

Thanks for purchasing Hobbywing Xerun V10 Sensored Competition Motor. High power motor can be very dangerous, so please read through this manual carefully. Given that we have no control over the correct use, installation, application, or maintenance of our products, no liability shall be assumed nor accepted for any damages, losses or costs resulting from the use of the product. Any claims arising from the operating, failure or malfunctioning etc. will be denied. We assume no liability for personal injury and/or consequential damages resulting from our product or our workmanship. As far as is legally permitted, the obligation to compensation is limited to the invoice amount of the affected product.

FEATURES

- ▶ Designed to withstand extreme levels of use at its highest peak performance.
- ▶ Complete new CNC cut motor case with extra front spoke ventilation slots.
- ▶ Works as a sensored unit and also sensorless without the sensor cable attached.
- ▶ Multiple steps of mechanical timing adjustable from 15 degree to 45 degree.
- ▶ Minimal maintenance is required with precise machining technology which ensures a minimum tolerance end play of the rotor shaft. Eliminating the copper shims used in most of today's motors.
- ▶ 200°C high temperature tolerance and high purity copper windings maximize conductivity and reliability.
- ▶ 200°C high temperature tolerance sintered NdFeb (Neodymium, 35EH-LT) magnets.
- ▶ Extreme low resistance multi-layered outlet PCB and high RPM NSK bearings.
- ▶ Compliant with ROAR, IFMAR, BRCA and JMRCA rules, certificated by RoHS, CE, FCC etc.



(Picture 1)

CAUTIONS

- ▶ Avoid incorrect connections between the electronic speed controller (ESC) and the motor.
- ▶ All wires and connections should be well insulated. Short-circuits can possibly damage the products.
- ▶ Never allow this product or other electronic components to come in contact with water, oil, fuel or other electro-conductive liquids. If this happens, stop the use of your product immediately and let it dry carefully.
- ▶ Avoid overloading the motor due to wrong or too aggressive gear ratios. Different ESCs have different internal timings, follow the ESC instructions.
- ▶ Never apply full throttle if the pinion is not installed. Due to the extremely high RPMs without load, the motor can get damaged.
- ▶ Always wire up all the parts of the equipment carefully. If any of the connections come loose as a result of vibration, your model RC may lose control.
- ▶ Avoid soldering longer than 5 seconds at each soldering joint when replacing the power wires to prevent possible damage to the product due to overheating of the components. Use a high power soldering station with at least 60W for soldering.
- ▶ Never allow the motor case to get over 100 degrees Celsius (212 degrees Fahrenheit) because the magnets may be demagnetized by high temperature.

INSTALLATION AND CONNECTIONS

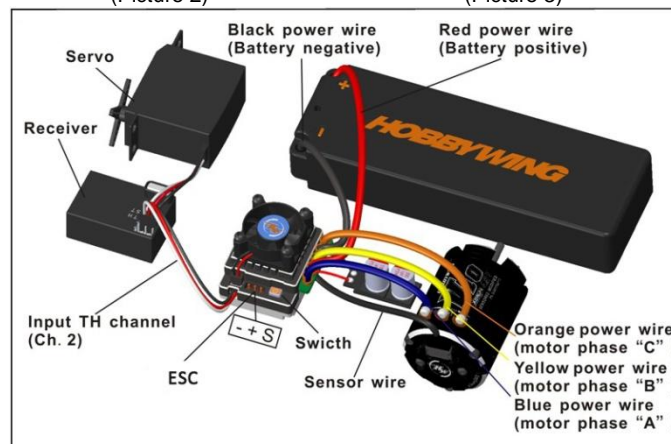
- ▶ Install the motor in its mount using M3 screws no longer than 8mm.
- ▶ There are 3 power wires coming from the ESC must be soldered to the motor. They are usually color coded as Blue for Wire A, Yellow for Wire B and Orange for Wire C. When connecting the power wires between the ESC and motor, please make sure that you match ESC Wire A to Motor Phase A, ESC Wire B to Motor Phase B and ESC wire C to Motor Phase C (This is VERY important).
- ▶ When using sensored ESC, make sure the sensor cable is clean and reliable. Connect the sensor cable to both ESC and motor in the correct direction.
- ▶ Double check you have all the connections correct before turning on the ESC (See picture 4).



