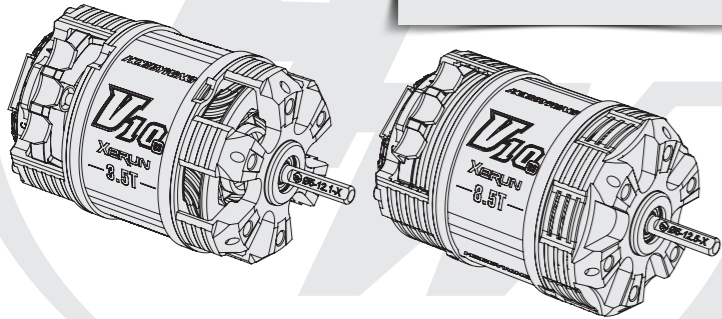


# XERUN V10 G3 USER MANUAL



Thanks for purchasing Hobbywing XERUN V10 G3 motor. This sensored brushless power system is very powerful, any 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

- To avoid short circuits, ensure that all wires and joints must be well insulated before connecting the motor to related devices.
- 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 let it dry carefully.
- Read through the manuals of all power devices and chassis and ensure the power configuration is rational before using this unit.
- Never apply full throttle if the pinion gear is not mounted on, because (under the no-load circumstances) high RPMs may get the motor damaged.
- Please connect all the devices carefully, you may not control the vehicle properly or encounter some unpredictable issues like damaged components if any poor connection exists.
- To avoid possible damage (result from overheat) to the product, please control the soldering time within 5 seconds when soldering the motor wires (a soldering iron with the power of at least 60W is needed).
- Stop immediate usage once the casing of the motor exceeds 100°C/212°F as high temperature may damage the motor and cause the rotor to demagnetize. Hobbywing recommends activating the "Motor Thermal Protection" (of the ESC).

## 02 FEATURES

- It's a motor specially designed for high-level racing. The RMP of G3 Stock motor is significantly improved, the KV & torque are improved by 16% and 4% respectively, compared with the V10 G2 Stock motor.
- Lightweight. The G3 Modified & Stock motors only weigh 161g & 132g respectively, the weights are reduced by 11% & 21% when comparing with the V10 G2 motors.
- The built-in high precision Hall sensor combined with the high precision and balanced rotor guarantee outstanding linearity of the motor.
- The mechanical timing can be adjusted finely and smoothly; the skid-proof lines on the rear end plate of the motor guarantee stability of the timing after adjustment. For G3 Stock motors (10.5T-25.5T), the timing is adjustable from 30 degrees to 60 degrees; for Modified motors (3.5T-8.5T), the timing is adjustable from 20 degrees to 50 degrees.
- The motor case is designed to be easy to dismantle for maintenance purposes and for the replacement of common wearing parts.
- The special shell design which makes the stator core expose to the air maximizes cooling. Big holes on the end plates of 10.5T-21.5T motors further help reduce heat; small holes on the end plates of 5.5T-8.5T motors effectively keep sand or dirt from getting inside and damaging the motor(s).
- The use of high-performance stator core, heat(200°C)-resistant wire, heat(200°C)-resistant rotor with strong structure, imported high precision and high strength bearings, and copper solder tabs with super current endurance guarantees outstanding performance and super durability.
- It's compliant with IFMAR, ROAR, EFRA, BRCA rules, and certified by RoHS, CE, FCC and etc.

