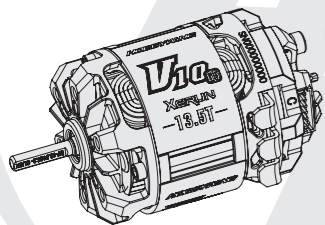


# XERUN V10 G5 USER MANUAL



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HW-SMB568DUL01



Thank you for purchasing this HOBBYWING product. Improper usage can be dangerous and may damage the product and related devices. Please take your time and read through the following instructions before you start using the motor. We have the right to modify the product design, appearance, features and usage requirements without notification. We, Hobbywing, are only responsible for our product cost and nothing else are result of using our product.



## 01 CAUTIONS

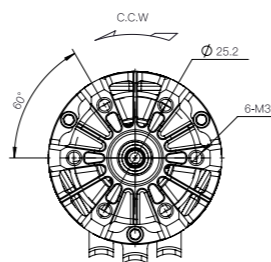
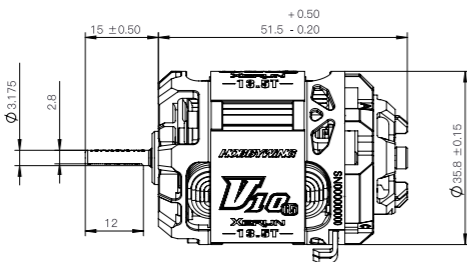
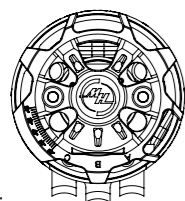
- Please carefully check the wire sequence between the ESC and the motor before connecting them to avoid any incorrect wire sequence.
- Please ensure that all devices are connected properly. If the connection is poor or short circuited, you may not be able to control the car properly, or damage the equipment.
- Read the manuals of all the items being used in the build. Ensure gearing, setup, and overall install is correct and reasonable.
- Never allow this product or other electronic components to come in contact with water, oil, fuel or other electro-conductive liquids. If it happens, stop the use of the product immediately and clean and dry completely before testing.
- Use a minimum of 60W soldering iron, otherwise the motor may be damaged from overheating due to heat transfer from an under powered soldering iron.
- Stop usage if the motor exceeds 100°C/212°F. High temperature will damage the motor and cause the rotor to weaken. Hobbywing recommends activating the "Motor Thermal Protection" (of the ESC).

## 02 FEATURES

- Exceptional performance designed for top level stock/spec class racing.
- Compared to the previous generation of motor, the weight has been reduced by about 8.5%, and the center of gravity has moved forward, providing improved chassis tuning and handling.
- The coil is exposed for direct heat dissipation, and the heat dissipation hole area has increased by more than 15% compared to the previous generation, resulting in better heat dissipation and lower temperature rise.
- The sensor boards innovative design allows hall sensor adjustability that provides the a new layer of improved tuning.
- With the use of new rotor materials, high quality bearings, heavy copper solder tabs, and meticulously wound stators, the new G5 will provide outstanding performance, consistency, and durability.

## 03 SPECIFICATIONS

Model	PN	KV (No-load)	LiPos	Resistance (Ω)	No-load Current (A)	Diameter/Length (mm)	Shaft Diameter/Length (mm)	Stock Rotor	Bearing size (mm)	Poles	Weight (g)	Applications
XERUN V10 G5 13.5T	30401762	4000KV		0.0208Ω	5.4A			Φ7-12.5*25.2-GUS (PN: 30820461)				
XERUN V10 G5 13.5T-TORQUE	30401763	3900KV		0.0208Ω	6.0A						138g	1/10&1/12 STOCK Racing
XERUN V10 G5 17.5T-TORQUE	30401764	3000KV	1-3S	0.0342Ω	5.0A	Φ=35.8mm(1.41in) L=51.5mm(2.03in)	Φ=3.175mm(0.125in) L=15mm(0.59in)	Φ7-12.5*25.2-JUS (PN:30820462)	Front: D9*D4*14 Rear: D8*D3*14	2		
XERUN V10 G5 21.5T-TORQUE	30401767	2500KV		0.0528Ω	3.5A							
XERUN V10 G5 25.5T-TORQUE	30401768	2100KV		0.0775Ω	3.0A						135g	

