Thank you for your choosing the Team Orion Vortex 8 brushless system. This system features the latest developments in R/C car brushless technology.

For maximum ease of use, no soldering is required and the ESC is equipped with an automatic setup system. You can use this brushless system with any type of 1/8 scale off-road car.

To ensure the safest possible use, the ESC features several safety systems:
- Overheating protection
- Battery low voltage protection
- Auto-brake function in case of radio signal loss

Please read the instructions carefully to ensure that you receive maximum performance and reliability.

Motor installation
We recommend cutting out air vents on the bodyshell to improve cooling:
- Install the motor so that you can easily connect it to the ESC.
- Secure the motor to the chassis using the screws supplied with your car or conversion kit.
- Before installing the pinion, make sure that the final gear ratio is suitable for the motor.

Gearing
You must use correct gearing for the system to function properly. Refer to your car manual if you need information about gear ratios.

Recommended ratios:
- Short ratio 14.5
- Medium ratio 13
- Long ratio 12

Using the wrong gear ratio can cause malfunctions and damage the ESC or motor.

ESC Installation
We recommend cutting out air vents on the bodyshell to improve cooling:
- Install the ESC so that it has enough airflow for cooling during operation and so that you can easily connect it to the motor and battery.
- Connect the ESC receiver plug to the receiver, usually channel/position 2 on the receiver.
- Connect the three motor wires from the motor to the ESC.

Batteries
Only connect the batteries to the ESC using the wires which are supplied with the ESC. One wire is for single battery setups and the other wire is for dual battery setups.

Plug the 4mm gold connectors inside the ESC battery connectors before connecting the batteries. The red wire goes into the + (positive) and the black wire goes into the - (negative).

The ESC supports 2 to 4 LiPo/LiFe cells or 6 to 12 NiMH/NiCd cells. Use only batteries equipped with Deans plugs.

For the best performance we recommend:
- LiPo/LiFe, use one 4 cell battery or two 2 cell batteries.
- NiMH/NiCd, use two 6 cell batteries.

You can also use one 6 cell NiMH/NiCd battery or one 2-3 cell LiPo/LiFe battery, but performance will be lower.

We recommend using these Team Orion batteries:
- NiMH Rocket packs 3300, 4500 or 5100
- LiPo Rocket packs 2400, 3000, 3500 or 4000
- LiPo Molecular power, 2 or 3 cell

Using the Vortex 8 ESC
- Switch on your transmitter
- Switch on the ESC
- The ESC red and green LED flash alternatively and then light, confirming that the automatic setup is completed.
- You are ready to go!

Important!
Do not move the throttle until the LED stay lit.

ESC Settings
Several ESC parameters can be modified to fine tune the ESC function. The factory settings can only be modified using the optional Team Orion Vortex Digital Setting Box (ORi65026).

Default factory settings
1. Battery type: automatic detection
2. Operation mode: forward/reverse
3. Brake: 10%
4. Acceleration: medium
5. Forward power limit: 100%
6. Reverse power limit: 50%
7. Operating frequency: 8KHz
8. Motor rotation direction: normal

Adjustable parameters
1. Battery type
This parameter adjusts the LVC cut-off system. The LVC will restrain the power output to the motor when the battery is almost empty, stop running the car as soon as you feel a drop in power.

Available settings: auto-detection, NiMH/NiCd/LiFe

2. Operation mode
Use this parameter to adjust the ESC for forward only or forward and reverse operation.

Available settings: forward/reverse, forward only

3. Brake
This parameter adjusts the braking power. You can use a lower value for rough or slippery surfaces and a higher value for smooth and high-grip surfaces. High value puts extra strain on the ESC and motor, use cautiously.

Available settings: 10% to 80%

4. Acceleration
This parameter determines the power curve of the acceleration. You can use a lower value for rough or slippery surfaces and a higher value for smooth and high-grip surfaces.

Available settings: low, medium, high

5. Forward power limit
This parameter adjusts the maximum forward power available. Use a lower value to make your car more easily controllable.

Available settings: 10% to 100%

6. Reverse power limit
This parameter adjusts the maximum reverse power available. Use a lower value to make your car more easily controllable.

Available settings: 10% to 100%

7. Operating frequency
This parameter modifies the drive frequency of the motor. Use a lower value for stronger acceleration.

Available settings: 8KHz, 16KHz

8. Motor rotation direction
This parameter sets the default rotation direction of the motor. You might need to change this setting depending on your car.

Available settings: normal, reverse

9. Default settings
Loads the default factory settings.

Troubleshooting
Car runs backwards:
- Reverse any two of the three wires connecting the motor to the ESC.

Car goes faster in reverse than forward:
- Switch off the ESC, change the throttle reverse switch on the transmitter and switch ESC back on.

The ESC LED do not light up when switched ON:
- Transmitter is switched off
- Transmitter or receiver is defective
- Motor wires are improperly connected
- Battery is empty or defective
- ESC is defective

Car stutters:
- Transmitter or receiver is defective
- Motor wires are improperly connected
- Battery is empty, defective or can’t supply enough power
- ESC is defective

ESC green LED flashing, motor and/or ESC overheating:
- Use a smaller pinion (shorter gearing)
- Make sure the transmission runs freely
- Ambient temperature is too high
- Inappropriate ESC settings
- Insufficient cooling
- Low quality or damaged battery
- ESC is defective

ESC red LED flashing:
- Battery empty or defective, recharge or replace battery.

Warranty
Team Orion guarantees this product to be free from manufacturing and workmanship defects. The warranty does not cover incorrect installation, components worn by use, or any other problem resulting from incorrect use or handling of the product. No liability will be accepted for any damage resulting from the use of this product. By the act of connecting and operating this product, the user accepts all resulting liability.

Is considered incorrect use:
- Failure to follow instructions.
- Improper use of the product (abusive use, out of spec, etc.).
- Failure to adapt settings for proper function (improper connections, wrong gearing, installation, setup, etc.).
- Overload, overheating (desoldering, melting, etc.).
- Running in inadequate conditions (damage or rust from rain, humidity, etc.).
- Improper maintenance (presence of dirt, etc.).
- Disassembly, modification by the user (modifying original connectors, wires, components, etc.).
- Mechanical damage due to external causes.