

USER MANUAL

QUICRUN

Sensored Brushless Motor
QUICRUN 3650SD G2

20161126



Thank you for purchasing the "QUICRUN 3650 SENSORED G2" brushless motor(s) for RC cars! The high power system can be very dangerous, so please read this manual carefully before using and follow the operating procedures strictly. In that we have no control over the installation, use and maintenance of this product, no liability shall be assumed nor accepted for damages, losses or costs resulting from the use of this product. Besides, we own the right to change the product design, appearance, functions and operational requirements without any notifications.

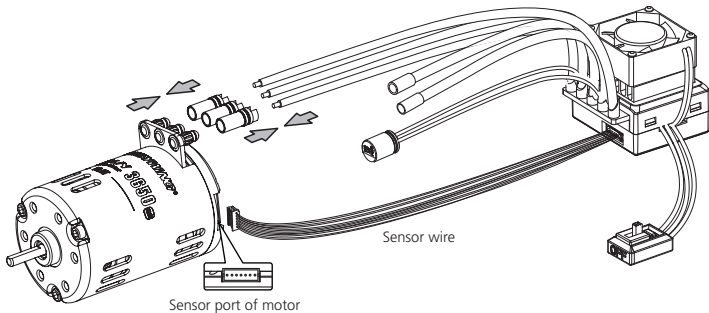
01 Safety Notes



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.

02 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 7mm in length; the specific length is up to the chassis size.

2. To Connect the Motor

- 1) Three power wires need to be connected to the motor, and they often differ in colors: Phase wire A is Blue, Phase wire B is Yellow and Phase wire C is Orange. 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.
- 2) 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.
- 3) 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.

03 Specifications

PN	Model	KV (No-load)	LiPo	Resistance	No-load Current	Dimension (mm)	shaft * (mm)	Pole	Weight	Applicable
30404312	QUICRUN-3650SD-6.5T-G2	5750	2S	0.0066 Ω	4.6A	Ø=36mm (1.417in)	Ø=3.17mm (0.125in)	2	194g (6.843oz)	1:10, 1:12 On-Road (Truggy / F1 / Monster) & Off-Road (Buggy / 2WD SC Truck / Truck) STOCK / SPORT Race (choose the motor base on competition rules.) Free / casual run for new beginners. Rock Crawler (21.5T / 25.5T only)
30404311	QUICRUN-3650SD-8.5T-G2	4560		0.0125 Ω	3.2A				186g (6.561oz)	
30404309	QUICRUN-3650SD-10.5T-G2	3600		0.0183 Ω	2.8A				186g (6.561oz)	
30404310	QUICRUN-3650SD-13.5T-G2	2850	2~3S	0.0289 Ω	2.4A	L=52.8mm (2.079in)	L=15mm (0.591in)		186g (6.561oz)	
30404306	QUICRUN-3650SD-17.5T-G2	2170		0.0488 Ω	1.6A				187g (6.596oz)	
30404307	QUICRUN-3650SD-21.5T-G2	1800		0.0747 Ω	1.3A				187g (6.596oz)	
30404308	QUICRUN-3650SD-25.5T-G2	1520		0.1 Ω	1.1A				186g (6.561oz)	

04 Gear Selection (IMPORTANT!)

It is very important to select the reasonable gear ratio, as 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.

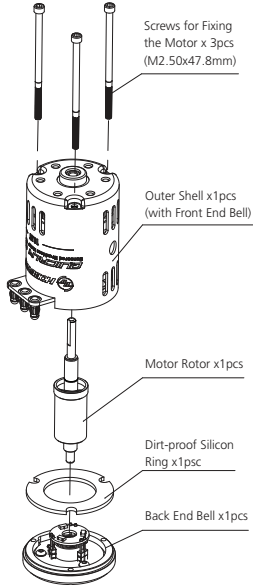
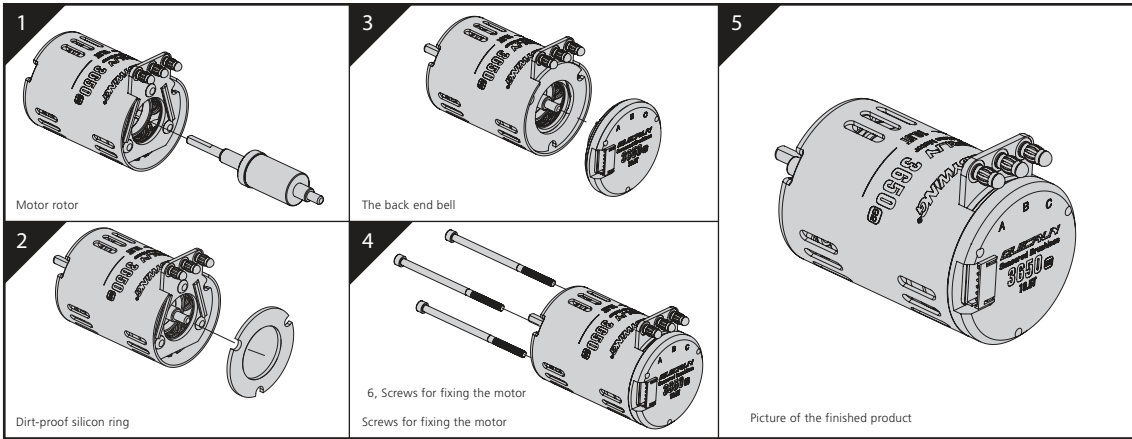
3. Gear Ratio(s) Suggested

The below form shows some rough data about gear ratios (these recommended ratios are reference values when setting the ESC to the Zero Timing Mode). If you don't know how to set the suitable gear ratio, please begin with a big ratio (i.e. small pinion) and then adjust as required, or consult with on-site drivers who are using the same power unit for basic information.

Vehicle Type	Battery	6.5T	8.5T	10.5T	13.5T	17.5T	21.5T	25.5T
Touring Car (for Small track)	7.4V LiPo	8.0:1	7.0:1	5.5:1	4.7:1	4.0:1	3.5:1	3.2:1
Touring Car (for Big track)	7.4V LiPo	7.0:1	6.3:1	5.0:1	4.0:1	3.5:1	3.0:1	2.7:1
1/12 Touring Car	3.7V LiPo	35mm	38mm	42mm	51mm	66mm	66mm	66mm
2WD Buggy	7.4V LiPo	10.3:1	8.5:1	8.0:1	7.0:1	6.0:1	5.5:1	5.2:1
4WD Buggy	7.4V LiPo	10.8:1	8.9:1	8.0:1	7.0:1	6.0:1	5.5:1	5.2:1

05 Maintenance

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 reserve order.



Optional Accessories

Replaceable Part	Part No.	Product Name	Specification
Bearing	30820001	540 MOTOR BEARING-3.175	R2ZZ bearing, 3.175 x 9.525 x 3.967mm