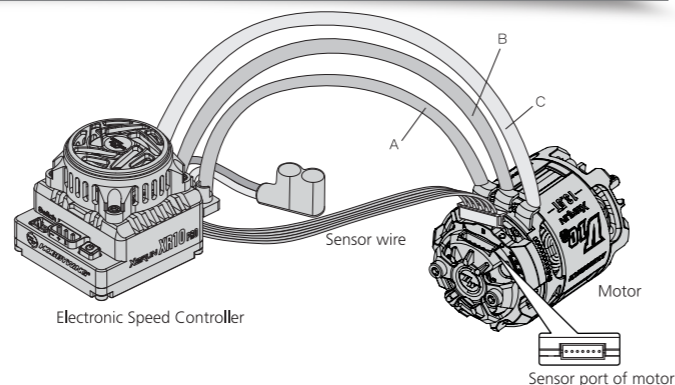


### Notes:

- The KV value is measured when no load is applied to the motor, the motor timing is set to the value by default and the ESC timing is set to Zero.
- Never allow the motor to overheat, high temperatures may affect its performance. Please let the motor cool down before using it again.

## 04 INSTALLATION & CONNECTION

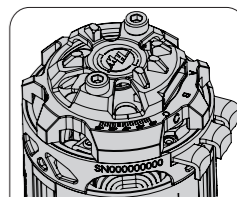
- Installation of the motor**  
M3 motor screws are needed. Endbell mounting is 4mm in depth. Be sure to carefully check your motor screws are the correct length. Screws that are Too Long, will cause severe damage to your electronics.
- How to Connect the Motor to an ESC**  
When connecting the motor and esc, please pay attention to the marked three-phase position of A, B and C to ensure that the three wires of the motor and esc are connected correspondingly (A-A, B-B, C-C), incorrect connection will result in damage to the ESC and Motor. And then connect the sensor cable to the motor and ESC.
- Inspection**  
Before powering on the esc, please check the motor installation and the order of all connections.



## 05 TIMING ADJUSTMENT

The motor provides a wide end-bell timing adjustable range of 20-60 degrees, the following are the methods & principles you can follow when adjusting the timing.

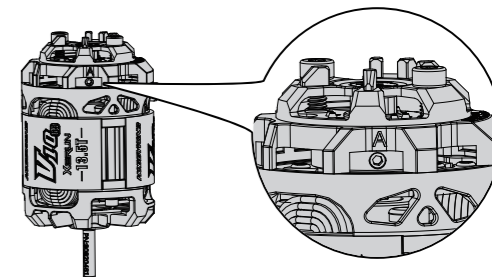
- You can adjust the motor timing after loosening the two screws on the rear end plate. Please adjust the timing as needed according to the mark (white lines) at the rear end of the motor and tighten both screws after the adjustment. For obtaining the optimal performance, you can change the output range and characteristic of your power system through adjusting the motor timing. And the timing is 43 degrees by default. As shown in the picture, turn the rear end plate clockwise can reduce the timing and turn it counter-clockwise can increase the timing.
- Increasing the timing can increase the motor speed (/RPM), while that also increases the motor temperature and reduces the efficiency. Higher timing settings typically require gearing changes. More timing, means a smaller pinion should be used.
- Please ensure your ESC is properly programmed before setting the motor timing. For detailed information about ESC programming, please refer to the user manual of the ESC.
- After the timing adjustment, please ensure that your motor will not get overheat after running a whole pack (i.e. LiPo). The motor temperature can be obtained by reading the data recorded by the ESC or by using temperature measurement equipment. If the temperature is too high, please let the motor cool down first and then test again. If the temperature is still too high, then please reduce the timing or increase the FDR (that is to replace the pinion gear with fewer teeth or spur gear with more teeth.).



