Compression Fixtures for Axial Load Testing of Rigid Samples

Precision Compression Test Fixtures for NG-EML and SHM Series UTMs

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NextGen's compression fixtures are designed for high-accuracy compression testing of a range of materials including metals, polymers, elastomers, foams, composites, and construction materials. These fixtures are engineered for seamless integration with NG-EML and SHM series Universal Testing Machines, supporting vertical load application and precise specimen alignment.

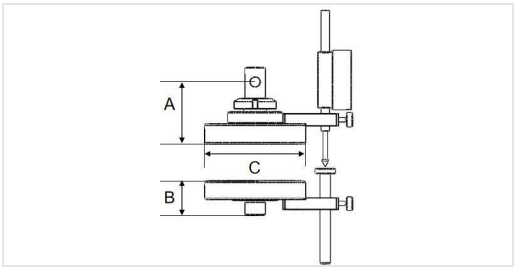
- ASTM D695 (Compressive Properties of Plastics)
- ISO 604 (Compressive Properties of Plastics)

- ASTM E9 (Compression Testing of Metallic Materials)
- GB/T 14485 (Compressive Properties of Foamed Plastics)

Each fixture offers secure load application, optimized force distribution, and high rigidity for accurate data collection and repeatability.

NGA204 – Compression Fixture Series

The **NGA204 Compression Fixture Series** is engineered for precise compression testing of various materials including concrete, metal, plastic, and composites. With a maximum load capacity of 20 kN, the series includes multiple models —**NGA204A, NGA204B, NGA204C, and NGA204E**—each designed for different specimen sizes and testing requirements. All models are compatible with Ø10 mm pin connections and operate reliably under ambient conditions. Options with and without sphere-seated platens are available to suit different testing standards. Ideal for both laboratory and industrial use, these fixtures provide stable, repeatable performance for compressive strength evaluation.

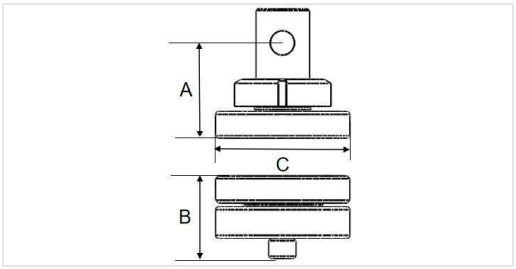


- **Application:** Compression tests for concrete, metal, plastic, and composite materials.
- **Models:** NGA204A, NGA204B, NGA204C, NGA204E.
- **Maximum Capacity:** Up to 20 kN load.
- **Diameter Options:** Φ100 mm (A, E), Φ150 mm (B), Φ200 mm (C).
- **Connection:** Ø10 mm pin (upper and lower), compatible with universal testing machines.
- **Heights:** Upper Grip: 65 mm (A, B, C), 60 mm (E); Lower Grip: 35 mm (A, B, C), 60 mm (E).
- **Widths:** 100 mm (A, E), 150 mm (B), 200 mm (C).
- **Working Temperature:** Ambient.
- **Grip Weights:** Vary by model; see detailed table below.
- **Special Features:** Model NGA204E includes a sphere-seated lower platen for better alignment.
- **Note:** Digital indicator is excluded.

Technical Specifications – NGA204 Compression Fixture Series

Model	NGA204A	NGA204B	NGA204C	NGA204E
Application	Compression test for concrete, metal, plastic, composite etc.			
Diameter	Φ100 mm	Φ150 mm	Φ200 mm	Φ100 mm
Maximum Force	≤ 20 kN			
Upper Grip Weight	1.8 kg	3.8 kg	6.5 kg	1.6 kg
Lower Grip Weight	1.4 kg	2.7 kg	4.8 kg	1.4 kg
Working Temp.	Ambient			
Connection	Ø10 mm pin (upper and lower)			
Upper Grip Height (A)	65 mm	65 mm	65 mm	60 mm
Lower Grip Height (B)	35 mm	35 mm	35 mm	60 mm
Width (C)	100 mm	150 mm	200 mm	100 mm
Sphere Seated	No	No	No	Yes
Support Roller	R2, R5 (custom options available)			

NGA105 – Compression Fixture Series



The **NGA105 Compression Fixture Series** is built for high-force compression testing of metals, composites, and other industrial components. With a force capacity of up to 100 kN, this series includes three robust models—**NGA105A, NGA105B, and NGA105C**—tailored for specimens ranging from Φ100 mm to Φ200 mm in diameter. All models feature Ø18 mm pin connections and operate at ambient conditions. The fixtures are equipped with sphere-seated platens to improve alignment under load. Models **NGA105B** and **NGA105C** also support optional digital indicator integration for advanced measurement capabilities.

