



Hobbywing JUSTOCK Handout Sensored Brushless Motor User Manual

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Safety Notes

This product is NOT a toy and it is for use by adults and teens over 14 only, so please keep it out of children's reach. Please keep the following points in mind; otherwise, it may damage the product and cause property loss and physical injuries to users.

- Never leave this product unsupervised when it is powered on. If any problem occurs, the product may cause a fire and jeopardize peripheral devices.
- Please check wire sequences between the ESC & the motor carefully before the connection, to avoid any possible mistakes.
- Please insure all the wires and interconnecting pieces are well insulated before the connection, as short circuits may damage the product.
- Never allow water, oil, fuel or other conducting liquids to get inside this product or other electronic parts, as these liquids may contain harmful minerals for electrical circuits. If that really happens, please turn off the device immediately, and then clear and blow-dry it carefully.
- Please read through manuals of each power equipment (like ESC, motor, battery, etc) and chassis to ensure the power system configuration is rational before the use, as the incorrect power system configuration may result in overload and eventually damage the equipments.
- Prohibit the full throttle operation before the pinion installation. Under non-loaded circumstances, over-high RPM may cause damage to the motor.
- Make sure all the parts are well connected, as misconnection or poor connection may lead to abnormal control, damage or other unpredictable problems.
- Never let the temperature of the motor can (shell) exceeds 90°C (194°F), otherwise the motor is likely to be damaged and (or) the rotor will be demagnetized.

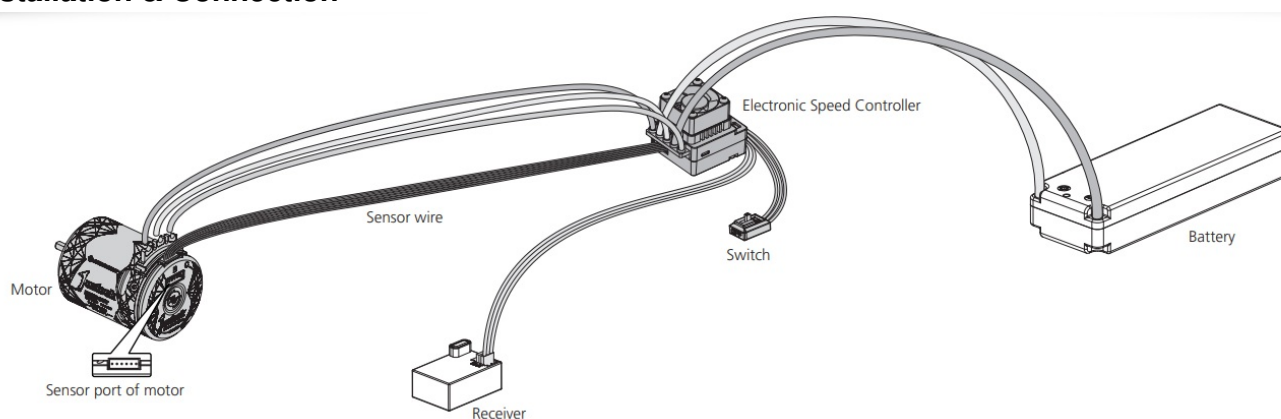
Features

- The motor adopts 4-pole 12 slot core. Compared with the 2-pole motor of the same specification, the output power is increased by more than 25%, the efficiency of the rear section is increased by more than 10%, and the maximum temperature can be reduced by 50%.
- Built in high-precision Hall sensor and magnetic ring greatly improve the consistency of Hall output, ensure the stable running of the motor in sensor mode, and make the motor have excellent linearity.
- Dual sensor port design to meet various wiring needs.
- The use of a high-performance stator core, 200 ° C high temperature resistant enameled wire, high-precision and high-strength bearing and explosion-proof structure rotor provide guarantee for the excellent performance and lasting durability of the motor.

Specifications

PN	Model	KV (No-load)	Li P o	Resistance	No-load Current	Dimension (mm)	Shaft * (mm)	Pole	Weight	Applications
304080 18	JUSTOCK Hand out Spec-13.5T	3200KV	2 ~ 3 S	0.0174	2.7A	Ø=36 mm L =48.5 mm	Ø=3.1 75mm L=12.4 mm	4	147g	1/10 STOCK
304080 17	JUSTOCK Hand out Spec-17.5T	2600KV		0.0244	2.2A				148.5 g	
304080 16	JUSTOCK Hand out Spec-21.5T	2100KV		0.0398	1.7A				148g	

Installation & Connection



1. To Install the Motor

Screws used for installation are 3mm in diameter & 5mm in length. Before mounting the motor onto the vehicle, please ensure that all the screws are applicable to avoid damaging the motor. In general it's ok to adopt screws which are 3 mm in diameter and less than 8mm in length; the specific length is up to the chassis size.

2. To Connect the Motor

- Three power wires need to be connected to the motor, Please note the ESC mark while connecting ESC

output wires to motor power wires and ensure connections are: A-A, B-B and C-C.

- If you are using a sensored ESC, please insure Hall-sensor wires are clean and undamaged; then connect them in the correct direction to the sensor ports of the motor & the ESC respectively.

Warning: In such a case, the wire sequence of the ESC and the motor must strictly follow the rules of A-A, B-B and C-C. Do not change the wires sequence.

- While if the ESC is a sensorless one, then connect the motor and the ESC according to the above way may cause the motor to rotate in the opposite direction, because definitions of phase (#A / #B / #C) are different among manufacturers, at this time you only need to swap any of two wire connections.

