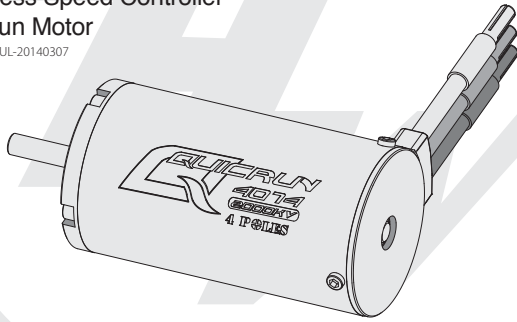


# User Manual

## Brushless Speed Controller

### QuicRun Motor

HW-SM312DUL-20140307



### Instruction

Thank you for purchasing the "QUICRUN 2435/3656/4074" brushless motor(s) for RC cars! The high power system can be very dangerous, so please read this manual carefully before using and strictly follow the operating procedures in use. 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.

### 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 will cause a fire and jeopardize peripheral devices.
- Please insure all the wires and interconnecting pieces are well insulated before the connection, as short circuits may damage the product.
- Please read through manuals of each power plant and chassis to ensure the power match is rational before the use, as the incorrect power match may result in overload and eventually damage the motor.
- Prohibit the full throttle operation before installing the pinion. 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 shell exceeds 90°C (194°F), otherwise the motor will be damaged and the rotor will be demagnetized.

### Installation & Connection

#### To Install the Motor:

- Two types of screws used for installation: 2.6mm or 3mm in diameter (M2.6 / M3: 4PCS for each size) for Motor 2435, 3mm in diameter (M3) for Motor 3656 / 4074.
- Depth of each type of screw hole: 2435≤4mm, 3656≤5mm, 4074≤7mm.
- Before mounting the motor onto the vehicle, please ensure that all the screws are applicable to avoid damaging the motor. In general it's okay to use screws, 2.6mm or 3mm in diameter (M2.6 / M3) and less than 6mm in length for installing Motor 2435; 3mm in diameter (M3) and shorter than 8mm in length for installing Motor 3656; 3mm in diameter (M3) and less than 10mm in length for mounting Motor 4074; and the specific length is up to the respective chassis size.

#### To Connect the Motor:

Three input / power wires need to be plugged into the motor, and they often differ in colors: (phase) wire A is Blue, (phase) wire B is Yellow and (phase) wire C is Orange. When connecting ESC output wires to motor wires, please ensure the connections are: A-A, B-B and C-C.

**Note 1:** As definitions of triple-phase (#A / #B / #C) are different among manufacturers, connect the motor and the ESC according to the above method may cause the motor rotates in the opposite direction, at this time you only need to swap any of two wire connections.

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

### Specifications

Model	PN	KV (No-load)	LiPo	R. (Ω)	No-load Current	Max. Output Power	C. at the point of M.O.P.	O.D.* L (mm)	D of the shaft* L of the projecting part (mm)	Poles	W (g)	Applicable
QUICRUN-2435-4500KV	30404010001	4500KV	2~3S	0.0498	1.5A	150W	33A	24.0x36.5	2.00x14	2	73	1:18&1:16 On / Off-road / Truggy / Monster
QUICRUN-3656-3800KV	30404020001	3800KV	2~3S	0.0055	2.3A	420W	110A	36.0x56.0	3.17x16	4	232	1:10 On / Off-road / Truggy / Monster
QUICRUN-4074-2000KV	30404030001	2000KV	2~6S	0.0065	3.1A	2600W	160A	39.8x73.8	5.00x20	4	393	1:8 Truggy / Monster

**Note 2:** (C=Current; O.D.=Outer Diameter; D=Diameter; M=Maximum; L=Length; W=Weight)

- The maximum output power is the value obtained when the voltage is 7.4V / 22.2V (7.4V for Motor 2435 & Motor 3656, 22.2V for Motor 4074), the ESC timing is 0°. It is neither the maximum input power nor the rated power. The calculation formula used here is: RPM x Torque / 9550.
- The value of the maximum output power is always lower than the value of the input power. Therefore, it's meaningless to compare the maximum output power value mentioned in the form above with the input power value of motors of other brands. Besides, values in the form above may differ from the data of other factories because of different test benches.
- The input current at the point of the maximum output power has some guiding significance for the load configuration and the ESC selection, here we strongly suggest users NOT make the load quota bigger than the maximum output power point (that means please don't make the input current larger than the current of the maximum output power point.)

### Gear Selection (IMPORTANT!)

It is very important to select the reasonable gear ratio, as inappropriate selection may cause great loss to users.

Therefore, please select the correct gear ratio according to the following points!

#### Operating Temperature

During the operation, the motor temperature should be lower than 90°C (194°F). Temperatures above 90°C will weaken the magnet & may partly 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.

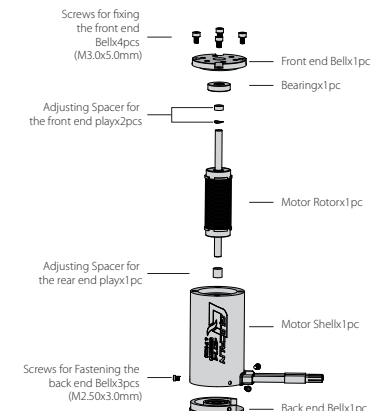
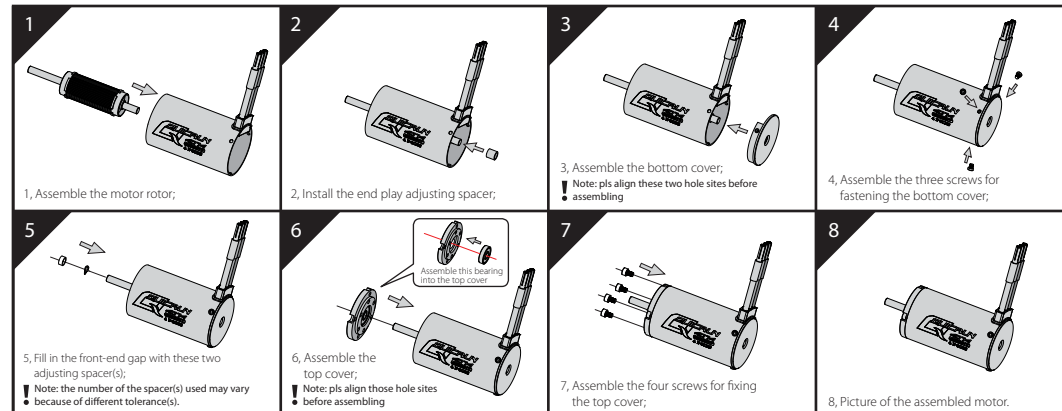
#### Principle of Gear Selection

To avoid potential risks, caused by overheating, which may lead to ESC/motor damage or malfunction, please start with very small pinion sizes and check ESC & motor temperatures at multiple times 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 size while again monitoring the temperatures to determine the safe gearing for your vehicle, motor, climate and track conditions. Because these variables can change or be modified, so please keep monitoring ESC & motor temperatures to protect your electronics from damage.

### 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 picture (of Motor 4074) below to install the motor, and disassemble in reserve order.

**Note 3:** Because of special craftsmanship, neither Motor 2435 nor Motor 3656 can be disassembled. For avoid damaging the motor, please do not try to dismantle these 2 motors.



\* For hi-resolution, please visit our website at: [www.hobbywing.com](http://www.hobbywing.com)