

User Manual of RTR Series Sensorless Brushless Motor



Thank you for purchasing the RTR series motor. Brushless power systems can be very dangerous, any improper use may cause personal injury and damage to the product and related devices. We strongly recommend reading through this user manual before use. Because we have no control over the use, installation, or maintenance of this product, no liability may be assumed for any damages or losses resulting from the use of this product. We do not assume responsibility for any losses caused by unauthorized modifications to our product.

Warnings

- Read through the manuals of all power devices and chassis and ensure the power configuration is rational before using this unit.
- Ensure all devices are well connected, in order to prevent poor connection that may cause your vehicle to lose control or other unpredictable issues such as damage to the device.
- Never hit full throttle before installing the pinion, as high speed rotation may cause damage to the motor in circumstances of no load
- For 36XX series of motors, please stop using the motor if the case temperature goes above 90°C /194°F; for 4XXX series of motors, please stop using the motor if the case temperature goes above 100°C/212°F; because high temperature may cause the rotor to demagnetize and result in some irreversible damage to the motor.

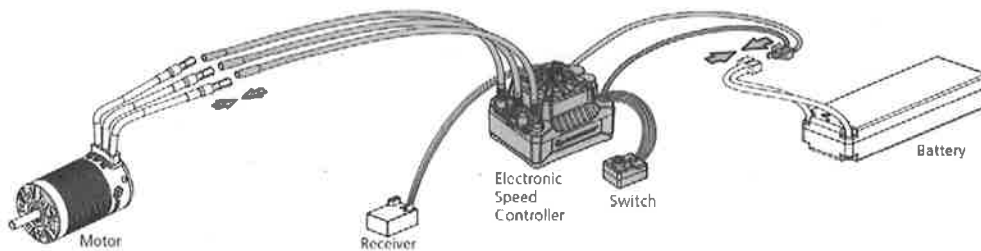
Specifications

Model	KV (No-load)	R. (Ω)	No-load Current (A)	Dime nsion (mm)	shaft * (mm)	Lipo	Pole	W(g)	Applicable
3652SL-2150KV-RTR	2150	0.0222	2.3	Φ=35 L=52	Φ=3.175 L=15	2-3S	4	196	1/10th Buggy, On-road, and Light-weight 2WD SCT/Truck/Mon ster Truck
3652SL-2300KV-RTR	2300	0.0185	2.5					198	
3652SL-2500KV-RTR	2500	0.0176	2.7					196	
3652SL-2700KV-RTR	2700	0.0136	2.9					200	
3652SL-3000KV-RTR	3000	0.0126	3.3					198	
3652SL-3250KV-RTR	3250	0.0093	3.9					204	
3652SL-3500KV-RTR	3500	0.0085	4.2					199	
3652SL-4000KV-RTR	4000	0.0063	4.4					207	
3652SL-4600KV-RTR	4600	0.0059	3.9			2S		200	
3652SL-5400KV-RTR	5400	0.004	4.9					210	
3660SL-2000KV-Φ 3.175-RTR	2000	0.0154	2.5	Φ=36 L=60	Φ=3.175 L=18.5	2-3S	4	245	1/10th SCT/Truck/Mon ster Truck
3660SL-2200KV-Φ 3.175-RTR	2200	0.0124	2.2					247	
3660SL-2450KV-Φ 3.175-RTR	2450	0.0112	2.4					243	
3660SL-2750KV-Φ 3.175-RTR	2750	0.0083	2.8					246	
3660SL-3150KV-Φ 3.175-RTR	3150	0.0073	3.5					243	
3660SL-3700KV-Φ 3.175-RTR	3700	0.005	4.1					254	
3660SL-2000KV-Φ 5-RTR	2000	0.0154	2.5		Φ=5 L=18.5			245	
3660SL-2200KV-Φ 5-RTR	2200	0.0124	2.2					248	
3660SL-2450KV-Φ 5-RTR	2450	0.0112	2.4					244	
3660SL-2750KV-Φ 5-RTR	2750	0.0083	2.8					247	
3660SL-3150KV-Φ 5-RTR	3150	0.0073	3.5					244	
3660SL-3700KV-Φ 5-RTR	3700	0.005	4.1					255	

3668SL-1700KV-RTR	1700	0.0138	1.6	Φ=36 L=68	Φ=5 L=18.5	2-4S	4	297	1/10th SCT/Truck/Monster Truck & 1/8th On-road/Buggy/Truck (Light-weight)
3668SL-1900KV-RTR	1900	0.0129	2.0					294	
3668SL-2150KV-RTR	2150	0.0098	2.3					300	
3668SL-2450KV-RTR	2450	0.0085	2.7					294	
3668SL-2850KV-RTR	2850	0.0055	2.8					305	
4268SL-1600KV-RTR	1600	0.0155	3.5	Φ=42 L=68	Φ=5 L=18	2-6S	4	338	1/8th Buggy/SCT/Truck/Monster Truck
4268SL-1900KV-RTR	1900	0.0104	4					348	
4268SL-2100KV-RTR	2100	0.0096	4.5					340	
4268SL-2600KV-RTR	2600	0.0062	5	2-4S	342	1/8th On-road/Buggy			
4074SL-2000KV-RTR	2000	0.0063	4.5	Φ=40 L=74	Φ=5 L=18.5	2-6S		401	1/8th Truck/Monster Truck
4074SL-2200KV-RTR	2200	0.0062	5	390					
4274SL-2000KV-RTR	2000	0.0060	4.5	Φ=42 L=74				412	
4274SL-2200KV-RTR	2200	0.0059	5	400					

Note: For the 3652 motor(s) with the KV rating of 4000 and below, the no-load current is measured at the input voltage of 12V. For the 3652 motor(s) with the KV rating of over 4000, the no-load current is measured at the input voltage of 8V.

Installation & Connection



1. How to Mount the Motor into a RC vehicle

For the 36XX series of motors, the M3 mounting screws are needed. Because the mounting holes are 6mm in depth, so we don't recommend using the M3 screws longer than 8mm to do the installation.

For the 4XXX series of motors, the M3 & M4 mounting screws (four pieces per each) are needed. Because the mounting holes are 8mm in depth, so we don't recommend using the M3 & M4 screws longer than 10mm to do the installation.

2. How to Connect the Motor to an ESC

There is no polarity on the A/B/C three ESC-to-motor wires, so do not worry about how you connect them initially. You may find it necessary to swap two wires if the motor runs in reverse.

3. Recheck the Installation & Connections

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

FDR/Gear Ratio Selection

It's important to select the FDR/gear ratio properly, as improper FDR/gear ratio may cause you great loss. Therefore, please choose the gear ratio by referring to the following points!

1. Operating Temperature of the Motor

During the operation, the case temperature of the 36XX series of motors should be lower than 90°C (194°F), the case temperature of the 4XXX series of motors should be lower than 100°C (212°F), because high temperature (higher than the regulated value) will weaken the magnet and may partly melt the coils and eventually damage the ESC (because of strong current). Therefore, the most effective way to prevent overheat is to select the right gear ratio.

2. Principle of Gear Ratio Selection

To avoid potential risks such as ESC/motor damage or malfunction caused by overheat, please start with a very small pinion first and check the ESC & motor temperatures regularly throughout the run. This is the only way to guarantee that your motor won't overheat. If the motor and ESC temperatures remain stable and low in the running, then you can slowly increase the pinion size while monitoring temperatures to determine the safe gearing for your vehicle, climate and track condition. Because these elements may change, so please keep monitoring the ESC & motor temperatures to protect your electronics from damage.