(Picture 2)



(Picture 3)

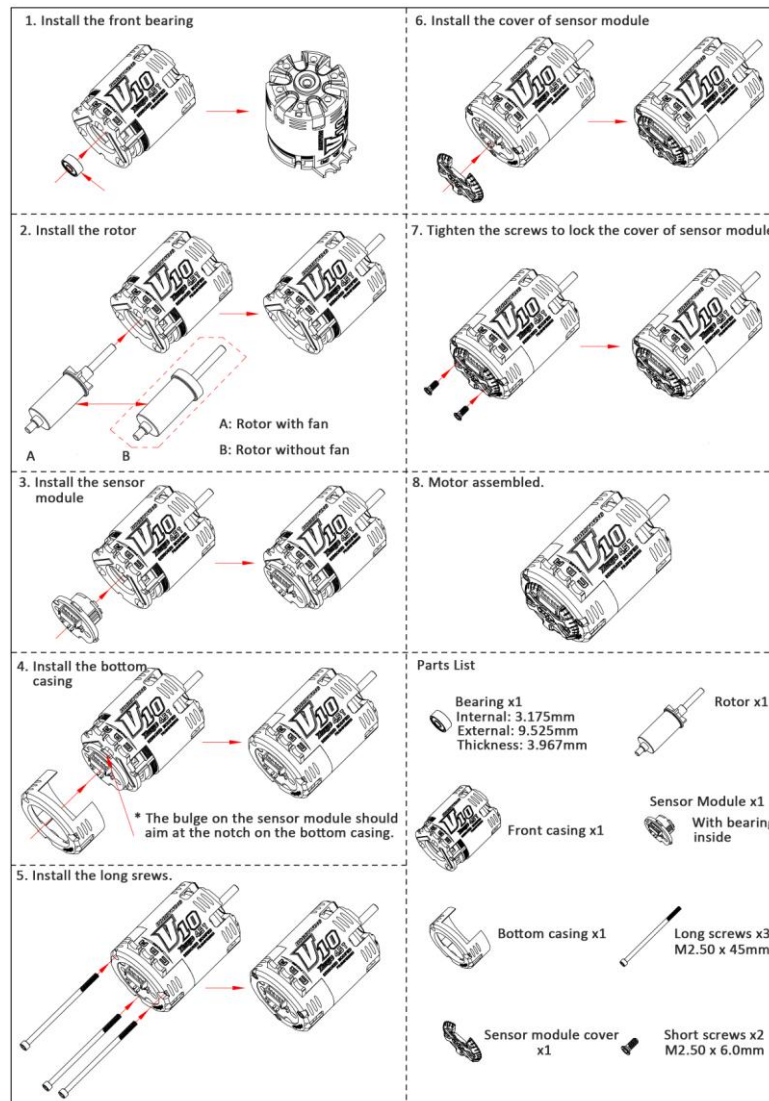


(Picture 4)

ASSEMBLY AND DISASSEMBLY

The XERUN V10 Motor is very strong in construction but also easy to disassemble for maintenance. We recommend periodical checking of the bearings and to clean the motor of dirt. Please follow the steps in Picture 5 to assemble the motor. When disassembling the motor, the sequences are reversed.

* Please browse Hobbywing web for high-resolution picture 5. www.hobbywing.com/product_show.asp?id=295



(Picture 5)

TIMING ADJUSTMENT

- ▶ To adjust the timing, simply loosen the 2 short screws on the back of the motor and rotate the Sensor Module Cover, noting the white-color lines on the motor and the mark (pointer) on the cover. After the adjustment, please lock the 2 short screws.
- ▶ You can alter the timing on the motor to change the power-band and characteristics of the motor for best and the most efficient performance. Neutral timing is 30 degrees with 15 degrees tuning either side. The motor has 15 degrees timing on minimum setting (fully clockwise) to maximum 40 degrees (fully anti-clockwise).
- ▶ The motor comes set to 30 degrees timing. Increasing the timing will increase the RPM of the motor whilst at the same time increasing temperatures and losing efficiency. Higher timing will require a softer gear ratio. We recommend you start with this setting and adjust based on your needs from that position.
- ▶ When setting your motor timing it is important to make sure your ESC is also set correctly. Please follow your ESC instructions on how to do this. To check the motor temperatures during testing, simply drive for 3 laps of the track, stop and use an infrared temperature measuring instrument to make sure the motor is not too hot. If the motor is too hot then allow the motor to cool before trying it again.



(Picture 6)

SPECIFICATIONS

Model	PN	KV Without Load (RPM/V)	Resistance (Ω)	Current Without Load (A)	Peak Output Power (W)	Current @Peak Output Power (A)	Dia. & Length (mm)	Dia. of External Shaft (mm)	Stock Rotor	Weight (g)	Application
3.5T	30401020032	9700KV	0.0026	9.2	600	120	Ø=36 L=52.5	Ø=3.175 L=14.6	V10-Rotor -Φ5-12.5F	173	1/10, 1/12 on-road Modified
4.5T	30401020033	7650KV	0.0040	6.9	490	108			V10-Rotor -Φ5-12.5	169	
5.5T	30401020034	6450KV	0.0061	5.8	430	100			V10-Rotor -Φ5-12.5	172	1/10 on-road Modified; 1/10 4WD off-road Modified
6.5T	30401020035	5340KV	0.0080	4.1	390	94			V10-Rotor -Φ5-12.5	170	1/10 4WD off-road Modified
8.5T	30401020036	4165KV	0.0138	3.2	340	80			V10-Rotor -Φ5-12.5	168	1/10 Drift; 1/10 2WD off-road Modified
10.5T	30401020037	3450KV	0.0208	1.9	250	63			V10-Rotor -Φ7-12.5	174	1/10 Drift; 1/10 on-road Stock
13.5T	30401020038	2760KV	0.0330	1.6	190	49			V10-Rotor -Φ7-12.5	178	1/10 on-road Stock
17.5T	30401020039	2210KV	0.0620	1.1	130	34			V10-Rotor -Φ7-12.5	172	
21.5T	30401020040	1760KV	0.0890	0.9	100	28			V10-Rotor -Φ7-12.5	174	1/10 on-road Stock; 1/10 rock crawler

