Servo Steering Robot user manual

① Assemble

1、Test

Before installing the chassis, please test whether the servo and motor are running normally, and adjust the servo angle.

● Do not pay attention to the steering gear centering problem before installation, and then need to readjust the rudder angle and program. Therefore, before installation, it is very important to determine the midpoint of the servo, here you can download the program to the motherboard, power the servo can be centered. Tests can also be done by writing your own code or using a dedicated servo controller.

● The motor is a DC geared motor, which can be directly energized to the two poles of the motor, and the red point marked by default is the positive pole and the other is the negative pole.

2、Chassis Assembly

2.1 Fixed steering cup and wheel

● Sequential order: front rotating shaft - large bearing - steering cup - small bearing - latch - hex coupling - wheel - locknut (M4)。

Illustrate: The steering cup and the large bearing are closely matched, the bearing and the steering cup are parallel when installed, the shaft sleeve is pushed into the inside of the steering cup, it needs to be pushed in vigorously, the shaft middle hole is protruding small bearing as good, insert the latch and put it into the hexagonal edge adapter, the side with the shaft groove is sleeved into the shaft, the wheel is mounted and pressed hard as the inside, the fixing nut is screwed on with a cross sleeve, and the rotational flexibility of the wheel is detected.

2.2 The head connected steering cup

● The long connecting rod is in the upper hole, connected to the 2-side steering cup, the hole spacing is 65mm, if there is any deviation, please fine-tune.

● The short connecting rod is in the lower hole, one side is connected to the steering cup, the other side is connected to the rudder angle, the long and short connecting rod is not fixed in the same hole, and the hole spacing is 45mm.

● M2.5*10mm screw x 3.

2.3 Fixed servos, rudder angle, steering ball head
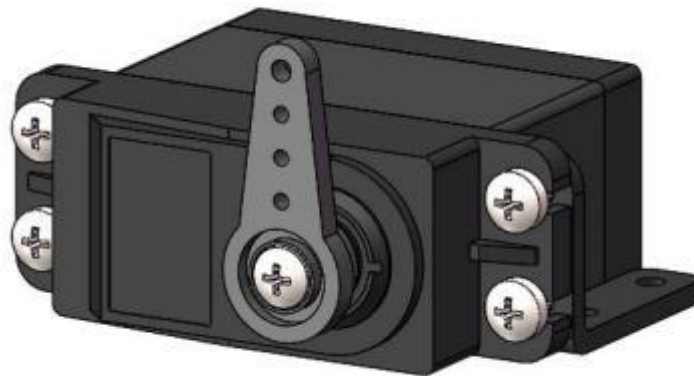
Brown:	GND	
Red:	VCC	
Yellow:	S	

● The servo is fixed on the L-shaped bracket, fixing the position of the red circle of the hole, and paying attention to the left and right positions of the servo shaft.