3. Checkup

Recheck the installation and all the connections carefully before turning on the power.

Gear Selection

It is very important to select a reasonable gear ratio, as the inappropriate selection may cause great loss to users. Please select the correct gear ratio according to the following points!

1. Operating Temperature of the Motor

During the operation, the motor temperature should be lower than 90°C (194°F). Temperatures above 90°C will demagnetize the magnet & may melt the coils and eventually damage the ESC (because of strong current).

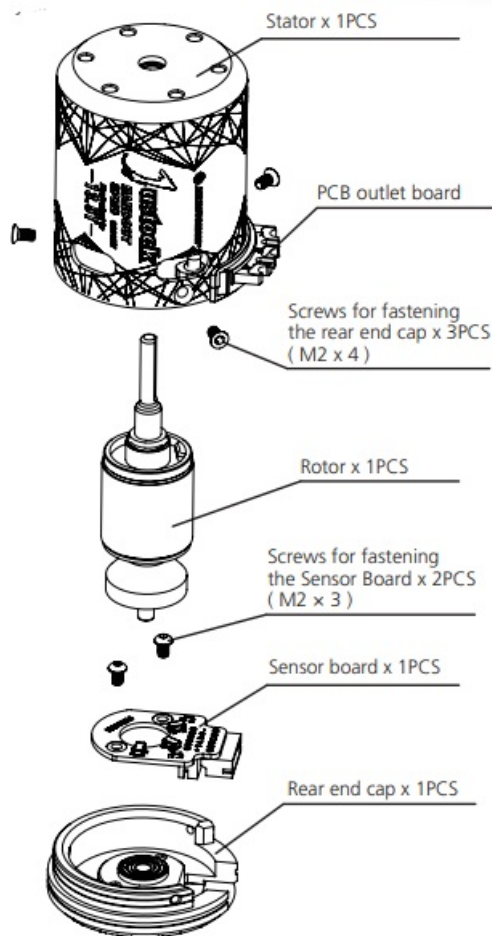
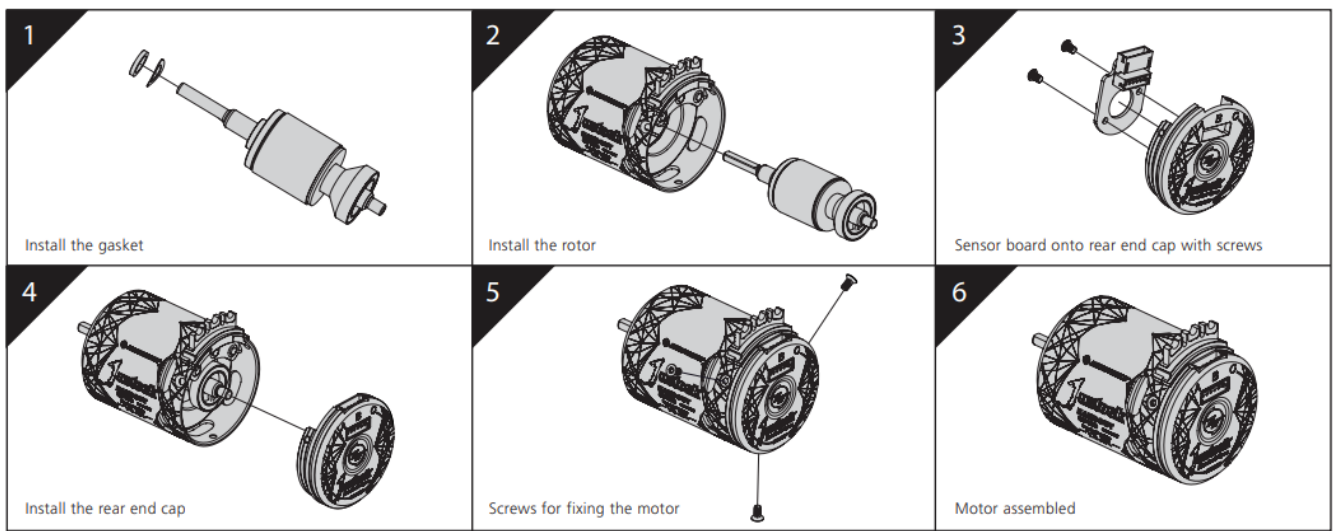
Therefore, the most effective way to prevent over-heat is to select the right gear ratio.

2. Principle of Gear Selection

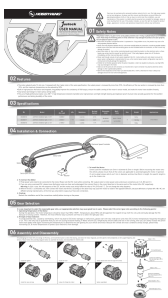
To avoid potential risks, caused by overheating, which may lead to ESC/motor damage or malfunction, please start with very small pinion and check ESC & motor temperatures frequently throughout a run. This is the only way to guarantee that you are not causing excessive heating. If Motor and the ESC temperatures remain stable and low in the running, then you can slowly increase the pinion (with more teeth) while again monitoring the temperatures to determine the safe gearing for your vehicle and motor. Because the climate and track conditions always change, please keep monitoring ESC & motor temperatures to protect your electronics from damage.

Assembly and Disassembly

For prolonging the motor life and raising its efficiency, we recommend users to check the bearing, and clean the motor regularly; and the specific interval depends on the usage frequency and terrains. Please follow the assembly diagram below to assemble the motor, and disassemble in reverse order.



Documents / Resources



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