- **Application:** Compression tests for metal, composite, and structural components.
- **Models:** NGA105A, NGA105B, NGA105C.
- **Maximum Capacity:** Up to 100 kN load.
- **Diameter Options:** Φ100 mm, Φ150 mm, and Φ200 mm.
- **Connection:** Ø18 mm pin (upper and lower), compatible with high-load universal testing machines.
- **Heights:** Upper Grip: 70–90 mm; Lower Grip: 60–66 mm depending on the model.
- **Widths:** 100 mm (A), 150 mm (B), 200 mm (C).
- **Sphere Seated:** Yes (included in all models).
- **Working Temperature:** Ambient.
- **Note:** NGA105B and NGA105C can be equipped with an optional digital indicator.

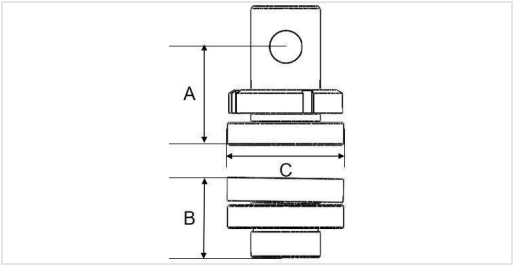
Technical Specifications – NGA105 Compression Fixture Series

Model	NGA105A	NGA105B	NGA105C
Application	Compression test for metal, composite and other components.		

Model	NGA105A	NGA105B	NGA105C
Diameter	Φ100 mm	Φ150 mm	Φ200 mm
Maximum Force	≤ 100 kN		
Upper Grip Weight	2.4 kg	5.1 kg	7.8 kg
Lower Grip Weight	2.8 kg	5.0 kg	7.6 kg
Working Temp.	Ambient		
Connection	Ø18 mm pin (upper and lower)		
Upper Grip Height (A)	70 mm	90 mm	90 mm
Lower Grip Height (B)	60 mm	66 mm	60 mm
Width (C)	100 mm	150 mm	200 mm
Sphere Seated	Yes		

NGA305 – Compression Fixture Series

The **NGA305 Compression Fixture Series** is a heavy-duty solution for high-force compression testing of metals, composites, and other structural materials. With a maximum load capacity of up to 300 kN, these fixtures are suited for demanding industrial and research environments. The series includes three models—**NGA305A, NGA305B, and NGA305C**—offering platen diameters of Φ100 mm, Φ150 mm, and Φ200 mm, respectively. All models feature Ø28 mm pin connections and sphere-seated platens for precise alignment under load. Additionally, **NGA305B** and **NGA305C** are compatible with optional digital indicators for deformation measurement.



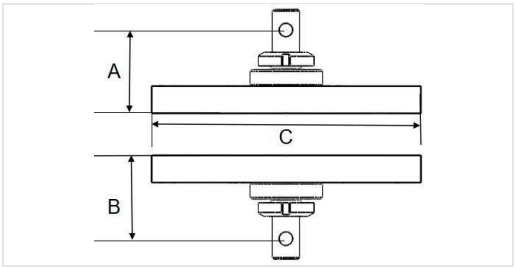
- **Application:** Compression tests for metal, composite, and structural components.
- **Models:** NGA305A, NGA305B, NGA305C.
- **Maximum Capacity:** Up to 300 kN load.
- **Diameter Options:** Φ100 mm, Φ150 mm, Φ200 mm.
- **Connection:** Ø28 mm pin (upper and lower), compatible with high-load universal testing machines.
- **Heights:** Upper Grip: 86–116 mm; Lower Grip: 56–72 mm depending on model.
- **Widths:** 100 mm (A), 150 mm (B), 200 mm (C).
- **Sphere Seated:** Yes (included on all models).
- **Working Temperature:** Ambient.
- **Note:** NGA305B and NGA305C can be equipped with an optional digital indicator.

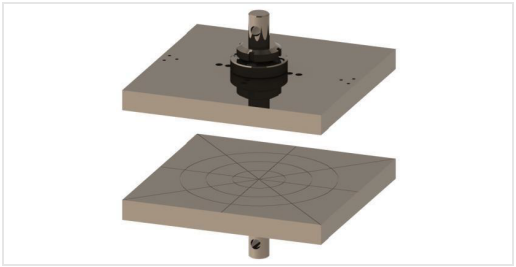
Technical Specifications – NGA305 Compression Fixture Series

Model	NGA305A	NGA305B	NGA305C
Application	Compression test for metal, composite and other components.		

