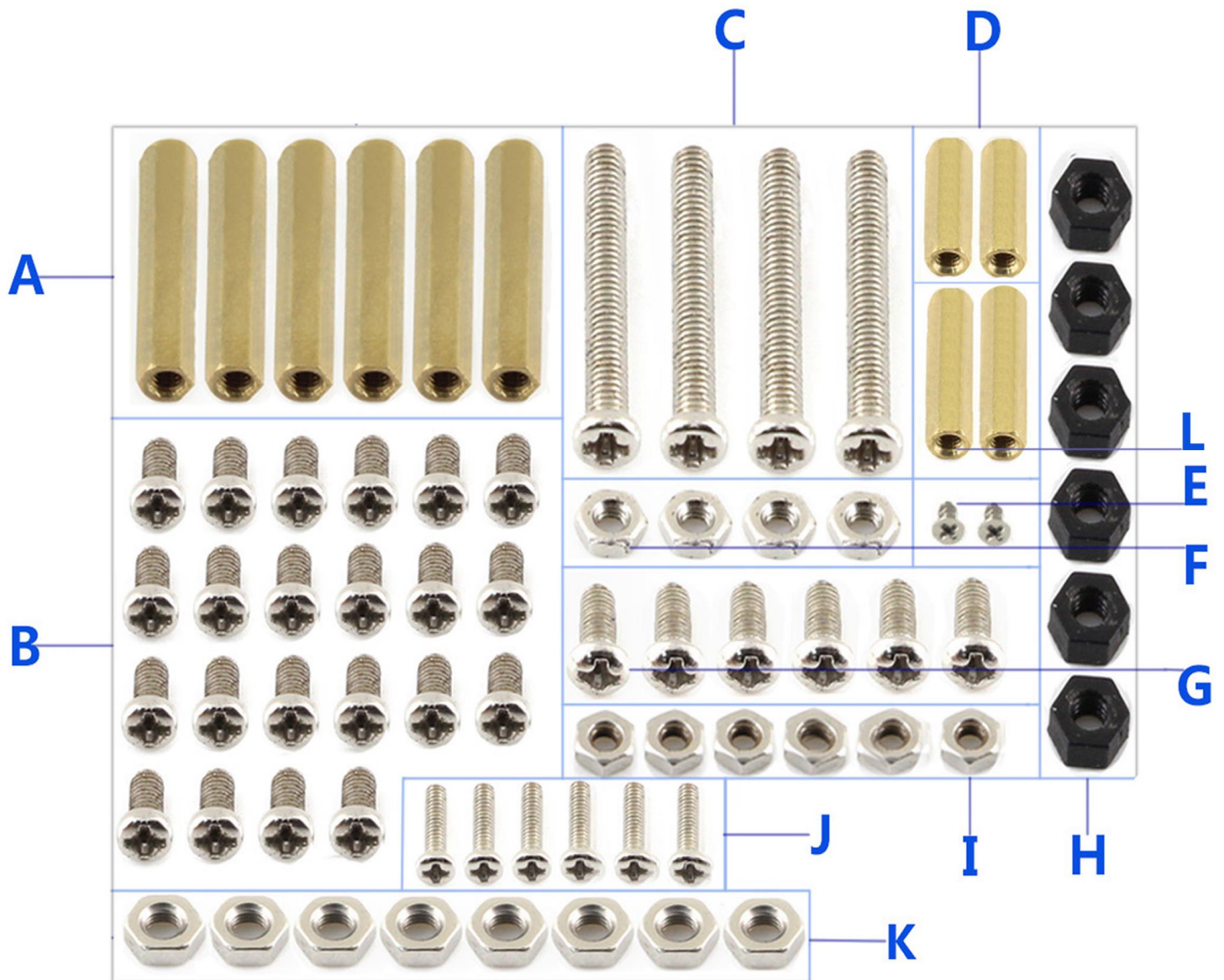
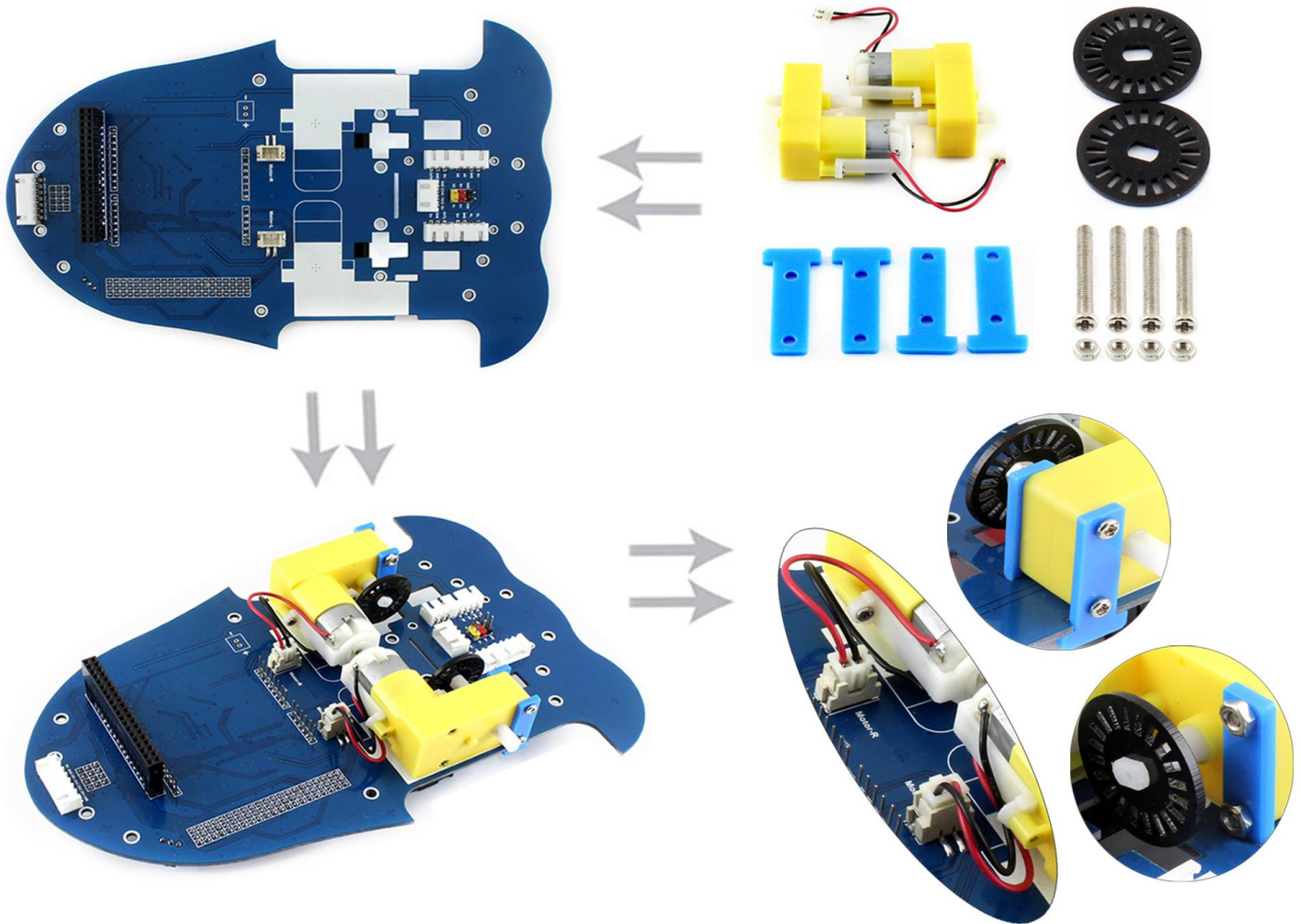


