Eccentric Roller Grips for Thin and Flexible Specimens

Optimized Clamping System for Tensile Testing of Sheet Materials and Soft Specimens

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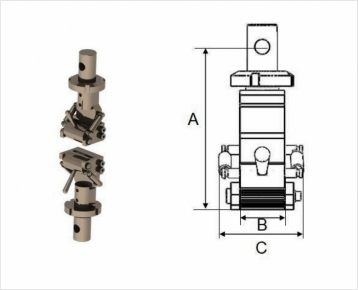
Eccentric roller grips from NextGen Test are designed to meet the demanding needs of tensile testing applications involving thin, flexible, or soft materials. Utilizing a friction-based clamping mechanism activated by an eccentric cam roller, these grips ensure automatic alignment and firm engagement of the specimen without slippage or damage. The gripping force increases with the applied test load, making them ideal for materials that are sensitive to pressure or deformation. These grips are particularly suitable for applications in packaging, film, sheet material, textiles, and soft metals. All models are fully compatible with NG-EML and SHM Universal Testing Machines and conform to international standards including ISO 6892, ASTM D882, and DIN 51221.

NGA502A – Eccentric Roller Tensile Grip

The **NGA502A Eccentric Roller Grip** is designed for precise tensile testing of thin, soft, and low-strength materials such as rubber sheets, plastic films, and soft composites. It utilizes an eccentric roller mechanism to generate increasing clamping force as the tensile load rises, ensuring the specimen remains securely held without damaging its surface. This compact grip is ideal for delicate materials that are prone to tearing or slippage in standard fixtures, and it offers smooth operation under low-force testing conditions.



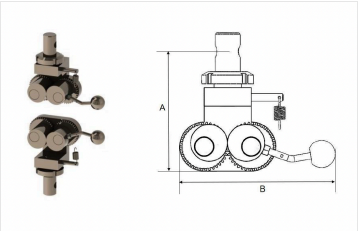
- **Application:** Tension tests for rubber, plastic films, and soft sheet materials.
- **Maximum Capacity:** Up to 500 N load.
- **Connection:** Ø10 mm pin mount (upper and lower), compatible with most universal testing machines.
- **Dimensions:** Height 80 mm; Grip body width 30 mm; Overall width 50 mm.
- **Specimen Range:** Suitable for specimens up to 30 mm in width.
- **Grip Weight:** Approximately 0.44 kg each for upper and lower grip.
- **Working Temperature:** Ambient laboratory environment.

Technical Specifications – NGA502A Eccentric Roller Grip for Soft Materials

Parameter	Specification
Application	Tension test for rubber, plastic film and soft material
Maximum Force Capacity	≤ 500 N
Connection Type	Upper Grip: Ø10 mm pin Lower Grip: Ø10 mm pin
Overall Height (A)	80 mm

Parameter	Specification
Grip Body Width (B)	30 mm
Overall Width (C)	50 mm
Working Temperature	Ambient
Grip Weight	Upper Grip: 0.44 kg Lower Grip: 0.44 kg
Compatible Specimen Width	≤ 30 mm

NGA502B – Eccentric Roller Tensile Grip



The **NGA502B Eccentric Roller Grip** is tailored for tensile testing of soft sheet materials such as rubber, plastic film, and other deformable specimens. Featuring an eccentric cam mechanism, the grip applies increasing clamping pressure in response to tensile load, effectively securing the specimen without slippage or surface damage. Compared to smaller models, the NGA502B offers a more robust build and larger grip body, making it ideal for medium-sized test setups requiring consistent performance under low-force testing conditions.

- **Application:** Tension tests for rubber, plastic films, and soft materials.
  Maximum Capacity: Up to 500 N load.
- **Connection:** Ø10 mm pin mount (upper and lower), compatible with standard UTMs.
- **Dimensions:** Height 97 mm; Grip body width 125 mm.
- **Specimen Range:** Supports specimens up to 30 mm wide.
- **Grip Weight:** Approximately 1.13 kg each for upper and lower grip.
- **Working Temperature:** Ambient conditions.

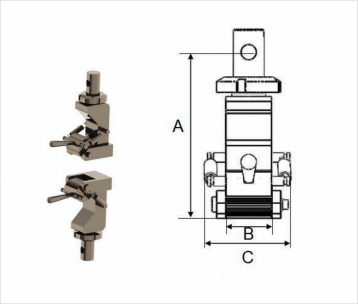
Technical Specifications – NGA502B Eccentric Roller Grip for Soft Materials

Parameter	Specification
Application	Tension test for rubber, plastic film and soft material
Maximum Force Capacity	≤ 500 N
Connection Type	Upper Grip: Ø10 mm pin Lower Grip: Ø10 mm pin
Overall Height (A)	97 mm
Grip Body Width (B)	125 mm

Parameter	Specification
Working Temperature	Ambient
Grip Weight	Upper Grip: 1.13 kg Lower Grip: 1.13 kg
Compatible Specimen Width	≤ 30 mm

NGA103A – Eccentric Roller Tensile Grip

The **NGA103A Eccentric Roller Grip** is engineered for low-force tensile testing of soft and flexible materials such as rubber sheets, thin films, and other soft specimens. It features an eccentric roller mechanism that progressively increases clamping pressure in response to tensile loading, providing secure gripping without damaging delicate materials. With a compact body and moderate height, the NGA103A offers stable and repeatable performance for specimen widths up to 30 mm and loads up to 1 kN.



- **Application:** Tension tests for rubber, plastic film, and soft sheet materials.
- **Maximum Capacity:** Up to 1 kN load.
- **Connection:** Ø10 mm pin mount (upper and lower), suitable for universal testing machines.
- **Dimensions:** Height 110 mm; Grip body width 30 mm; Overall width 60 mm.
- **Specimen Range:** Accommodates specimens up to 30 mm wide.
- **Grip Weight:** Approximately 1.34 kg each for upper and lower grip.
- **Working Temperature:** Ambient laboratory conditions.

Technical Specifications – NGA103A Eccentric Roller Grip for Soft Materials

Parameter	Specification
Application	Tension test for rubber, plastic film and soft material
Maximum Force Capacity	≤ 1 kN
Connection Type	Upper Grip: Ø10 mm pin Lower Grip: Ø10 mm pin
Overall Height (A)	110 mm

Parameter	Specification
Grip Body Width (B)	30 mm
Overall Width (C)	60 mm
Working Temperature	Ambient
Grip Weight	Upper Grip: 1.34 kg Lower Grip: 1.34 kg
Compatible Specimen Width	≤ 30 mm

Eccentric roller grips provide an ideal solution when testing materials where surface integrity and tension alignment are critical. Their cam-driven actuation and friction-lock design eliminate the need for manual tightening while ensuring test repeatability and accuracy. Designed for full integration with NextGen Test's NG-EML and SHM universal testing machines, these grips support a wide array of international test standards and are relied upon in material testing labs across North America. Contact our technical specialists to receive a quote or to upgrade your testing system with our high-performance eccentric roller grip series.

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