● Before installing the rudder angle, please calibrate the servo angle (90 degrees), and use the program to control it to reach the 90 degree position, and the angle is not right
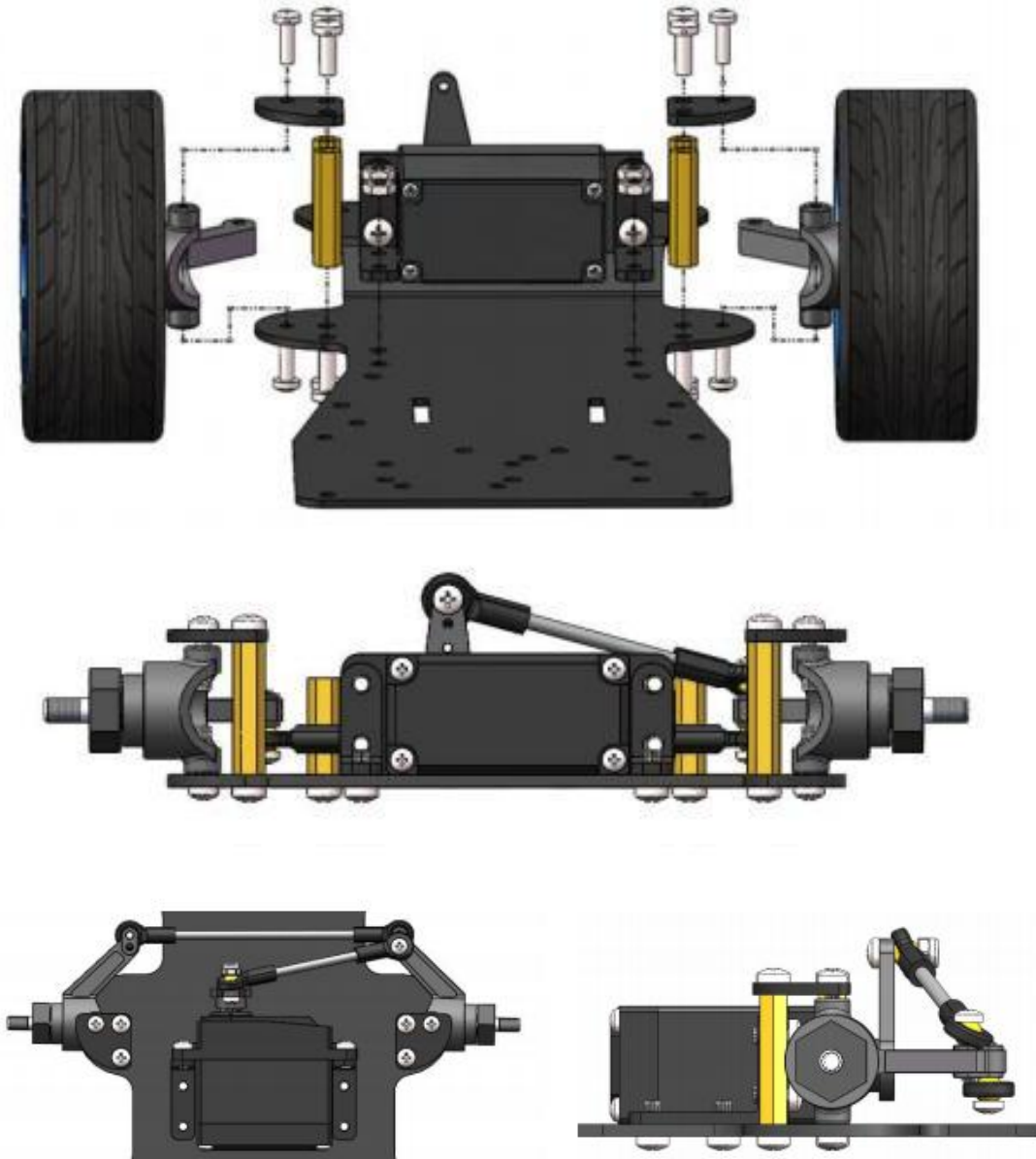
● Connect one end of the short ball head to the rudder corner and the other end to the steering cup.

● Rudder angle x 1   ● M3 * 5mm screw x 4

● M3 screw x 1

## 2.4 Fixed servos and steering cup to the chassis

- The steering cup is fixed to the chassis, keeping the steering cup flexible to avoid damage to the servo or main board when the servo rotates.

- The steering cup arm faces the nose of the car and connects it to the rudder angle with a ball head connecting rod, and the ball head connects the steering cup to the rudder angle (Figure 3).

- M3*22mm copper pillar x 4
- M3*5mm screw x 4 (servo fixed)

- M3 * 8mm screw x 8
- M2.5 * 10mm screw x 5
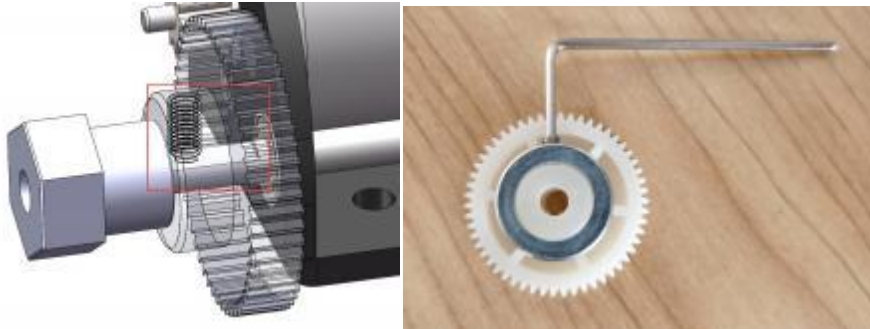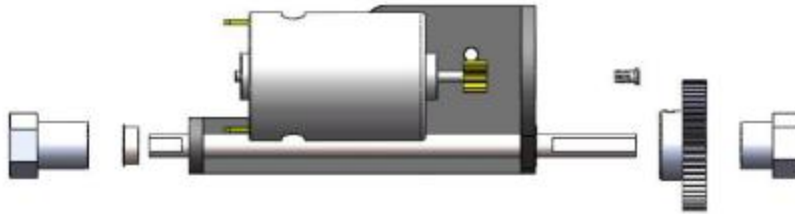
2.5 Assemble the drive