# AlphaBot Assembly Diagram

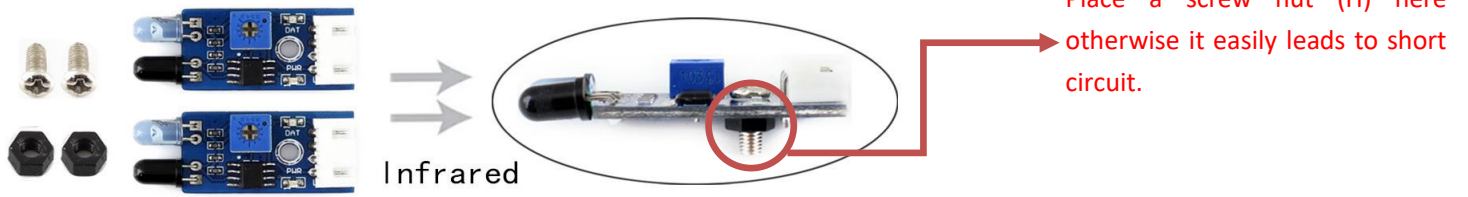


# Part 1 : AlphaBot baseboard assembly

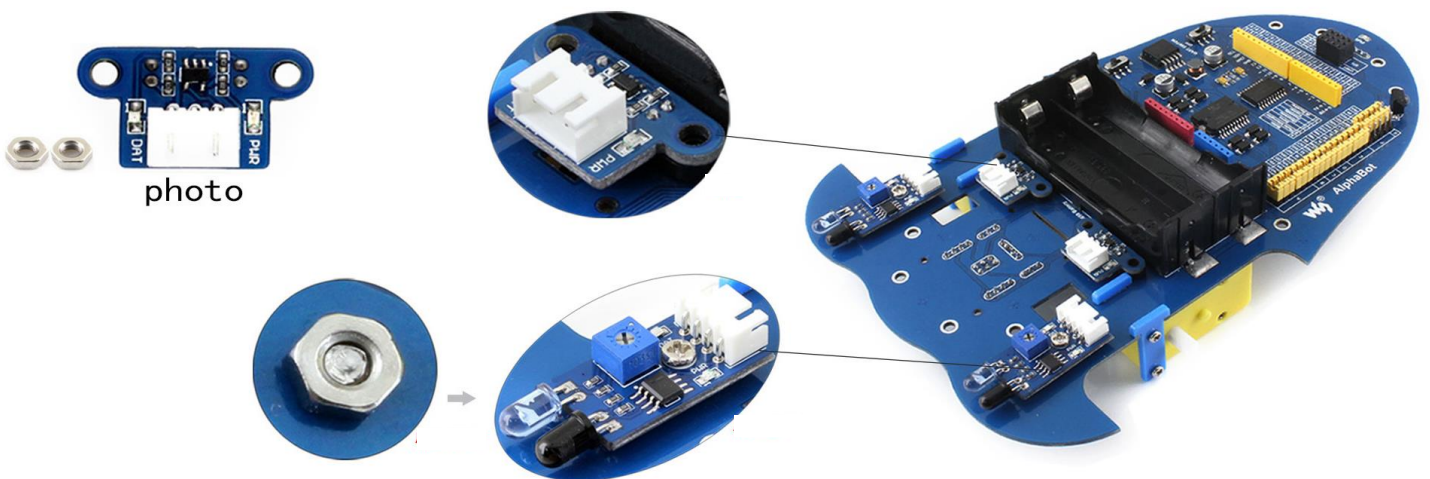
- ① Fix the motors onto the AlphaBot baseboard with the brackets, and then use (C) and (F) to install the encoder disks.