- ▶ The "Peak Output Power" is measured with 7.4V input voltage and ESC at ZERO timing. This parameter is neither the "maximum input power" nor the "rating power", it is calculated by "RPM x Torque / 9550". Because each factory runs a different testing platform, the above data may vary if the motor is tested in different factories running different testing platforms.
- ▶ The "Current at Peak Output Power" is a guide used for selecting the suitable power system (ESC, Motor, Gear ratio, etc.) If the actual input current of the power system is bigger than the peak parameter stated in the above table, this means that the power system settings/configuration is over its peak (Or in other words, "overloaded")
- ▶ The "KV" is measured without any load on the motor and ESC at ZERO timing. Please don't run the motor without load for long periods of time (1 minute), otherwise the motor may overheat.

GEARING

Below is a very rough idea of starting gear ratios for the motors. Please be aware that these are guide ratios for ESC with ZERO timing. Please always check with other drivers using the same ESC/Motor combination at your track for a good starting point. If you have no idea about what gear ratio is most suitable for your car, please begin with "softer" gearing and then adjust as needed.

Class	Battery	3.5T	4.5T	5.5T	6.5T	8.5T	10.5T	13.5T	17.5T	21.5T
1/10 on-road (Small track)	7.4V LiPo	11.0:1	9.5:1	8.5:1	8.0:1	7.3:1	6.8:1	6.3:1	4.3:1	3.8:1
1/10 on-road (Big track)	7.4V LiPo	10.5:1	8.5:1	7.5:1	7.0:1	6.3:1	6.5:1	6.0:1	4.0:1	3.5:1
1/12 on-road	3.7V LiPo	25mm	29mm	32m	35m	38mm	42mm	51mm	66mm	66mm
2WD off-road	7.4V LiPo	Not Available		11.1:1	10.3:1	8.5:1	8.0:1	7.0:1	6.0:1	5.5:1
4WD off-road	7.4V LiPo	Not Available		12.0:1	10.8:1	8.9:1	8.0:1	7.0:1	6.0:1	5.5:1
Truggy	7.4V LiPo	Not Available		13.5:1	12.6:1	10.4:1	9.0:1	8.0:1	7.0:1	6.5:1

PARTS LIST

The XERUN V10 Motor has the parts as below (Please also check picture 5 for reference).
 1) Ball bearing x 1 (13.175x9.525x3.967mm) 2) Rotor x 1 3)Front casing x 1 4) Sensor module x 1 5) Bottom casing x 1
 6) Long screws x 3 (M2.50x45mm) 7) Cover of sensor module x 1 8)Short screws 2 (M2.50x6.0mm) 9) Sensor wires x 2 (80mm, 200mm)

OPTIONS

Spare Part	PN	Description	Specification
Ball bearing	30830000001	540 MOTOR BEARING-3.175	R2ZZ Ball Bearing, 3.175x9.525x3.967mm
Rotor	30850000035	XERUN-V10-Rotor-Φ5-12.5F	Thick magnets, with cooling fan, magnet hole Φ5, magnet length 12.5mm
	30850000036	XERUN-V10-Rotor-Φ5-12.5	Thick magnets, w/o cooling fan, magnet hole Φ5, magnet length 12.5mm
	30850000037	XERUN-V10-Rotor-Φ7-12.5	Thin magnets, w/o cooling fan, magnet hole Φ7, magnet length 12.5mm
	30850000038	XERUN-V10-Rotor-Φ5-13.0F	Thick magnets, with cooling fan, magnet hole Φ5, magnet length 13.0mm
	30850000039	XERUN-V10-Rotor-Φ5-13.5F	Thick magnets, with cooling fan, magnet hole Φ5, magnet length 13.5mm
	30850000040	XERUN-V10-Rotor-Φ5-13.0	Thick magnets, w/o cooling fan, magnet hole Φ5, magnet length 13.0mm
	30850000041	XERUN-V10-Rotor-Φ5-13.5	Thick magnets, w/o cooling fan, magnet hole Φ5, magnet length 13.5mm
	30850000042	XERUN-V10-Rotor-Φ7-13.0	Thin magnets, w/o cooling fan, magnet hole Φ7, magnet length 13.0mm
Sensor Module	30850000043	Hall sensor module for V10 motor	