JGA25-370 Motor
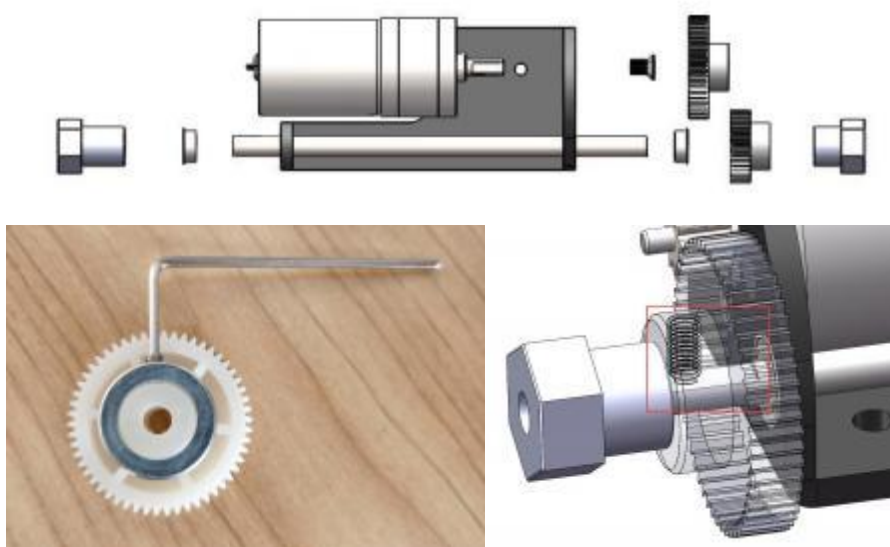
- Gears and couplings require screw fastening, and gears are secured with L-type hex wrenches.

- The shaft length step is close to the gear, and the motor coupling is long on the left and short on the right.

- M3 * 5mm screw x 5

- M3*5mm flat head screws x 2

Note: The gear fixing is correct, first install the gear to the D-profile on the shaft, screw until the gear will not shake, and then rotate the screw 100 degrees to tighten; Excessive will make the gear slip teeth scrapped.

RS380 Motor

- Gears and couplings require screw fastening, and gears are secured with L-type hex wrenches.

- The shaft length step is close to the gear, and the motor coupling is long on the left and short on the right.

- M2.5*5mm screw x 2

Note: The correct way to fix the gear, first install the gear to the D-profile on the shaft, screw until the gear will not shake, and then rotate the screw 90 degrees to tighten; Excessive will make the gear slip teeth scrapped.
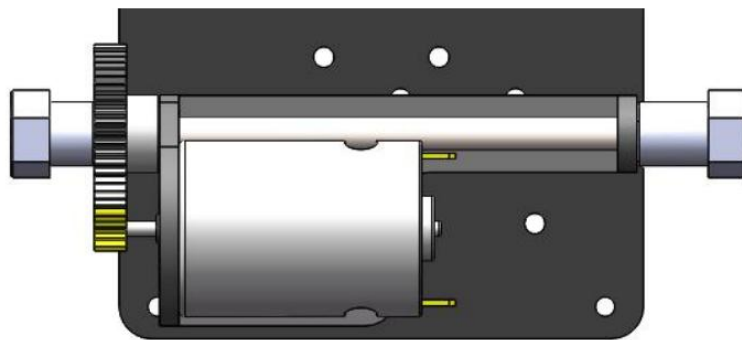
Extended mode installation
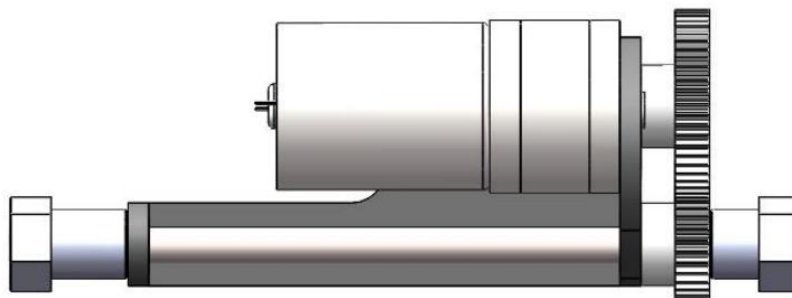
△ Flip the direction of the gear, this fixing method can fix the big gear firmly.
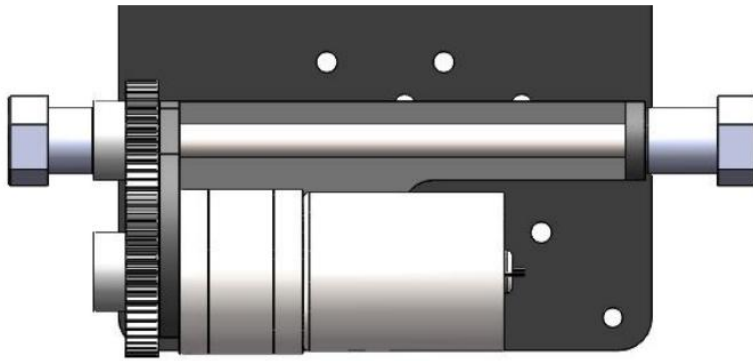
△Increase the front space, which is convenient for installing accessories such as batteries with larger capacity or size.

