

PIEZOELECTRIC MOTOR/ACTUATOR KIT

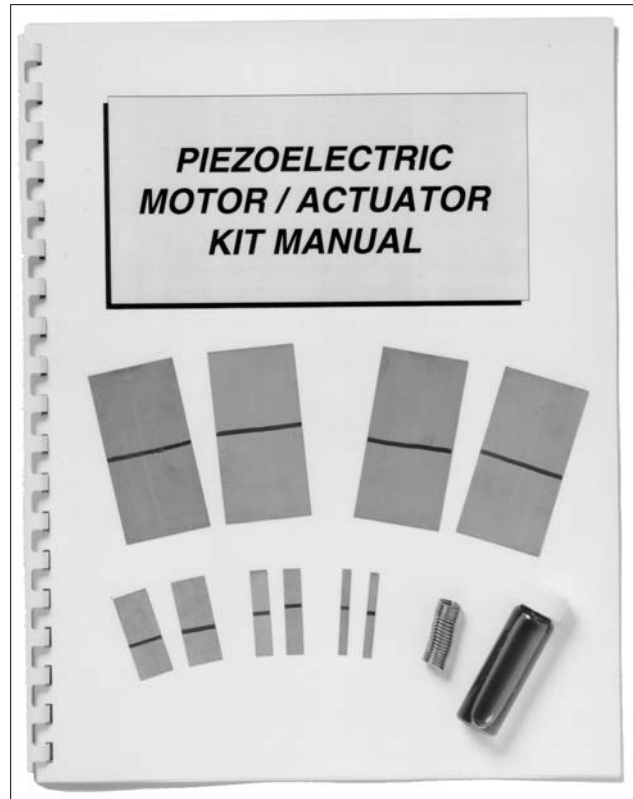
DESCRIPTION

The motor actuator kit is designed as a development tool for those who wish to quickly verify the feasibility of a piezoelectric approach to an idea or application. The piezoelectric materials provided in this kit represent some of the basic building blocks employed in constructing bending motors, extension motors, and stack motors. Emphasis is placed on designing and building bending actuators. Because the piezoelectric effect is reversible, the same elements are used as sensors and generators. PSI-5A4E piezoceramic was chosen for the kit because it offers the fewest voltage, temperature, and stress restrictions. It is, by far, the most commonly used piezoceramic in the industry.

The manual is intended to help the user model, fabricate, and test a prototype actuator as rapidly as possible. Quick and simple techniques for cutting piezoceramic elements to desired size are described, as well as attaching leads to the electrodes. Equations for free deflection, blocked force, resonant frequency, maximum stress, and capacitance allow the user to scale experimental results to many actuator designs.

PIEZO MOTOR APPLICATIONS

- Micro actuators and manipulators for optical, robotic, fluidic, biomedical, electronic, and process engineering.
- Vibrating shutters and dithering devices.
- Acoustics and ultrasonics.
- Micro-pumps for process control and medical instrumentation.
- Small size, light weight, low power, solid state, actuators of all types for aerospace and battery powered devices.



THE KIT INCLUDES

- Piezoceramic Single Sheets; PSI-5A4E
2 pieces: 1.25" x 2.5" x .0075"
- Standard 2-Layer Brass Shim Piezo Elements
Poled for series operation
1 piece: 2.50" x 1.250" x .020"
1 piece: 1.25" x 0.500" x .020"
1 piece: 1.25" x 0.250" x .020"
1 piece: 1.25" x 0.125" x .020"
Poled for parallel operation
1 piece: 2.50" x 1.250" x .020"
1 piece: 1.25" x 0.500" x .020"
1 piece: 1.25" x 0.250" x .020"
1 piece: 1.25" x 0.125" x .020"
- Piezoelectric Motor/Actuator Manual
Introduction to Piezoelectricity
Designing Piezoelectric Actuators
Building Piezoelectric Actuators
- Wires, Solder and Flux
- **ROHS** Compliant / Piezo exempted

ORDERING INFORMATION

PART NO.

PRICE

Piezoelectric Motor/Actuator Kit

KMA-005

\$499