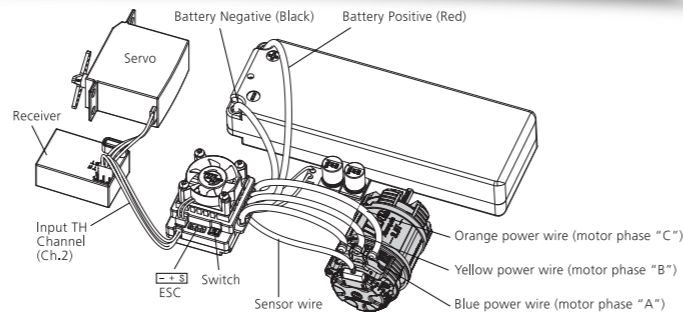
## 03 SPECIFICATIONS

PN	Model (Turns)	KV (No-load)	LiPos	Resistance (Ω)	No-load Current (A)	Max. Output Power (W)	Current @Max. Output Power (A)	Diameter/Length (mm)	Shaft Diameter/Length (mm)	Stock Rotor	Poles	Weight (g)	Applications
30401106	3.5T	9450	1S	0.0018	7.7	462	126	Ø=35.9mm (1.41in)	Ø=3.17mm (0.125in)	Φ5-12.1	2	163 (5.75oz)	Modified Class of 1/10 <sup>th</sup> & 1/12 <sup>th</sup> On-road Racing
30401102	4.5T	7340		0.0029	6.7	457	122					163 (5.75oz)	
30401116	5T	6500	2S	0.0035	5.5	443	118	L=51.2mm (2.01in)	L=13.3mm (0.52in)	Φ5-12.5	2	159 (5.60oz)	Modified Class of 1/10 <sup>th</sup> 4WD Off-road Racing
30401107	5.5T	5900		163 (5.75oz)									
30401117	6T	5500		162 (5.71oz)									
30401109	6.5T	5120		164 (5.78oz)									
30401118	7T	4800		161 (5.68oz)									
30401110	7.5T	4420		161 (5.68oz)									
30401119	8T	4200	160 (5.64oz)										
30401111	8.5T	3970	163 (5.75oz)										
30401112	10.5T	4500	2-3S	0.0158	5.5	260	74	Ø=35.9mm (1.41in)	Ø=3.17mm (0.125in)	Φ7.3-12.5 -U	2	133 (4.69oz)	1/10 <sup>th</sup> Drift, Stock Class of 1/10 <sup>th</sup> On-road Racing
30401103	13.5T	3710		133 (4.69oz)									
30401104	17.5T	2830		131 (4.62oz)									
30401105	21.5T	2250		135 (4.76oz)									
30401113	25.5T	1500		154 (5.43oz)									
30401123	6.5T OnRoad Spec	6300	2S	0.0048	7.4	428	107	35.9/51.2mm (1.41in/2.01in)	3.17/13 (0.125in/0.51in)	Φ7.3-12.3 -U	2	150 (5.29oz)	Modified Class of 1/12 <sup>th</sup> On-road Racing

- 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. The default timing for the 3.5T-8.5T motors is 30 degrees, and the default timing for the 10.5T-25.5T motors is 40 degrees.
  - The V10 6.5T G3 OnRoad Spec motor (PN: 30401123) with big holes on its end plates (by default), which features a much lower internal resistance and a higher KV value, will provide higher RPM and better heat dissipation and is designed for the 1/12th on-road racing and in compliance with the BRCA & EFRA rules.
  - Never allow the motor to get overheat, because high temperatures may affect its performance. Please let the motor cool down before using it again in case that it gets too hot.
  - The input current corresponding to the maximum output power can be instructive for load configuration & ESC selection, we strongly suggest not allowing the load to be higher than the input current corresponding to the maximum output power.

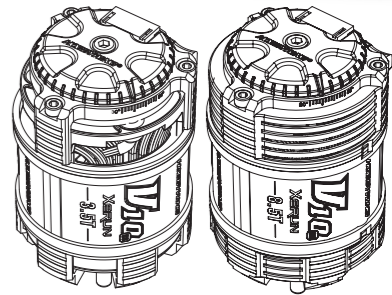
## 04 INSTALLATION & CONNECTION

- The three output wires (on the ESC) need to be soldered onto the motor, the wires are differentiated by colors. In general, Blue/Yellow/Orange represents phase A/B/C respectively. Please note the following points when mounting or connecting the motor.
- The M3 screws with the length (not longer than 8mm) are needed when mounting the motor onto your vehicle.
- Please pay attention to the relevant marks (on the ESC) when soldering/connecting those output wires to the motor and make sure that you will strictly follow the wiring order (between the ESC & the motor) of "A-A, B-B, and C-C".
- Please ensure the sensor cable is clean and undamaged when you're using a sensored ESC. You need to pay attention to the two connectors on the cable when connecting the ESC to the motor.
- Re-check all the connections between the ESC & the motor and ensure that they are all correct (as shown in the diagram) before turning on the ESC.



