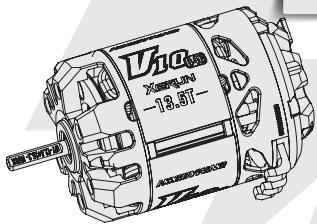


XERUN V10 G4R USER MANUAL



20240528

HW-SMB576DUL02



Thanks for purchasing this HOBBYWING product. This sensed brushless motor is very powerful.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

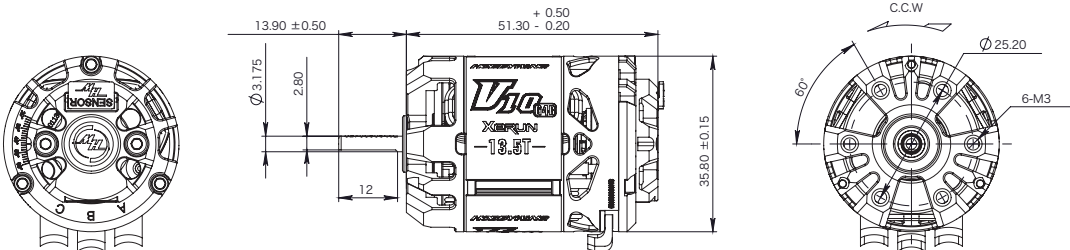
- To avoid short circuits, ensure that all wires and joints are well insulated before connecting the motor to related devices.
- Never allow this product or other electronic components to come in contact with water, oil, fuel or other electro-conductive liquids. If it happens, stop the use of the product immediately and clean and dry completely before testing.
- Read the manuals of all the items being used in the build.Ensure gearing,setup,and overall install is correct and reasonable.
- 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.
- All connections,must be made correctly.You may loose control,or run into major issues caused by improper, bad,weak,or poor connections.
- 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 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

- Designed for STOCK racing.
- Innovative exposed stator maximizes the heat dissipation. Exposed stator windings increase overall cooling.
- Dual sensor interface design to meet various wiring/layout requirements.
- Specialized copper winding termination rings are thicker and wider to provide excellent power delivery and heat dissipation.
- The built-in high precision Hall sensor combined with the high precision and balanced rotor guarantee outstanding linearity of the motor.
- Extremely high temperature wires are used to create an ultra high temperature resistance.Combined with high quality bearings,heavy duty copper solder tabs,ensures outstanding performance and durability.

03 SPECIFICATIONS

| Model | 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 | Bearing size (mm) | Poles | Weight (g) | Applications |
|--------------------------|-----------------|-------|-------------------|---------------------------|--------------------------------|--|--------------------------------------|--|-------------------|-----------------------------------|-------|---------------|---------------------------|
| XERUN V10 G4R-13.5T | 4100KV | 1-3S | 0.0208Ω | 5.4A | 297W | 70.7A | Ø=35.8mm(1.41in) L=51.3mm(2.02in) | Ø=3.175mm(0.125in) L=13.9mm(0.55in) | Φ 7-12.5*25.2-HUS | Front: D9*D4*14 Rear: D8*D3*14 | 2 | 152g | 1/10&1/12 STOCK Racing |
| XERUN V10 G4R-13.5T-ROAR | | | | | | | | | | | | 158g | |
| XERUN V10 G4R-17.5T | 3150KV | | 0.0357Ω | 4.6A | 213W | 49.4A | | | | | | 152g | |
| XERUN V10 G4R-17.5T-ROAR | | | | | | | | | | | | 158g | |
| XERUN X10 G4R-21.5T | 2600KV | | 0.0551Ω | 4.0A | 166W | 37.7A | | | | | | 152g | |
| XERUN X10 G4R-21.5T-ROAR | | | | | | | | | | | | 158g | |



Notes:

- Due to differences in competition rules,there are two versions of the motor, standard version and ROAR version.If the competition requires the motor to meet the ROAR rules,the ROAR version can be used,which has a lower temperature rise;If the competition requires the motor to comply with EFRA rules, the standard version needs to be used , and ROAR version can not be used.
- 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

1. Installation of the motor

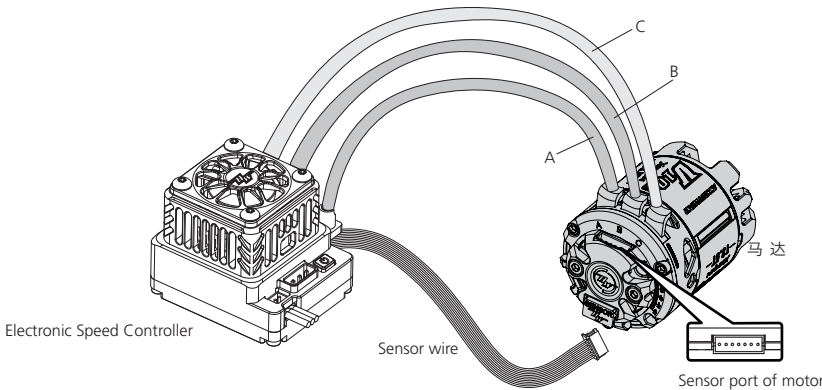
M3 mounting screws are needed there, and the mounting holes are 4mm in depth, before installing the motor on the vehicle, please carefully confirm whether the specification of the screws is appropriate ,so as not to damage the motor due to excessive length.

2. 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), otherwise, it cannot run normally and even damage the esc and motor. And then connect the sensor cable to the motor and ESC.

3. Inspection

Before powering on the esc, please check the motor installation and the order of all connections.



05 TIMING ADJUSTMENT

V10 G4R motors provide 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.

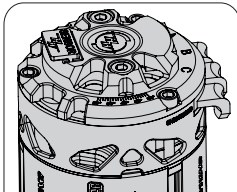
For obtaining the optimal performance, you can change the output range and characteristic of your power system through adjusting the motor timing. And the timing is 43 degrees by default.

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. 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 a infra-red temperature gun or the data recording function of the ESC.. 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 the table are initial FDRs recommended for the motors in Blinky mode. Please starts testing with the recommended values, and determine the final value as per the test results. If no recommended FDR is applicable to your vehicle, please start with a big FDR and then adjust gradually as per the demand.

| STOCK | TC (Small Track) | TC (Big Track) | 2WD Off-road | 4WD Off-road |
|-------|------------------|----------------|--------------|--------------|
| 13.5T | 4.7 | 4.0 | 7.6 | 8.3 |
| 17.5T | 4.0 | 3.5 | 6.6 | 7.5 |
| 21.5T | 3.5 | 3.0 | N/A | N/A |



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 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.