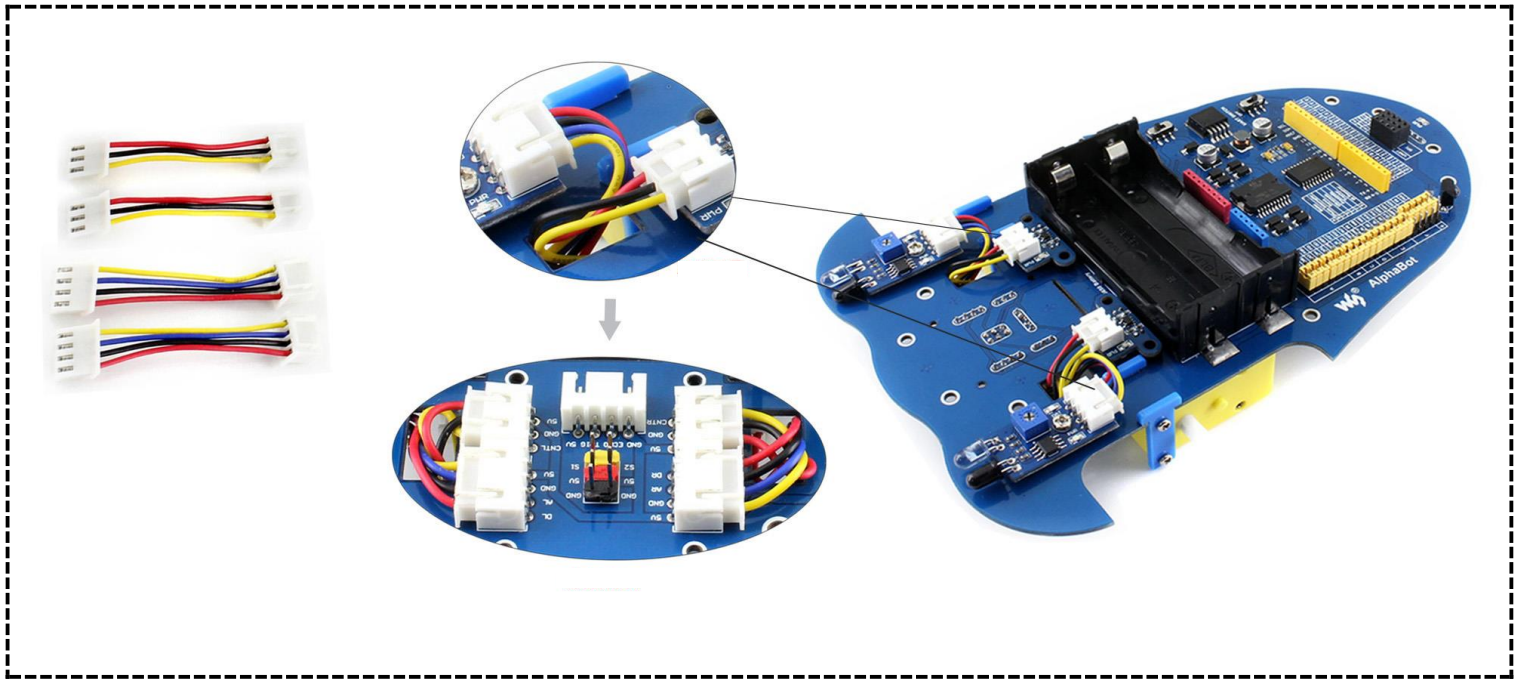
② Fix the Infrared sensors with (G) and (H).



Install the Infrared sensors and Photo sensor to the AlphaBot baseboard; the Infrared sensors should be fixed with (K), while Photo sensor can be inserted into the AlphaBot baseboard directly without any screw for fixing.



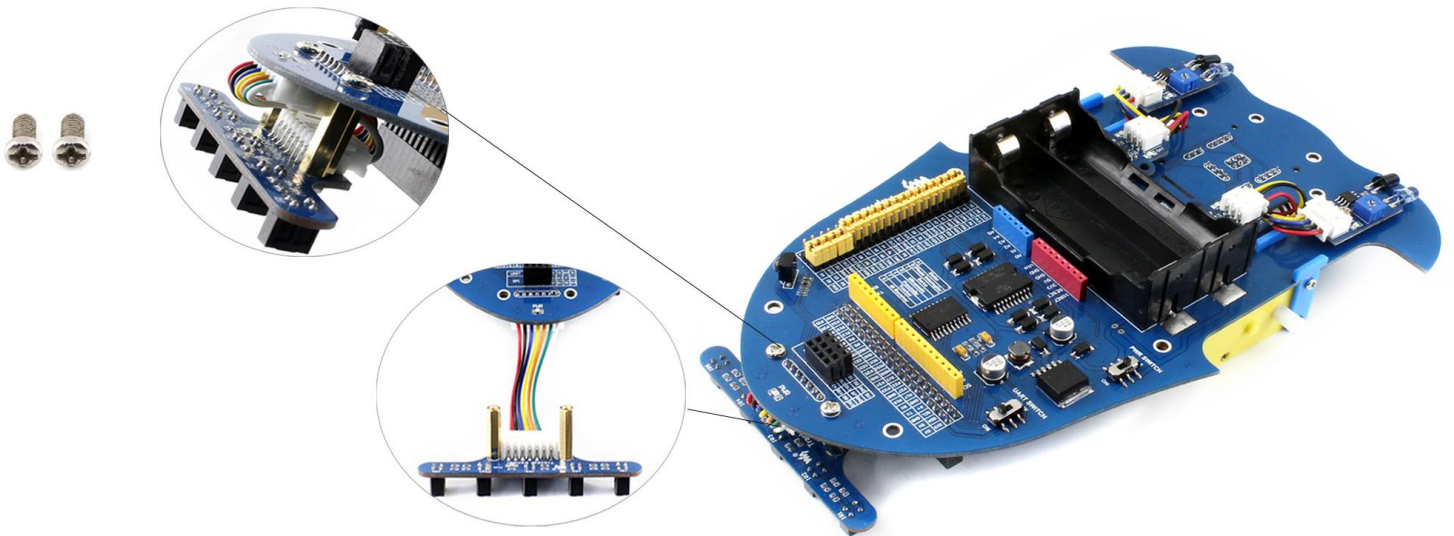
Connect a XH2.54 4cm 4Pin cable to the Infrared sensor, and tie a XH2.54 4cm 3Pin cable to the Photo sensor.



