

# **Himax CR3516-1030**

## **Contra Rotating Brushless Outrunner Motor**

Himax Brushless motors are manufactured to high standards for the discerning modeler. Designed for light weight, high efficiency, high torque, and durability Himax Outrunner motors are sure to make today's radio controlled models perform. Please read the entire operating manual to ensure correct functionality and best performance. The CR3516 series motor is made for small to medium size models weighing 40 to 80 ounces depending on power/weight ratio desired.

### **Features:**

High Efficiency - High Power - High Torque - Lightweight - Equivalent to .50 size glow engine.

### **Specifications:**

Weight: 275g, (9.7oz) with prop adapter

Max Power: 800W, (This is dependent on several factors)

Max RPM: 12,000 RPM

Diameter: 35.3mm, (1.39")

Length: 64.3mm (2.53")

Shaft Diameter: 4.73mm (3/16") front shaft, 9.48mm (3/8") rear shaft

Motor Mounting Holes: 4 holes, 3.17mm through, on 43mm, (1.7") bolt circle

Maximum Case Temperature: 65°C, (149°F)

KV= 1030, Rm = .0035, I<sub>o</sub> of front motor = 4.8A/10V, I<sub>o</sub> of rear motor = 2.3A/10V

Efficient Operating Current =30-36 A per rotor, 40A Max 15 seconds per rotor.

Suggested Props: For 3-cell operation APC 12x6P front prop, APC 11x8E rear prop

Battery: 3-cell Lipo that can sustain 70 to 80 amp continuous draw.

ESC: Two 35 Amp ESCs or equivalent. Also needs a MPI 2160 or 2460 Y-harness to join the two ESC to throttle channel.

ESC setting: Cutoff - soft, Brake - disabled, Throttle type - airplane, fixed endpoints.

***Special note: This motor will not run with one ESC! If you want to experiment with other props, you must monitor the current, power and case temperature.***

### **Operation:**

1. Himax Brushless motors require brushless sensorless speed controls. Failure to use a brushless sensorless electronic speed control (ESC) can result in damage to the motor and/or ESC. A Castle Creations Phoenix series ESC is recommended for best performance. The standard setting for timing advance is recommended for best operation.
2. The three wires of the motor can be connected to the three output leads of the ESC in any order. Check the direction of rotation of the motor. If the motor spins in the wrong direction switching any **two** of the motor wires will reverse rotation. Be sure to insulate the wires to prevent shorting which may damage the ESC.
3. Allow for proper cooling of the motor during operation. With extremely high capacity batteries, care must be taken to prevent excessive motor temperature. Overheating of the motor is not covered under warranty. Insufficient cooling can result in overheated motors, even when operated at moderate power levels.
4. Use the prop drill jig to prepare the rear prop. During installation, watch the depth of the screws extending into the endbell. Do NOT allow the screw to contact the motor winding. Otherwise, it will cause non-repairable permanent damages.
5. Do not disassemble the motor. Disassembling the motor voids the warranty. If service is required please return the unit to Maxx Products for service.
6. Install the propeller after proper rotation has been determined. Consult the ESC operation manual for proper arming and use procedures. Be sure the prop is clear before starting the motor. Once the battery is plugged in stay clear of the prop, electric motors are capable of extremely high torque and can be very dangerous.

### **Maintenance:**

Brushless motors are almost maintenance free, so minimal care is required for long life. Keep the motor clean free of dust and dirt, especially the bearings. Dirty bearings wear quickly. Lubricate the bearings regularly with light oil. Do not immerse the motor in water, or solvents. Do not bend the wires excessively and secure wires to prevent breakage due to fatigue from vibration. Always use balanced propellers to reduce loads on bearings, to reduce noise, and reduce stress on the airframe.

### **Warranty & Service:**

Himax motors have a two year limited warranty to the original owner, excluding gearboxes. All motors are guaranteed to be free from manufacturing defects within two years of date of purchase. Not covered under warranty is crash damage, customer abuse, improper use, or overheating. Warranty claims should be handled directly with Maxx Products, 815 Oakwood Rd, Unit D, Lake Zurich, IL 60047. Be sure to include contact information and a description of the problem including which ESC, battery, and prop was being used. Return shipping for repair estimates must be prepaid.

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