Thank you for purchasing your Potenza 60 brushless outrunner motor. It has been designed, developed, and extensively tested to provide the best combination of power, performance, and user-friendliness in its class.

FEATURES
- Equivalent to 60-sized glow motor for 6-12 pound (2.7-5.4kg) aircraft
- Ideal for 3D aircraft up to 9-pounds (4.1kg) in weight
- Designed for up to 6S LiPo and 1800 watts of power
- Powerful, quiet, lightweight operation
- Factory-installed 4.0mm bullet connectors
- Includes X-mount, bolt-on prop adapter, and mounting hardware
- External rotor design -- 7mm prop shaft can be easily reversed for alternative mounting and applications.
- Slotted, 14-pole design
- High-quality construction with (4) ball bearings and hardened steel motor shaft

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Current</td>
<td>75A (with proper cooling)</td>
</tr>
<tr>
<td>Max Burst Current</td>
<td>90A (&lt;15 seconds with proper cooling)</td>
</tr>
<tr>
<td>Continuous Power</td>
<td>1800 Watts</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>22.2v nominal (6S LiPo)</td>
</tr>
<tr>
<td>Motor Can Diameter</td>
<td>50.0 mm</td>
</tr>
<tr>
<td>Motor Can Length</td>
<td>61.0 mm</td>
</tr>
<tr>
<td>Shaft Diameter</td>
<td>7.0 mm (0.28 in)</td>
</tr>
<tr>
<td>Weight</td>
<td>427g (15.0 oz)</td>
</tr>
<tr>
<td>RPM/Volt (Kv)</td>
<td>470</td>
</tr>
<tr>
<td>No-Load Amperage (Io)</td>
<td>2.1A</td>
</tr>
<tr>
<td>Resistance (Ri)</td>
<td>0.02 Ω</td>
</tr>
<tr>
<td>Propeller Range</td>
<td>15x8-17x7 electric</td>
</tr>
<tr>
<td>Recommended ESC</td>
<td>80A Brushless</td>
</tr>
</tbody>
</table>

REPLACEMENT/OPTIONAL PARTS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPZM1060A3</td>
<td>60 Motor Shaft w/Collar</td>
</tr>
<tr>
<td>FPZM1060A2</td>
<td>60 Motor X-Mount w/Screws</td>
</tr>
<tr>
<td>FPZM1060A1</td>
<td>60 Motor Bolt-on Prop Adapter</td>
</tr>
<tr>
<td>FPZM1060A4</td>
<td>7mm Collet Prop Adapter</td>
</tr>
</tbody>
</table>

UNDERSTANDING ELECTRIC MOTORS

In order to get the most out of your motor, it is helpful to understand a few basic principles about how they run. The most important of these is the knowledge of Kv. Kv is a measurement that states the number of revolutions per minute that an electric motor will rotate per volt applied (RPM/volt) with no load applied to the motor.

For example, a 1000Kv motor that is connected to a 12v power supply will try to spin 12,000 RPM (1000Kv x 12v) with no load. When a load, in our case a propeller, is applied to the motor, it will still try to turn at the same RPM. The diameter and pitch of a propeller dictate the load imposed on the motor, and the larger the diameter and/or higher the pitch, the more load that propeller will impart on the motor. When load increases, so does current; conversely, when load decreases the current follows. It is highly recommended that a watt meter be used to determine proper propeller sizing.

Every motor has a maximum current value. There are many factors which decide this, including motor design and motor cooling. Taking these factors into consideration, a maximum propeller size for a given setup can be determined. Use of an oversized propeller will cause the motor to spin at a much lower RPM than it was designed to, and the motor will draw more current to run at its design RPM. Not only can current values for the motor be exceeded, but excess current generates excess heat which can damage internal components in the motor.

Operating the Motor

1. This brushless motor requires a sensorless brushless electronic speed control (ESC). Failure to use the correct ESC may result in damage to the motor and/or ESC itself.
2. If applicable, solder the (3) included female bullet connectors to the output wires of your ESC. Do not allow the input connectors to make contact when power is applied to the motor. Ensure all input connections are insulated.
3. The (3) motor wires can be connected in any order to the ESC output wires. If the motor is turning reverse than the direction desired, the connection of any TWO wires may be reversed.
4. Once the battery is connected to the ESC, remain well clear of the motor and propeller. The motor shaft of the motor will rotate at very high rpm and can cause serious injury.
5. Do not apply an input voltage or current that exceeds the maximum specification for your motor.
6. Do not allow water or moisture to enter the motor, as it can cause permanent damage to the motor and possibly short out the attached ESC.
7. Do not cut the wires from the motor. The wires are part of the windings and cannot be reattached by soldering.
8. Allow the motor to cool after each flight. Ensure that your model has adequate air circulation during operation. Overheating the motor is NOT covered under any warranty.
9. Never attempt to use a damaged motor.
CHANGING SHAFT POSITION