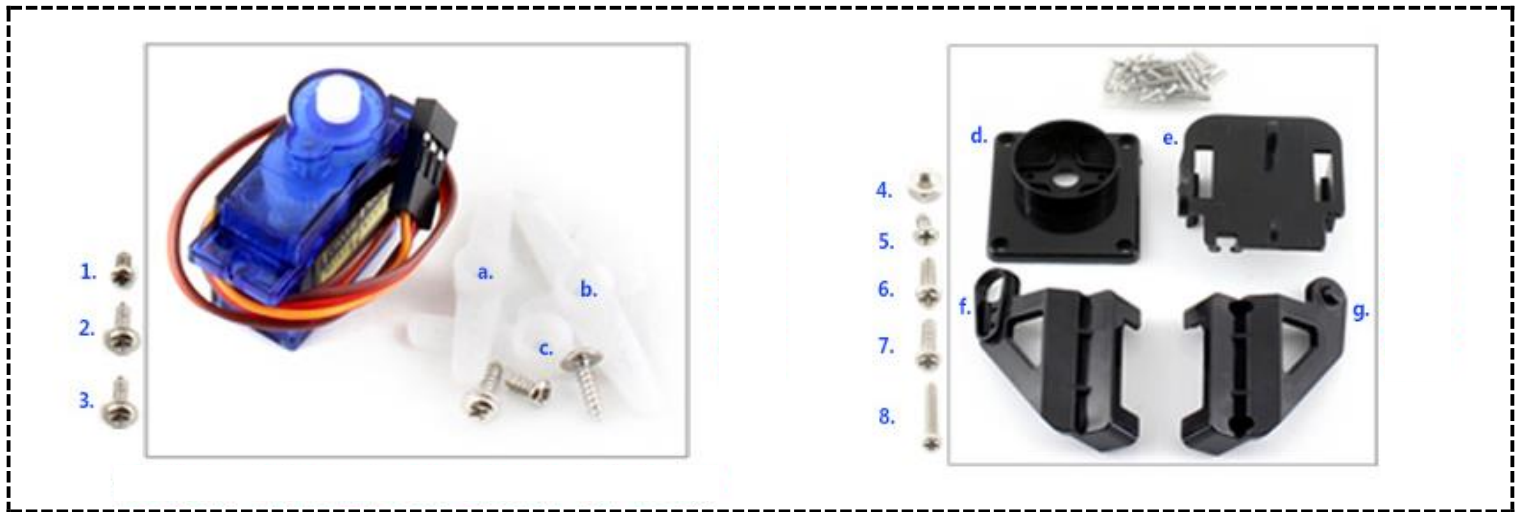
③ Tie a XH2.54 4cm 7Pin cable to the Tracker sensor, and fix (D) with (B).



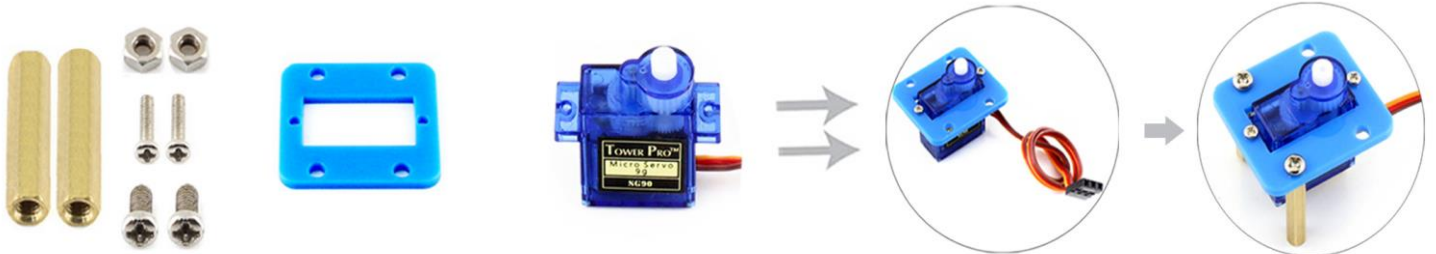
And then, connect the XH2.54 4cm 7Pin cable described above to the AlphaBot baseboard, and fix the Tracker sensor to the AlphaBot baseboard with (B).



