**ORCA Oe1**

**Instruction Manual**

Thank you for choosing ORCA Products. Welcome to the power and convenience of Brushless RC. By purchasing the Oe1 Competition Brushless Electronic Speed Control (ESC) you have chosen one of the most advanced speed controls for RC Racing. The Oe1 allows customization for multiple programmable parameters (using the ESC’s Program Card which can be purchased separately). Please read this manual thoroughly to familiarize yourself with the installation, setup and operation. By operating your product, you accept the ORCA Warranty Terms.

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**Radio & ESC set-up**

- **Transmitter Settings:**
  - Throttle Travel: Maximum / 100%
  - Brake Travel: Maximum / 100%
  - Throttle Expression: Even/5%
  - Throttle Neutral Trim: Center / 0
  - Throttle Servo Reverse: Right (R), Left (L), None (N)

- **Initial set-up of the throttle end-points of the ESC:**
  - Connect the power wires of the ESC to a fully charged battery; make sure the polarity is correct.
  - Bind your receiver and transmitter first if your radio requires you to do so.
  - Turn on the transmitter and hold the throttle at full brake position.
  - Turn on ESC and listen for 2 beeps.
  - After you hear the 2 beeps, apply full throttle and listen for another 2 beeps.
  - Once you hear the 2 beeps, release the throttle to neutral position.
  - A beep will then sound, signifying that the endpoint has been successfully set.

**Customizing the ESC**

Due to the different requirements of each style and class of racing, it is important to customize your ESC for each use-case. Customization of the ESC is done using the Program Card (Sold Separately).

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**Specifications**

- **32 bit processor**
- **Continuous current:** Brushless
- **Continuous Current:** 10A @ 80C$
- **Continuous Voltage:** 10.5V to 15V DC
- **Duty Cycle:** 100%
- **Peak Current:** 80A
- **Motor Limit:** Over 4.5 Turns
- **Peak Voltage:** 760A
- **Battery:** 2-3 Cell LiPo / 6 Cells NiCD/NiMH
- **Voltage Input:** (4.8 – 9.9V DC)
- **Weight:** 43g (excluding wires)
- **Thermal Protection:** Yes (Factory preset at Forward/Brake)

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**Installation & Connectors**

- **Power:**
  - Fan port voltage is drawn directly from the battery.
  - Connect the receiver plug to the CH2/throttle pin of the receiver.
  - Connect the sensor cable between the ESC sensor plug and the Motor sensor plug.

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**RPM Configuration**

- **Throttle Neutral Trim:**
  - Press and Hold "Select" button two second -------go to back page
  - Press and Hold "Select" button two second ----go to back page
  - Press and Hold "Select" button two second ----go to back page
  - Press and Hold "Select" button two second ----go to back page

**Network Configuration**

- **Initial set-up of the throttle end-points of the ESC:**
  - Connect the power wires of the ESC to a fully charged battery; make sure the polarity is correct.
  - Bind your receiver and transmitter first if your radio requires you to do so.
  - Turn on the transmitter and hold the throttle at full brake position.
  - Turn on ESC and listen for 2 beeps.
  - After you hear the 2 beeps, apply full throttle and listen for another 2 beeps.
  - Once you hear the 2 beeps, release the throttle to neutral position.
  - A beep will then sound, signifying that the endpoint has been successfully set.

**Customizing the ESC**

Due to the different requirements of each style and class of racing, it is important to customize your ESC for each use-case. Customization of the ESC is done using the Program Card (Sold Separately).
1. **Program / Modified Mode**

- **1. Punch Level**: 1-15
- **3. Timing**: OFF
- **4. Turbo Timing**: OFF
- **5. Turbo Down Rake**: Fastest
- **6. Drag Brake**: OFF
- **7. Brake Type**: 1-2
- **8. Turbo Punch**: Normal
- **9. Brake Freq**: 800-5000Hz
- **10. Initial Brake range**: 0-100%
- **11. Neutral Range**: 0-15%
- **12. Max Brake Force**: 90%
- **13. Reverse Force**: 0-100%

2. **Punch Level**: 1-15
3. **Timing**: OFF
4. **Turbo Timing**: OFF
5. **Turbo Down Rake**: Fastest
6. **Drag Brake**: OFF
7. **Brake Type**: Normal
8. **Turbo Punch**: Normal
9. **Brake Freq**: 800-5000Hz
10. **Initial Brake range**: 0-100%
11. **Neutral Range**: 15%
12. **Max Brake Force**: 90%

**Advance Setup**

- **1. Punch**: Allows you to adjust later to add timing in bottom power, this will make it easy to get a smooth power band in bottom.
- **2. Turbo**: Allows you to adjust a smooth power band in middle.
- **3. Turbo delay**: Allows you to adjust which throttle point to start the turbo and not only full throttle to start turbo so you can get smooth power band at all kind of mode.
- **4. Brake force** - Brake force increases when the Rake ESC in 1º increments. (The “Turbo Timing” should never be greater in value than 30º).
- **5. Turbo down rake** - This is for throttle toe-in, the higher the number the more aggressive the throttle feels at bottom end, 0% is linear throttle response. That’s means turbo down will change in your driving style.
- **6. Turbo delay** - Allows you to adjust early or later to add timing in bottom power, this will make it easy to get a smooth power band in bottom.
- **7. Turbo start** - Allows you to adjust early or later to add timing in bottom power, this will make it easy to get a smooth power band in bottom.
- **8. Turbo punch** - Allows you to adjust which throttle point to start the turbo and not only full throttle to start turbo so you can get smooth power band at all kind of mode.
- **9. Brake force** - Brake force increases when the Rake ESC in 1º increments. (The “Turbo Timing” should never be greater in value than 30º).
- **10. Brake delay** - Allows you to adjust early or later to add timing in bottom power, this will make it easy to get a smooth power band in bottom.
- **11. Initial Brake range** - Allows you to adjust early or later to add timing in bottom power, this will make it easy to get a smooth power band in bottom.

Some settings are not recommended:

- **Turbo delay** - Allows you to adjust which throttle point to start the turbo and not only full throttle to start turbo so you can get smooth power band at all kind of mode.
- **Brake force** - Brake force increases when the Rake ESC in 1º increments. (The “Turbo Timing” should never be greater in value than 30º).

**Limited Warranties / Repair Procedures**

All ORCA products are manufactured in accordance with the highest quality standards. ORCA guarantees this product to be free from defects in materials or workmanship for 90 days from the date of purchase verified by sales receipt. This limited warranty does not cover damages resulting from abnormal wear, misuse or improper maintenance of the product.

To avoid unnecessary service and mailing charges, always eliminate all other possibilities and check all components for malfunctions before sending in your unit for repair. Products sent in for repair that operate perfectly will be charged a service fee.

When sending in the product, always pack carefully and include the original sales receipt, a description of the problem encountered, your return address, and contact information. Since we do not offer control over the installation and use of this product, we cannot accept any liability for any damages resulting from the usage of this product. Therefore, using this product is at your own risk, and the user accepts all resulting liability from installing and using of the product.

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