1. Loosen the set screws on the shaft collar and remove the collar from the shaft.
2. Loosen the set screw on the flange of the motor can (the rotating portion of the motor)
3. Carefully push the shaft through the motor. A small hammer may be required to tightly tap the shaft.
4. Reinstall the shaft collar against the main bearing, apply blue threadlocker to the set screws and tighten them
5. Apply blue threadlocker and tighten the screw on the flange of the motor can.

MOTOR MOUNTING USING X-MOUNT

The most common installation of brushless outrunner motors is to install the X-mount on the rear of the motor and attach this mount to the firewall. Other options exist for mounting motors including mounting in reverse directly to the nose ring or using standoffs. Please consult the directions with your model to ensure proper motor mounting and configuration. DO NOT install the X-mount onto the motor until the firewall has been prepared for the motor mount.

1. Trial-fit the aluminum X-mount on the model's firewall and mark the locations for the four screw holes and shaft (if applicable).
2. Using the appropriate size drill bit, drill out the four holes for the mounting screws, and enlarge them properly for blind nut installation.
3. Install the (4) blind nuts on the rear side of the firewall. Run medium CA nose ring or using standoffs. Please consult the directions with your model to ensure proper motor mounting and configuration. DO NOT install the X-mount onto the motor until the firewall has been prepared for the motor mount.
4. Attach the X-mount to the motor using (4) countersunk screws and a small amount of blue threadlocker.
5. Attach the motor assembly to the firewall with the included socket head cap screws and flat washers.
6. Once satisfied with the final assembly of the motor, apply blue threadlocker to all mounting screws EXCEPT the prop nut.

LIMITED WARRANTY

Warranty Coverage - Flex Innovations, Inc. and its authorized resellers (“Flex”) warrant to the original purchaser that the product purchased (the “Product”) it will be free from defects in materials and workmanship at the date of purchase.

Outside of Coverage - This warranty is not transferable and does not cover: (i) Products with more than 45 days after purchased date; (ii) Damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance; (iii) Modification of or to any part of the Product; (iv) Product not compliant with applicable technical regulations; (v) Shipping damage; (vi) Cosmetic damage

OTHER THAN THE EXPRESS WARRANTY ABOVE, FLEX MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NONINFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER’S INTENDED USE.

Purchaser’s Solution - Flex’s sole obligation and purchaser’s sole and exclusive remedy shall be that Flex will, at its option, either (i) service, or (ii) replace, any Product determined by Flex to be defective. Flex reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Flex. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER’S SOLE AND EXCLUSIVE REMEDY.

Limitation of Liability - FLEX SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF FLEX HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Further, in no event shall the liability of Flex exceed the individual price of the Product on which liability is asserted. As Flex has no control over use, setup, assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

Law - These terms are governed by Florida law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. FLEX RESERVES THE RIGHT TO MODIFY THIS WARRANTY AT ANY TIME WITHOUT PRIOR NOTICE.

Questions & Assistance - For customer support in your region, visit: http://www.flexinnovations.com/index.php/reseller-sub

Inspection or Services - If this Product needs to be inspected or serviced and is compliant in the region you live and use the Product in, please contact your regional Flex authorized reseller. Pack the Product securely using a Shipping carton. Please note that original boxes needs to be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Flex is not responsible for merchandise until it arrives and is accepted at our facility.

Warranty Requirements - For Warranty consideration, you must include your original sales receipt verifying the proof of purchase date. Provided warranty conditions have been met, your Product will be replaced free of charge. Shipping charges are as follow: to Flex by customer, Flex out it is by Flex. Service or replacement decisions are at the sole discretion of Flex.

COMPLIANCE INFORMATION FOR THE EUROPEAN UNION

Declaration of Conformity (In accordance with ISO/IEC 17050-1)

Product(s): Potenza 60 470Kv Motor
Item Number(s): FPZM1060A

The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the EMC Directive 2004/108/EC.

EN55022/2010 + AC:2011
EN55024/2010

Instructions for disposal of WEEE by users in the European Union

This product must not be disposed of with other waste. Instead, it is the user’s responsibility to dispose of their waste equipment by handing it over to a designated collections point for the recycling of waste and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where to drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.