## Part 2 : Ultrasonic Unit Assembly



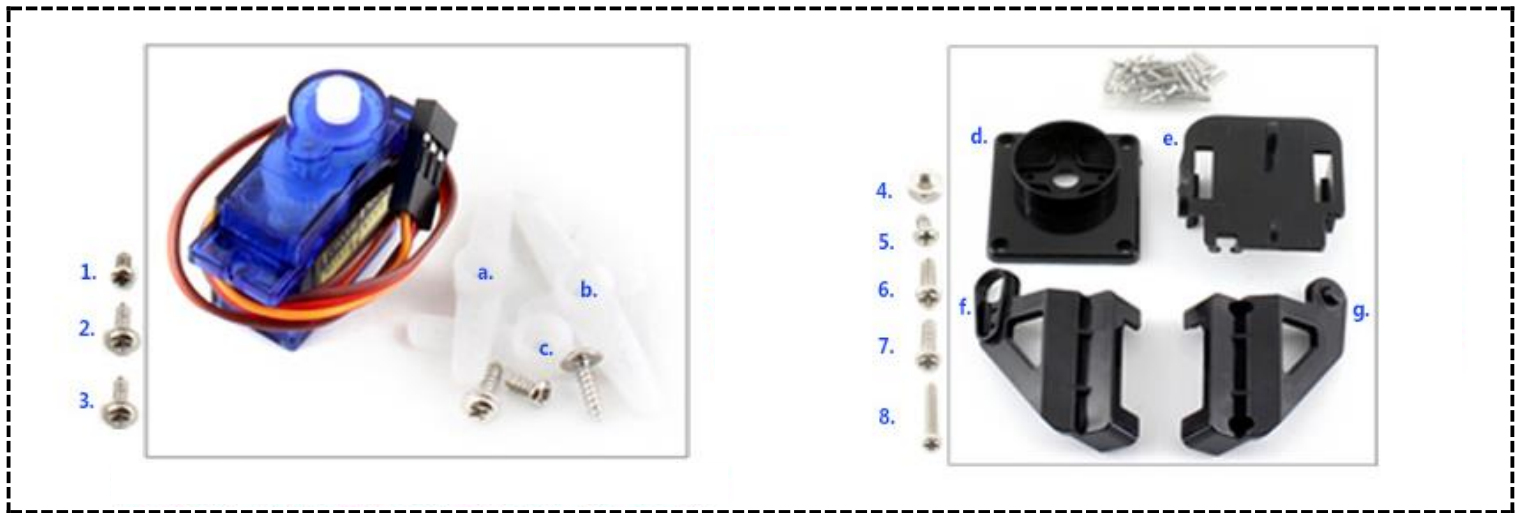
④ Fix the steering gear board onto the SG90 steering gear with **(I)** and **(J)**, and install **(L)** and **(B)** onto the two holes in the front of the steering gear.



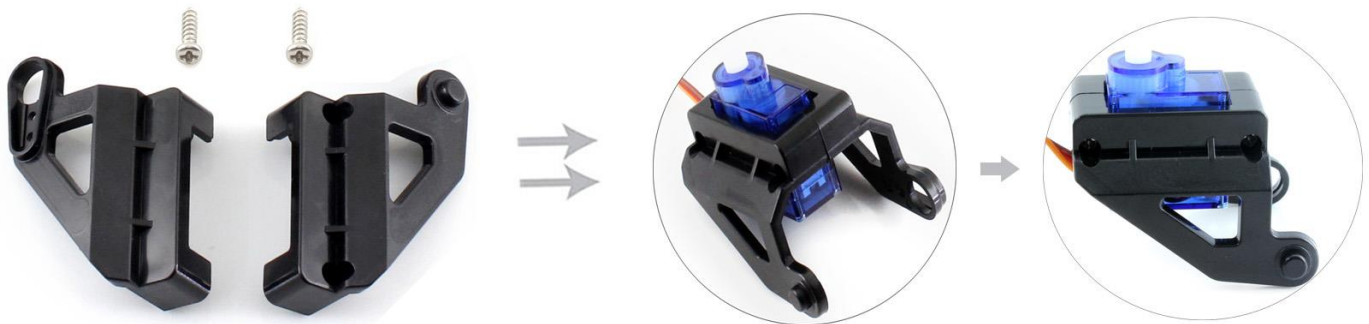
Fix the two-way rocker arm to the Pinboard with **(E)**, and then install the Pinboard to the SG90 steering gear and use the screw **(1.)** to fix it. Finally, insert the ultrasonic sensor to the Pinboard.