## 05 TIMING ADJUSTMENT

- The V10 G3 motors provide a wide range of adjustable mechanical timings, the following are the methods & principles you can follow when adjusting the timing.
- You can adjust the motor timing after unfastening the screw 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 fasten the screw 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. For the (10.5T-25.5T) Stock motors, the default timing is 40 degrees; for the (3.5T-8.5T) Modified motors, the default timing is 30 degrees. 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. A high(er) timing usually requires a high(er) ratio.
  - 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). You can get the information about the motor temperature via an infra-red temperature gun or the LCD program & a laptop (with the Hobbywing USB Link APP installed) or the WiFi module & smart phone (with the Hobbywing WiFi Link App installed). 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).



## 06 RECOMMENDED FDR

The FDR (Final Drive Ratio) is the ratio between the angular velocities of the pinion gear and the tyres. In simple terms, the number of laps the motor will rotate when the tyres spin one lap. Different conditions like track type, grip, tyres, temperature, vehicle weight, gearing mode, driving mode influence the performance of your vehicle and have different requirements on the power system, therefore one FDR can not be applicable for all conditions.

All the values in Table One are the FDRs recommended for vehicles using different G3 Modified motors; all the values in Table Two are the FDRs recommended for vehicles using different G3 Stock motors in the Blinky mode. If you don't know how to set the FDR, please refer to the following tables. If no recommended FDR is applicable to your vehicle, please start with a big FDR and then adjust gradually as per the demand.

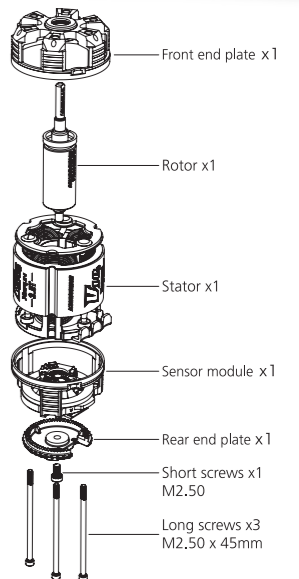
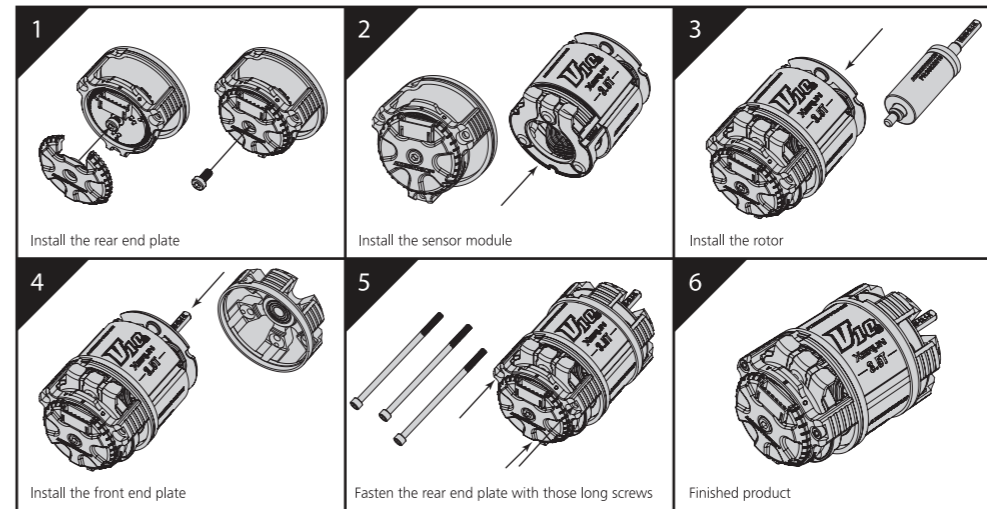
Table One	Modified	3.5T	4.5T	5.5T	6T	6.5T	7T	7.5T	8T	8.5T	Table Two	STOCK	10.5T	13.5T	17.5T	21.5T	25.5T
TC (Small Track)	N/A	8.2: 1	7.8: 1	7.6: 1	7.4: 1	7.3: 1	7.2: 1	7.1: 1	7.0: 1	TC (Small Track)	5.5: 1	4.7: 1	4.0: 1	3.5: 1	3.2: 1		
		7.5: 1	7.0: 1	6.8: 1	6.6: 1	6.4: 1	6.2: 1	6.1: 1	6.0: 1	TC (Big Track)	5.0: 1	4.0: 1	3.5: 1	3.0: 1	2.7: 1		
TC (Big Track)		25mm	29mm	32mm	34mm	35mm	36mm	36mm	37mm	38mm	1/12 <sup>th</sup> TC	42mm	51mm	66mm	66mm	66mm	
2WD Off-road				10.8: 1	10.5: 1	10.0: 1	9.5: 1	9.1: 1	8.7: 1	8.25: 1	2WD Off-road	8.0: 1	7.0: 1	6.0: 1	5.5: 1	5.2: 1	
4WD Off-road				11.8: 1	11.0: 1	10.2: 1	9.7: 1	9.3: 1	8.9: 1	8.5: 1	4WD Off-road	8.0: 1	7.0: 1	6.0: 1	5.5: 1	5.2: 1	
4WD Truck				13.5: 1	13: 1	12.6: 1	12: 1	11.5: 1	11: 1	10.4: 1	4WD Truck	9.0: 1	8.0: 1	7.0: 1	6.5: 1	6.2: 1	

