

PI PRESS RELEASE

Three Piezo Motor Technologies Explained in new Catalog - by PI Physik Instrumente

Auburn, MA -- PI, a leading manufacturer of piezo positioning equipment has released a new catalog on piezoelectric motors. The 70 page brochure covers three different types of piezo motors – inertial motors, often referred to as stick slip motors, ultrasonic motors and stepping (walk) type motors. In addition to applications and commercially available products with drawings and technical data, background information on the operating principles and physics behind of each type of motor is available.

General Advantages of Piezo Motors

All three types of piezo motors are self-clamping at rest (no energy consumption, very high stability) and the technology is intrinsically non-magnetic and vacuum compatible. These novel motors and actuators are also available fully integrated in precision positioners from miniature linear stages to 6-axis Hexapods and Z/tip/tilt platforms.

Inertial Motors (Stick-Slip)

These piezo motors are very compact and economical. Their motion is based on a piezoceramic element that expands slowly and then retracts very quickly. Due to their small size they lend themselves to the integration into miniature positioning stages, such as linear and rotary positioners. PI's latest generation achieves a breakthrough in speed – up to 10 mm/sec and provides forces to 10N.

Ultrasonic Motors (resonant piezo motors)

These piezo motors provide the highest velocities, typically from 100 mm/sec to 1000 mm/sec. Their motion is very smooth, and forces on the order of 5 to 15 N are typical.

Piezo Stepping Motors (PiezoWalk®)

These are the most complex of the three motor types. They are based on several preloaded actuators performing coordinated motion similar to the way humans walk. PiezoWalk® motors are very robust and can provide high forces to 800 N. In addition to a long-range step mode a high dynamics sweep / scanning mode is also available, enabling picometers of resolution and kHz range bandwidth.

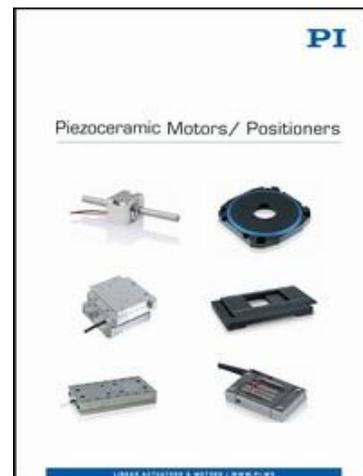
Applications Fields:

Semiconductor Test & Metrology Instrumentation, Aerospace, High Energy Physics, Optics & Photonics, Precision Motion Control, Microscopy

The piezo motor brochure can be downloaded at:

http://www.piezo-motor.net/pdf/PI_Brochure_Piezomotor_Piezo_Motor_PiezoWalk_Ultrasonic_Actuator.pdf

Keywords: Piezo Motor, Piezoelectric, Ultrasonic, PiezoWalk, Piezo Worm



Piezo Motor Catalog

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About PI

PI is a leading manufacturer of precision motion control equipment, piezo systems, piezo motors and actuators for bio-nano-technology, semiconductor, medical engineering and photonics applications. PI has been developing and manufacturing standard & custom precision products with piezoceramic and electromagnetic drives for 4 decades. The company has been ISO 9001 certified since 1994 and provides innovative, high-quality solutions for OEM and research. PI is present worldwide with eight subsidiaries, R&D / engineering on 3 continents and total staff of 700+