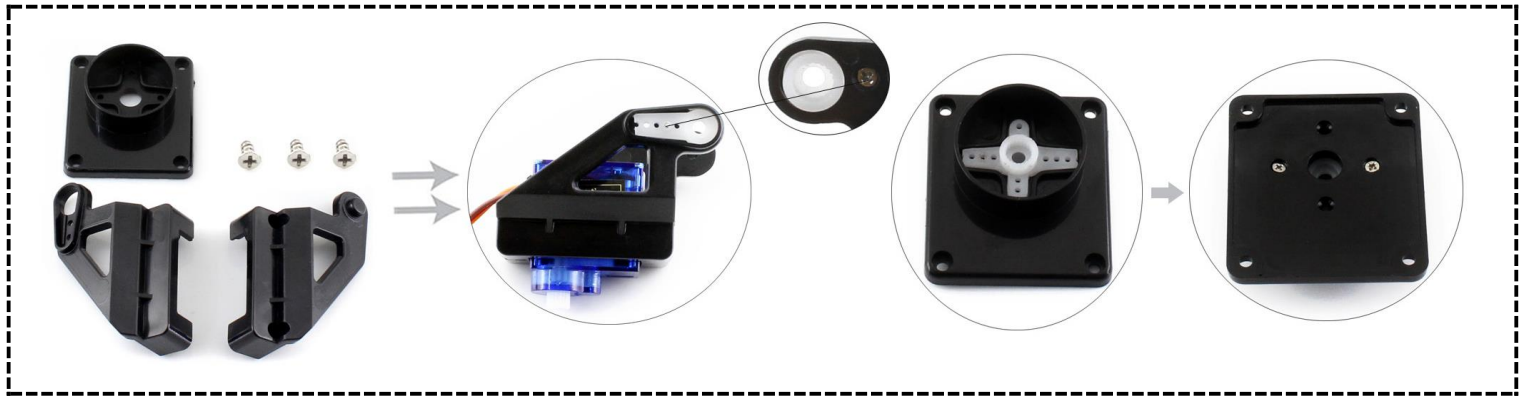
## Part 3: Camera Pan&Tilt Assembly



⑤ Place the steering gear in the middle of the stands (f.) and (g.) and fix it with the screw (7.). Please make sure the rotor on the steering gear is installed in a correct direction.

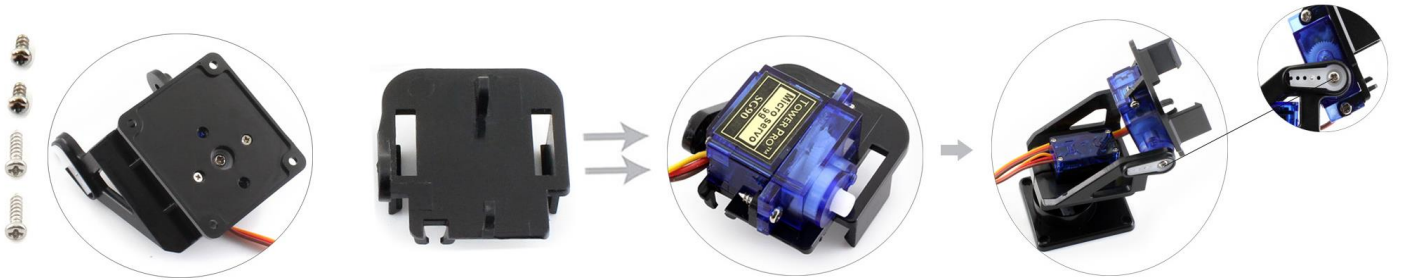


Cut out a little bit of the arm on the rocket arm (c.), place it into the stand (g.), and fix it with the screw (5.) Then, cut out a bit of each arm on the cross-shape rocket arm, and place it into the base, and fix it with the screw (5.) on the back side of the base.





Insert the steering gear describe above to cross-shape rocket arm (b.) in the stand (d.) and fix the installation with a screw (1.). Fix another steering gear into the stand (e.), and fix it with two screws (7.). Install the stand (e.) and steering gear to the stands (f.) and (g.), and fix them with the screw (1.).

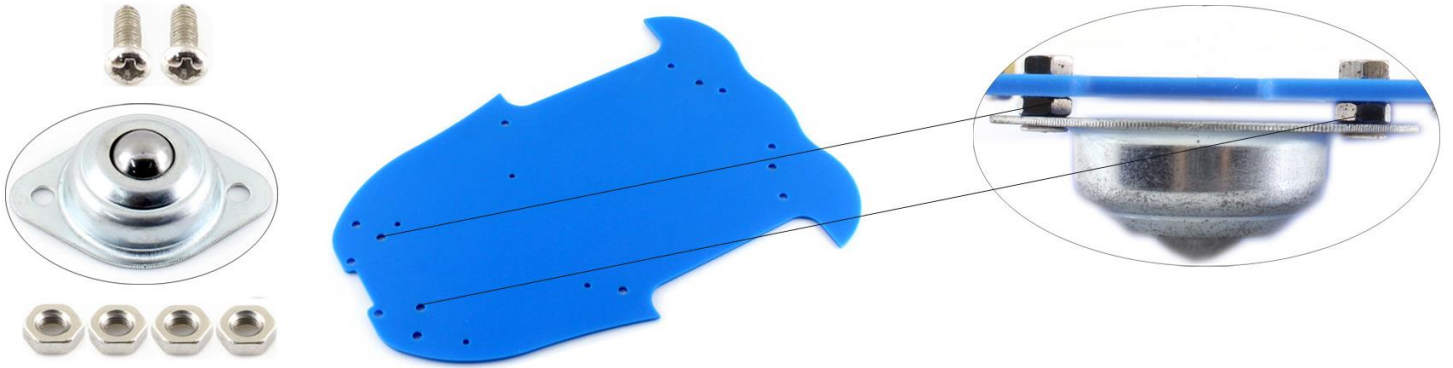


Connect a same direction 25Pin FFC cable to the Raspberry Pi camera, and clamp the camera on the top of the stand (e.) .