- Notes:**
- For the modified applications (listed above), please do not set the ESC timing to a very high value, because overload may damage your motor. If you have no idea about the timing setting, please start with 0 and increase the value gradually, and ensure the motor temperature won't go above 90°C (194°F).
  - If possible, please exchange ideas with the drivers using the same power system in your community or club for getting the fundamental data applicable to the track you usually run.

## 07 ASSEMBLY & DIS-ASSEMBLY

The XERUN V10 G3 Motor is very strong in construction but also easy to disassemble for maintenance. We recommend checking the bearings and cleaning the motor periodically.

Please follow the steps (as shown below) to assemble the motor. When disassembling the motor, the sequences are reversed.



## 08 PARTS LIST

- The V10 G3 motor contains the following parts:
- Front End Plate x 1Pcs
  - Rotor x 1Pcs
  - Stator x 1Pcs
  - Sensor Module x 1Pcs
  - Rear End Plate x 1Pcs
  - Short Screws (M2.50) x 1Pcs
  - Long Screws (M2.50 x 45mm) x 3Pcs
  - Sensor Wires (80mm, 200mm) x 2Pcs

## 09 OPTIONS

Optional Part	PN	Part Name	Applications (/Motors)	Description
Rotor	30820018	XERUN-V10-G3-Rotor-D7.3*D12.5*t24.1	10.5T-21.5T	It's the standard rotor for the (10.5T-21.5T) Stock motors; with this rotor, torque & RPM of your motor won't be bad.
	30820017	XERUN-V10-G3-Rotor-D5*D12.3*t24.1	3.5T-8.5T	With this rotor, your motor will have the better accelerating and braking linearity and high RPM.
	30820019	XERUN-V10-G3-Rotor-D5*D12.1*t24.1	3.5T-8.5T	With this rotor, your motor will have the better accelerating and braking linearity and be smoother during the high-speed operation. It's specially applicable for the track with intermediate/low grip.
	30820020	XERUN-V10-G3-Rotor-D5*D12.5*t24.1	3.5T-8.5T	It's the standard rotor for the 5.5T-8.5T motors.
	30820400	XERUN-V10-G3-Rotor-D7.3*D12.3*t25.2	25.5T	It's a rotor specially designed for the 25.5T motor.