

Nano-P Series

Features

- ▶ Compact tubular design
- ▶ True flexure guided motion
- ▶ Position sensors, closed loop control
- ▶ Up to 70 µm motion
- ▶ Invar and titanium construction
- ▶ **pico** sensor technology
- ▶ Closed loop control

Typical Applications

- ▶ Single axis positioning
- ▶ Surface analysis
- ▶ Metrology



Nano-P15 (actual size) constructed from invar and titanium.

LabVIEW Compatible USB Interfaces



Examples, tutorial, and
Nano-Route^{*} 3D supplied
with Nano-Drive^{*} USB
interfaces.

Nano-P70 (actual size) constructed from invar and titanium.

Product Description

The Nano-P Series are piezo actuated, closed loop, linear translators that incorporate a unique flexure hinge design. The flexure hinge is machined entirely from a single block of high strength titanium using an advanced electrical discharge machining process. This hinge, available for the first time on a tubular nanopositioner, ensures the highest degree of repeatability and load capability. Unlike similar looking products on the market, the Nano-P Series does not have internal Belleville springs. Belleville springs are not frictionless and therefore cannot provide the high degree of repeatability of a true nanopositioner.

The guiding mechanism of the Nano-P Series is a true flexure spring - eliminating mechanical friction and stiction. The Nano-P Series is constructed from invar and titanium for the best combination of thermal stability and mechanical strength, making it ideal for the most demanding positioning and metrology applications. The Nano-P Series is available in three standard ranges of motion with integrated position sensors utilizing proprietary **pico** technology to provide absolute, repeatable position measurement with picometer accuracy under closed loop control. Custom systems available.

Technical Specifications

Range of motion (Nano-P15).....	15 μm
Range of motion (Nano-P35).....	35 μm
Range of motion (Nano-P70).....	70 μm
Resolution (15/35/70 μm)	0.03/0.07/0.14 nm
Resonant Frequency	2.5 kHz $\pm 20\%$
Recommended max. load*	0.2 kg
Body Material	Invar and Titanium
Controller	Nano-Drive®

* Larger load requirements should be discussed with our engineering staff.

Nano-P35 3nm p-p square wave response (closed-loop)