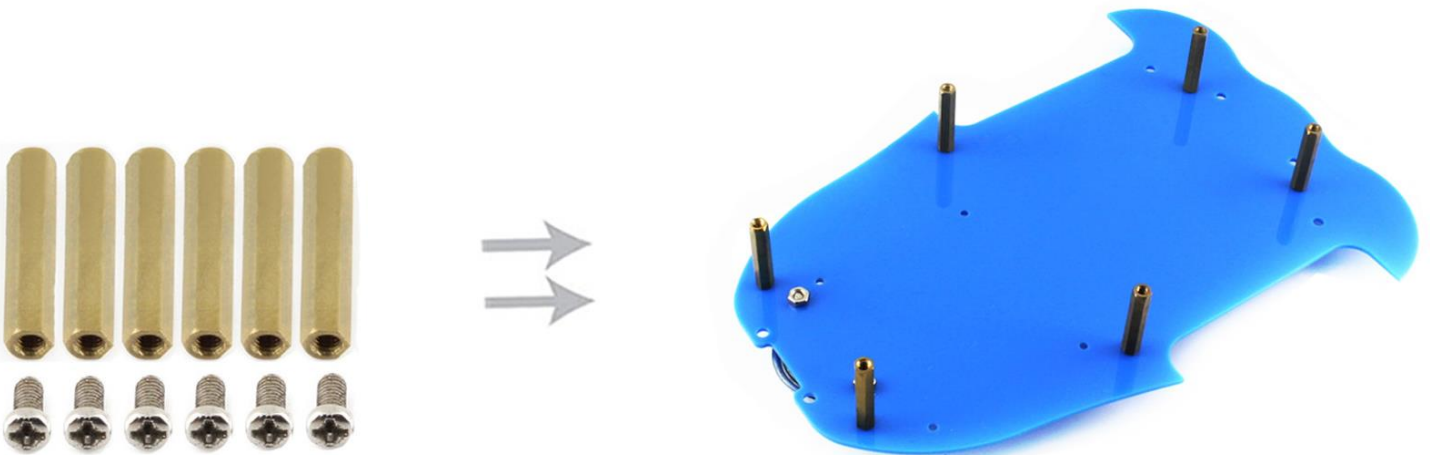


# Part 4: Acrylic Baseboard Assembly

⑥ Fix the universal roller wheel to the Acrylic baseboard with two **(G)s** and four **(K)s**.

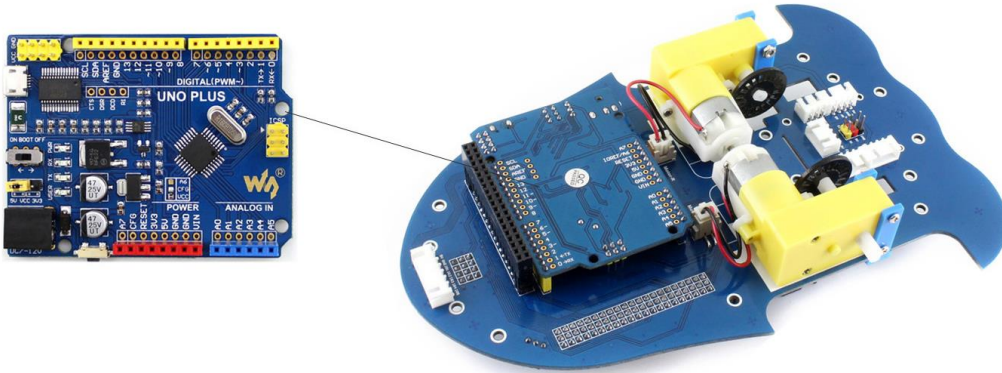


Fix six **(A)s** and six **(B)s** to the Acrylic baseboard.



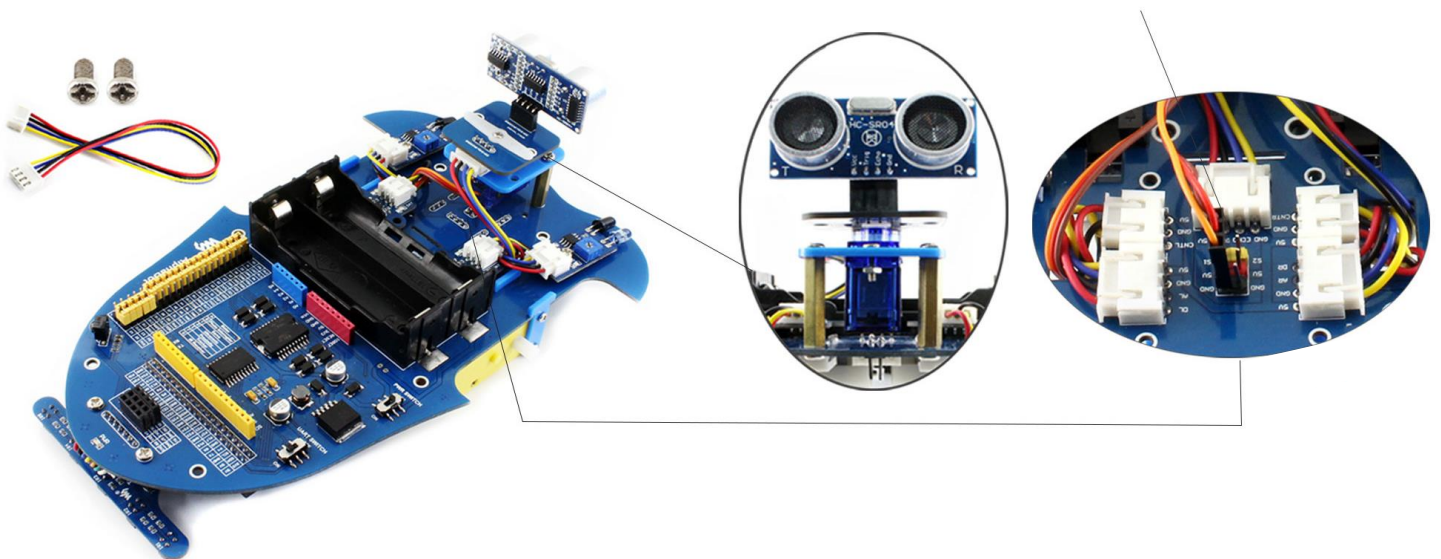
## Part 5: Vehicle installation

⑦ Arduino kit Insert the Arduino board into the AlphaBot baseboard.



