



## Non-Magnetic **Rotary Motors**

Piezo Motion Corp's non-magnetic rotary motors are currently pre-production models based on a variation of the successful RBS blue-series product line. Designed without the use any ferrous materials these motors are fully non-magnetic.

### Performance and Benefits

#### Non-Magnetic Rotary Motors

##### 1,000 TIMES GREATER PRECISION

While most stepper motors have a maximum of 400 steps per revolution, a Piezo Motion rotary piezo motor has ~640,000 steps in a single rotation with each step at full torque, stepping in 10  $\mu$ rad increments.

##### FORM FACTOR

Our piezoceramic resonator design allows for a low profile Z-height for our motors. We also offer a range of custom shaft types (including hollow-shaft), and various options for motor mounting and interfacing.

##### FAST RESPONSE

Within 30 to 50  $\mu$ s, the piezo motor has made its first step and motion has commenced, compared to a stepper motor with a typical 15 to 20 ms to start motion.

##### SPECIAL PROPERTIES

The non-magnetic rotary piezomotor contains no ferrous materials and is completely non-magnetic. Immune to EMI and RF interference and with no emissions, they are ideal for a range of sensitive and specialized applications (including MRI).

##### ZERO POWER TO HOLD

Piezo Motion's rotary motors consume zero power at holding torque and very low power at slow speed yielding the possibility of very efficient overall duty.

##### LIGHTWEIGHT

The design contains no copper windings, magnets, or ferrous laminations making it ideally suited to weight-critical applications. Our motor housings are lightweight, reinforced thermoplastic, and the motor operates at ultrasonic frequencies, making it virtually silent.

##### RELIABLE

Our reduced part count means fewer failures. With no piezoelectric bi-material joints to delaminate or multilayer stack joints to crack, there is no susceptibility to moisture or shorting.

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#### Preliminary Specifications

##### Available Build to Order Only

Mode of Operation	<b>Stepping &amp; Continuous</b>
Encoder Type	<b>*</b>
Maximum Torque	<b><math>\geq 100-200</math> mNm</b>
Self-Braking Torque	<b><math>\geq 150-250</math> mNm</b>
Response Time	<b>30-50 <math>\mu</math>sec</b>
Maximum Speed	<b><math>\geq 100</math> rpm</b>
Minimum Angular Step	<b>10 <math>\mu</math>rad (2 arc.sec)</b>
Control	<b>PWM</b>
Supply Voltage	<b>12 VDC</b>
Maximum Current	<b><math>\leq 1.5</math> A</b>
Operating Temperature	<b>-20 to 80 C</b>
Motor Weight	<b>140 g</b>
Motor Dimensions	<b>62x77x25-85x103x35 mm</b>
Driver PCB Dimensions	<b>48x63x15 mm</b>

\* Contact Piezo Motion for encoder options: [info@piezomotion.com](mailto:info@piezomotion.com)

Piezo Motion welcomes the opportunity to customize these motors to meet user specific application requirements.

Please contact our technical support team for additional information or customization options [info@piezomotion.com](mailto:info@piezomotion.com) or visit our website at [piezomotion.com](http://piezomotion.com) to see more product offerings and features.

# Non-Magnetic Motors dimensional drawing

**DIMENSIONS IN MM - CUSTOMIZATION AVAILABLE**