### Sensor Fine-Tuning:

The sensor sub assembly inside the motor has 3 screws that are visible externally, these screws are marked A/B/C, they are used to fine tune the sensors alignment and hall phase symmetry when tested on a Hobbywing Tunalyzer. This adjustment allows precise fine tuning for improved overall performance.

Note: A 1.27mm hex screwdriver is required here.



## 06 RECOMMENDED FDR

FDR - Final Drive Ratio - is the total ratio of the spur, the pinion and the vehicles drive train/transmission. Different conditions like track type, grip, tyres, temperature, vehicle weight, transmission type influence the performance of your vehicle and have different requirements on the power system, therefore one FDR can not be applicable for all conditions. Table values are starting FDR for use with Blink (0 esc timing). These are safe starting points. Please test/tune carefully and adjust as required by your test. Higher FDR numbers are safer (Smaller pinion/Larger Spur).

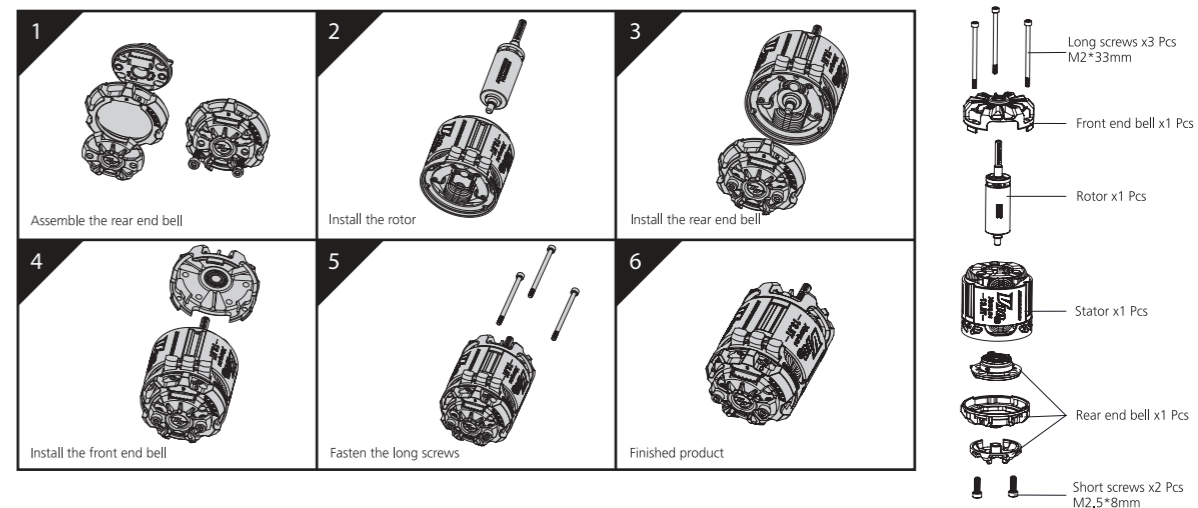
STOCK	TC (Small Track)	TC (Big Track)	2WD Off-road	4WD Off-road
13.5T	4.5	4.0	N/A	6.6
17.5T	4.0	N/A	6.3	N/A
21.5T	3.5	N/A	5.6	N/A



When possible, it is always a great idea to discuss your motor tuning with fellow racers using the same equipment.

## 07 ASSEMBLY & DIS-ASSEMBLY

The motor is designed to be easy to disassemble for any needed maintenance or cleaning. We recommend occasional checks of the motor bearings and cleaning of the motor as needed based on the conditions. See the steps below for motor assembly. The steps are reversed for disassembly.



### Resources & Specifications

Visit [www.hobbywing.com/en/products/xerun-v10-g5](http://www.hobbywing.com/en/products/xerun-v10-g5) for more details about Xerun V10 G5 Brushless Motor for RC Cars