Fix the completed ultrasonic unit to the AlphaBot baseboard with **(B)**, and connect a XH2.54 20cm 4Pin cable to the ultrasonic Pinboard.

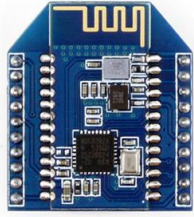
**( Connect the steering gear to the S1 interface with the cables, in which the black line is to the brown port, the red line to the red port, and the yellow line to the yellow port. )**



Install the Acrylic baseboard to the front side of the AlphaBot baseboard with **(B)**, and fix the wheels to the car.

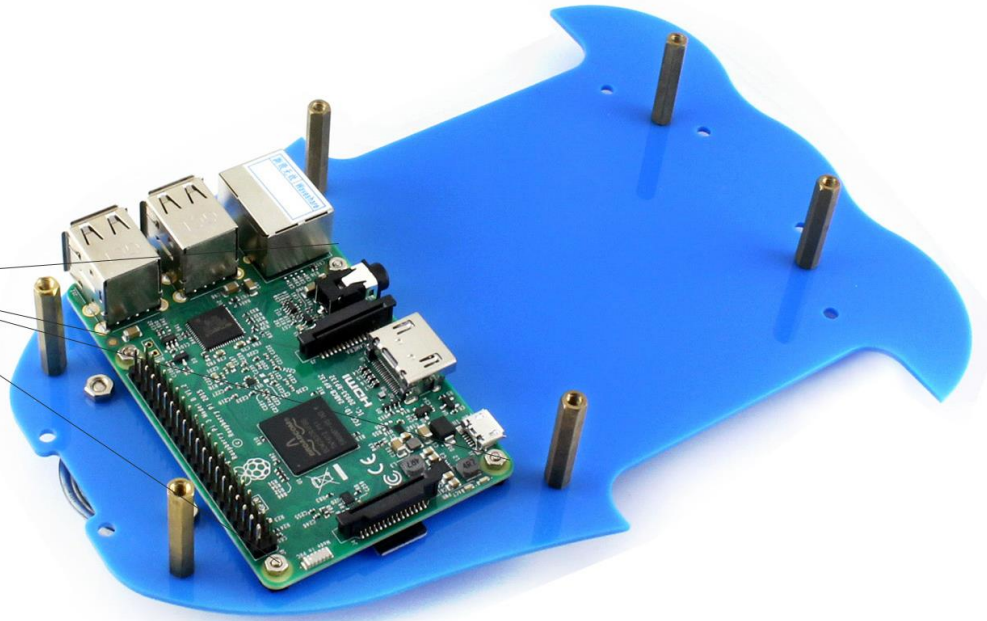


For Bluetooth kit, you can also link to [Accessory Shield](#) and [Dual-mode Bluetooth](#).

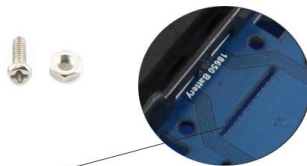


## ⑧ Raspberry Pi kit

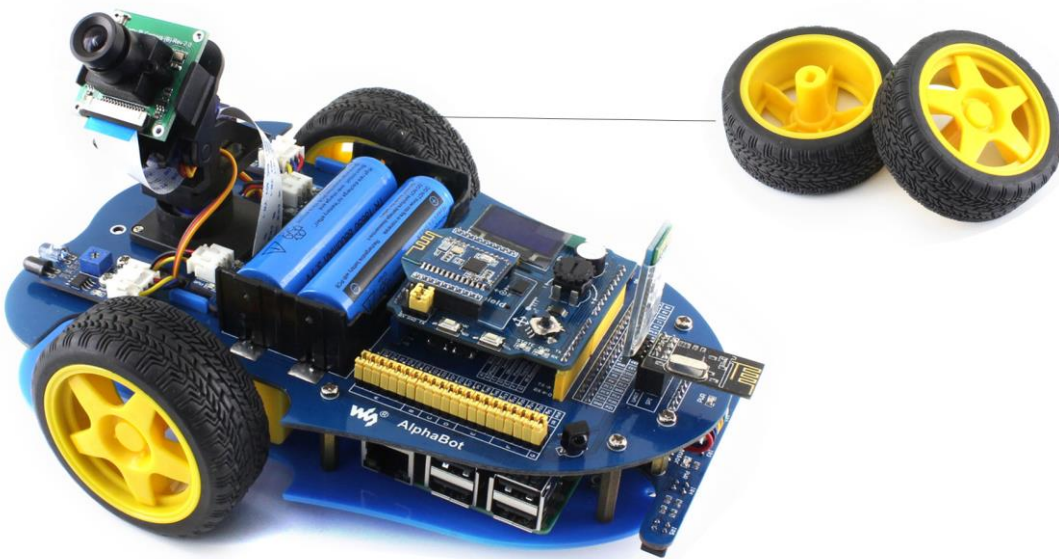
Fix the raspberrp Pi to the Acrylic baseboard with **(H)**, **(I)** and **(J)**. **(H)** is a pad; place it between the raspberrp Pi to the Acrylic baseboard.



Install the camera pad&tilt unit to the front end of the AlphaBot baseboard, and fix it with **(6.)** and **(4.)**. Pass the camera cable through the flat cable hole and connect it to the Raspberry Pi board. Fix the Acrylic baseboard to the AlphaBot baseboard with **(B)**.



Finally, fix the wheels to the car.



In addition, Arduino and raspberry Pi can work together at a same time in a same car via serial communication.