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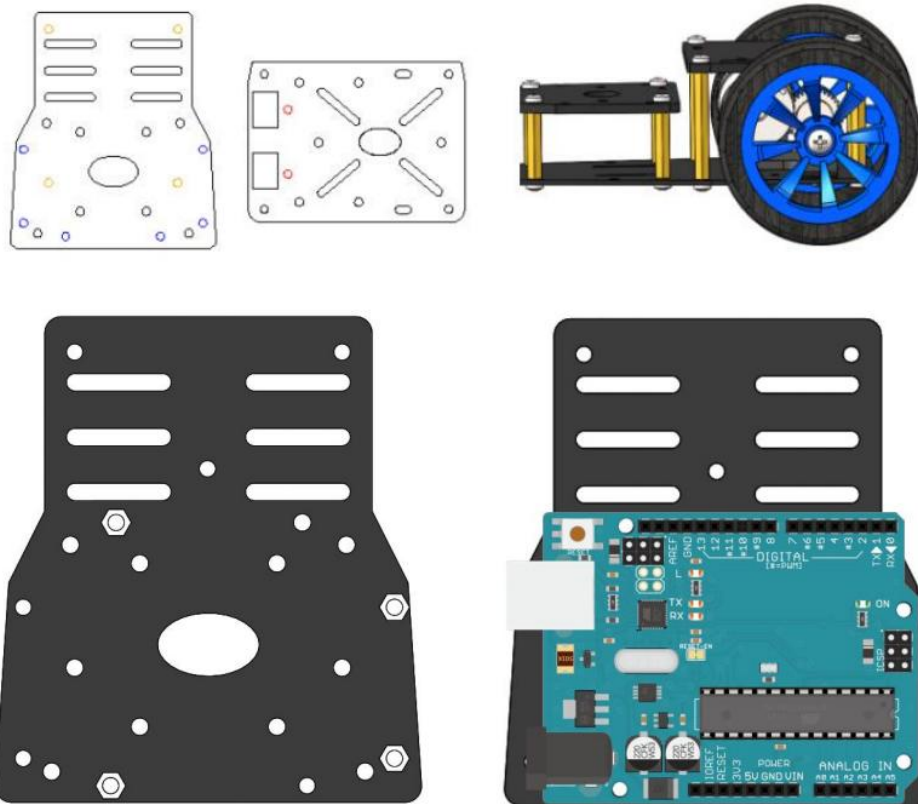
2.6 Anti-collision cotton

● The red circle is a copper pillar fixing hole, and the anti-collision cotton is pressed with a gasket.

● M3 * 8mm screw x 8   ● M3*16mm copper pillar x 4

● M3 spacer x 4

2.7 Acrylic upper chassis

- Please fix the motherboard first and then fix it to the copper pillar, so as to avoid multiple disassembly and fixation, and the switch is connected in series in the positive electrode.

- Blue: Arduino uno motherboard retention holes
- M3 * 22mm copper pillar x 4
- Red: PS2 adapter plate fixing hole
- M3 * 8 screws x 16
- Orange: Raspberry Pi fixing hole
- M3 * 35mm copper pillar x 4
- Rectangular: boat-type switch hole

Switch module wiring method, the black wire is directly from the power supply to the controller, and a switch is connected in series in the middle of the red wire to make it disconnect and conduct to achieve the control effect.

② Notes

- This product has no waterproof function and is strictly prohibited to be used in water or humid environments.

- Disable reverse module power supply.

- Short circuits of positive and negative electrodes are prohibited.