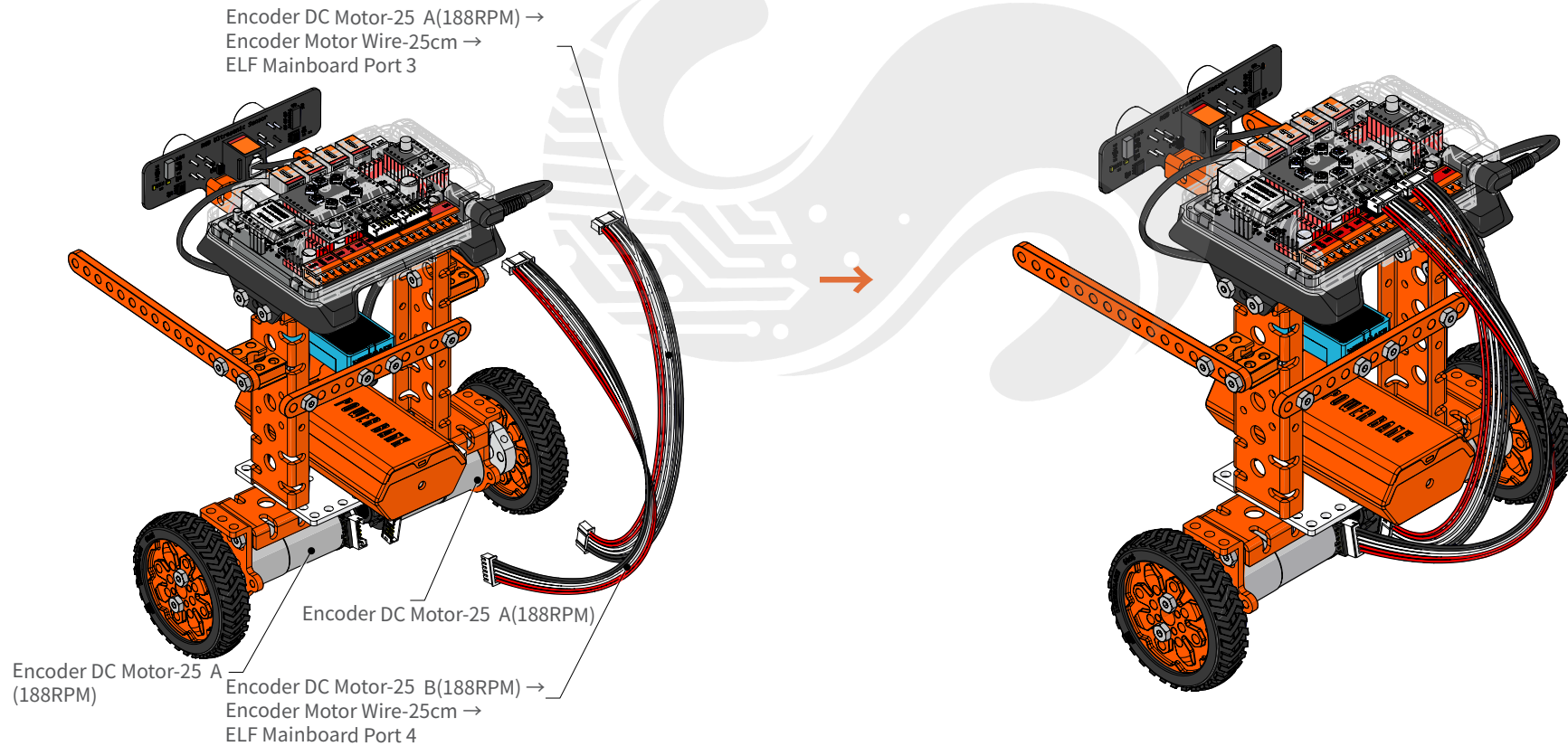


「Self-balancing Robot 」

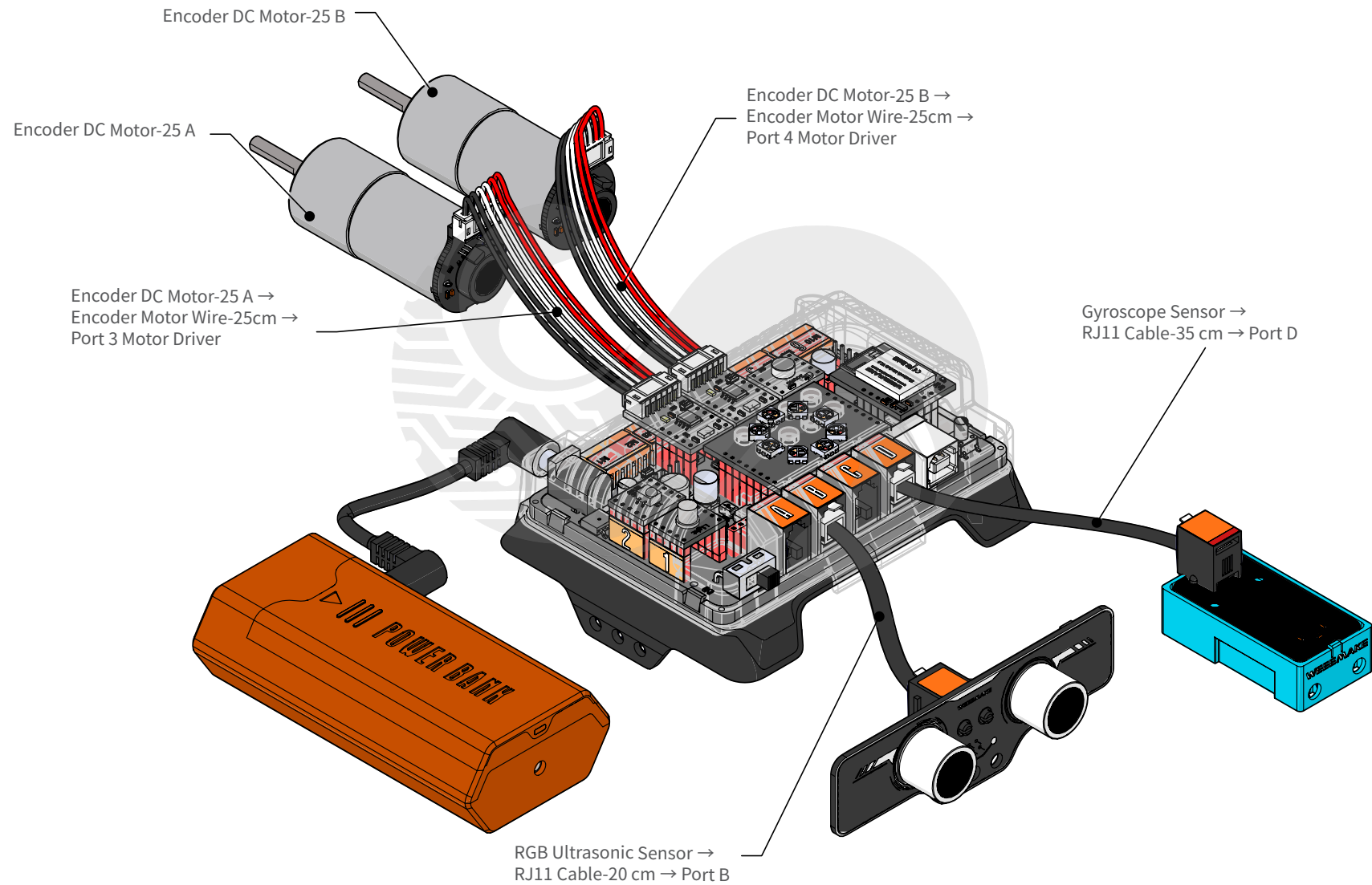
► 14: Wiring



2xEncoder Motor Wire-25cm



「Wiring」



「Completion Diagram」

