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### 01 Warnings

- Please carefully check power devices and manual of car frame to ensure the power pairing is reasonable. Avoid wrong pairing to overload and damage the motor.
- Always wire up all the parts of the equipment carefully. If any of the connections come loose as a result of vibration, your model RC may lose control.
  Never allow the motor case to get 85 degrees Celsius (185 degrees Fahrenheit) because the motor maybe damaged by high temperature.
- If the motor stops during running, please confirm whether the carbon brush is stuck or not.

# **02** Specifications





<sup>1.</sup> Install the motor

There are 4 motor mounting holes in M3 specification, and the mounting holes are 5mm in depth, before installing the motor on the vehicle, please carefully confirm whether the specification of the screws is appropriate according to the thickness of the motor mounting plate to avoid damage to the motor due to too long screws.

- 2. How to Connect the Motor to an ESC
- As shown in the figure above, connect the esc with the two wires of the motor. If the motor rotation direction is incorrect, it can be adjusted by exchanging the positions of the two wires of the motor.
- 3. Inspection Before power on the esc, please check the reliability of the motor installation and the correctness of all connections.

## **04** Timing Adjustment

As shown in the right figure, the motor has an adjustable timing range from - 20 degrees to + 20 degrees, and the default value is 0 degrees. The timing can be adjusted by unfastening the two screws of the rear end plate of the motor and rotating the rear end plate.

Timing adjustment mechanism: When the motor rotation direction is CCW (counterclockwise), the effective range of timing is between 0 and + 20 degrees, that is, adjust the timing in the direction of + 20 degrees, the motor rpm will increase; When the motor rotation direction is CW (clockwise), the effective range of timing is between 0 and - 20 degrees, that is, adjust the timing in the direction of - 20 degrees, the motor rpm will increase. Note:

- 1. CCW (counter clockwise) and CW (clockwise) directions are defined as the rotation direction of the motor when the output shaft of the motor faces the face.
- Adjusting the timing will increase the rpm of the motor, so the running current will also increase. Therefore, please adjust it carefully according to the load.

### **05** Gearing

- Reasonable selection of gear ratio is very important. Improper gear ratio may bring you great loss. You can select the gear ratio according to the following points! **1. The running temperature of the motor** The motor temperature should be lower than 85 degrees Celsius (185 degrees Fahrenheit) in operation. Because high temperature may cause the
- The motor temperature should be lower than 85 degrees Celsius (185 degrees Fahrenheit) in operation. Because high temperature may cause the magnets to get demagnetized, the coil to get melt and short circuited, and the ESC to get damaged. A suitable gearing ratio can effectively prevent the motor from overheating.
- 2. The principle of selecting gear ratio To avoid the possible damage to ESC and motor caused by the overheat, please start with a small pinion/a big FDR and check the motor temperature regularly. If the motor and ESC temperature always stay at a low level during the running, you can change a big pinion/a low FDR and also check the motor temperature regularly to ensure that the new FDR is suitable for your vehicle, local weather and track condition. (Note: For the safety of electric devices, please check the ESC and motor temperature regularly.)

