



PiezoGrip

High Force • Wide Opening • Precision Handling

Product Overview

The PiezoGrip delivers high grip force and wide jaw travel in a compact, solid-state design — combining advanced piezoelectric actuation with flexure guidance to enable ultrafast, high-precision gripping without contamination or wear points. Designed for integration into precision automation and inspection systems, this gripper supports demanding applications that require speed, repeatability, and reliability.

Piezoelectric materials generate motion via the inverse piezoelectric effect, offering nanometer precision and millisecond-level response without the need for traditional mechanical components such as bearings or lubricants. These characteristics translate to a maintenance-free, long-lifetime actuator well-suited for high-throughput environments.

Key Features

Fast, Precise Motion

- Extremely rapid actuation with sub-micron step resolution
- Excellent repeatability and settling performance
- Ideal for integrated OEM machines in biotech, medical, microelectronics, and diagnostics

High Grip Force

- Ideal for reliably securing micro-components and delicate parts
- Can generate significant clamping force from a compact actuator design (system dependent)

Wide Opening Distance

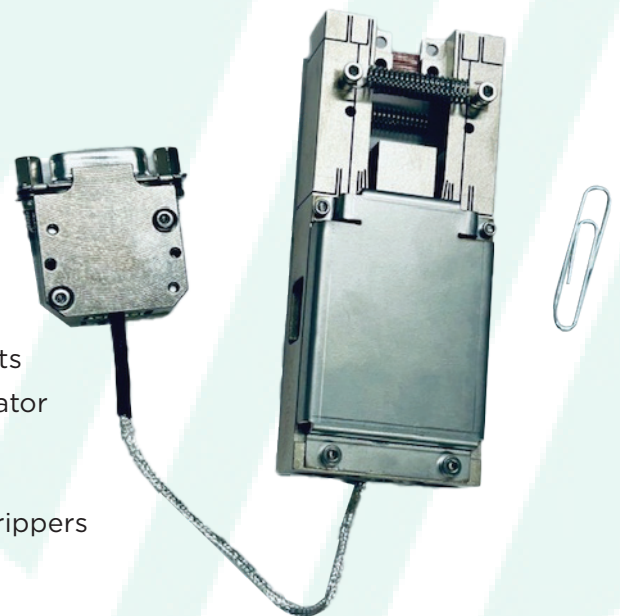
- Extended jaw travel footprint compared to traditional piezo grippers

Maintenance-Free, Solid-State Construction

- Eliminates lubricant needs and contact wear mechanisms
- Increases uptime and reduces lifecycle service requirements

Flexure-Guided Motion

- Flexure mechanisms ensure smooth, guided displacement and consistent force delivery
- Enhanced stability and lifespan



Benefits for OEM Integrators

- ✓ **Enhanced Precision Control** — Ultra-fine motion improves repeatability and throughput
- ✓ **Low Lifecycle Cost** — Solid-state design reduces service burden
- ✓ **Mechanical Preload** — Does not require air or external influence - holds position during power loss
- ✓ **Fast Dynamic Performance** — Supports high-speed automation cycles
- ✓ **Clean Operation** — Ideal for contamination-controlled environments

PiezoGrip Technical Specifications

Characteristic	Typical Value
FREE GAP	3.0 mm
CLOSED LOOP GRIPPER MOTION ($\pm 0.01\%$)	1.6 mm
GRIP FORCE	4 \pm 0.4 N
DIMENSIONS (L X W X H)	86 x 26 x 35 mm
WEIGHT	240 g

Exact performance values dependent on model configuration and application load.

Key Features

- 1.6 mm gap motion
- Closed loop gripper motion accuracy to ± 160 nm
- High force available (up to 13 N)
- High speed and high vacuum capacity
- No compressed air needed

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Applications

- Semiconductor Handling and Inspection
- Medical Device Assembly
- Optics & Photonics Handling
- Precision Micro-Assembly
- Robotic End-Effectors for Small Part Manipulation

Typical Integration Scenarios

- As an end-effector on robotic arms or gantries
- Integrated into inspection and metrology stages
- Paired with machine vision for adaptive gripping
- Used in micro-assembly workstations where small parts are manipulated routinely

Contact Us

Let's connect today and discuss how we can partner on your next project. Call **1.949.586.7442** or email us at moso-sales@novanta.com. For specific locations, please use the contact information below.

To explore our company and solutions further, including case studies, webinars and other research material, please visit our website at www.motionsolutions.com.



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