Model	NGA305A	NGA305B	NGA305C
Diameter	Φ100 mm	Φ150 mm	Φ200 mm
Maximum Force	≤ 300 kN		
Upper Grip Weight	4.0 kg	7.1 kg	9.8 kg
Lower Grip Weight	3.1 kg	5.4 kg	8.1 kg
Working Temp.	Ambient		
Connection	Ø28 mm pin (upper and lower)		
Upper Grip Height (A)	86 mm	115 mm	116 mm
Lower Grip Height (B)	68 mm	56 mm	72 mm
Width (C)	100 mm	150 mm	200 mm
Sphere Seated	Yes		

NGB204 – Compression Fixture Series





The **NGB204 Compression Fixture Series** is engineered specifically for the compression testing of rigid foam materials. Available in two models—**NGB204A** and **NGB204B**—this fixture supports specimen sizes up to 300 × 300 mm and accommodates test forces up to 20 kN. Both models feature a flat platen design without sphere seating and are suitable for precise, stable compression testing under ambient conditions. Their large surface area and rigid construction make the NGB204 series ideal for applications in insulation, packaging, and structural foam testing.

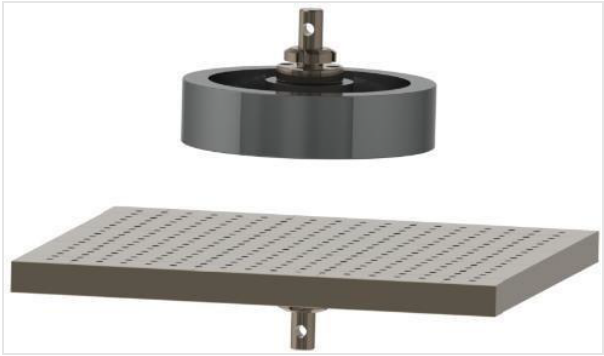
- **Application:** Compression tests for rigid foam materials.
- **Models:** NGB204A and NGB204B.
- **Maximum Capacity:** Up to 20 kN load.
- **Specimen Sizes:** 200 × 200 mm (A), 300 × 300 mm (B).
- **Connection:** Ø10 mm pin (upper and lower), suitable for standard testing frames.
- **Heights:** 62 mm (upper and lower grips for both models).
- **Widths:** 200 mm (A), 300 mm (B).
- **Sphere Seated:** Not included.
- **Working Temperature:** Ambient.
- **Note:** Optional digital indicator can be equipped.

Technical Specifications – NGB204 Compression Fixture for Rigid Foam

Model	NGB204A	NGB204B
Application	Compression for rigid foam	

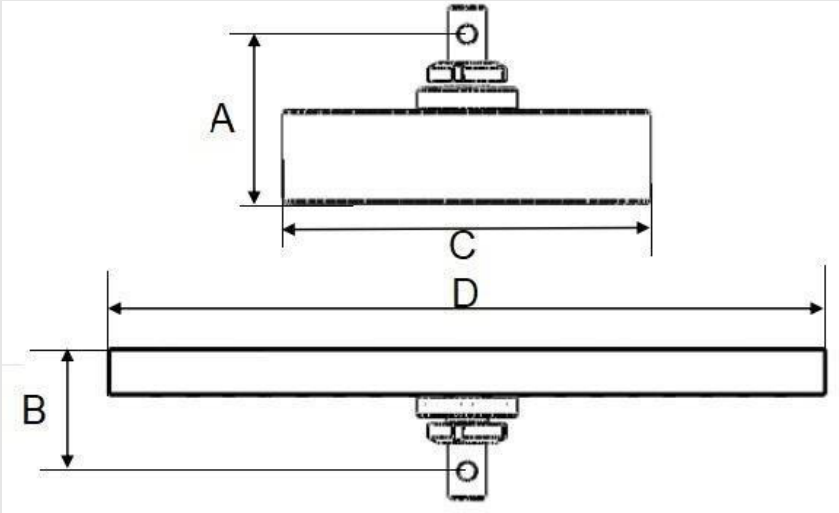
Model	NGB204A	NGB204B
Specimen Size (Diameter)	200 × 200 mm	300 × 300 mm
Maximum Force Capacity	≤ 20 kN	≤ 20 kN
Upper Grip Weight	6.6 kg	14.5 kg
Lower Grip Weight	6.6 kg	14.5 kg
Working Temperature	Ambient	
Connection Type	Ø10 mm pin (upper and lower)	
Upper Grip Height (A)	62 mm	62 mm
Lower Grip Height (B)	62 mm	62 mm
Width (C)	200 mm	300 mm
Sphere Seated	No	

NGC203A – Compression Fixture



The **NGC203A Compression Fixture** is designed for low-force compression testing of foam materials, particularly those requiring large-area support during loading. It features a Φ200 mm indenter and a 390 × 390 mm support plate to distribute load evenly across the specimen. This setup is ideal for testing large or deformable foam components under low compressive forces. The fixture connects via standard Ø10 mm pins and operates under ambient laboratory conditions. Its heavy-duty lower grip ensures maximum stability during testing.

- **Application:** Compression tests for foam materials.
- **Maximum Capacity:** Up to 2 kN load.
- **Indenter Diameter:** Φ200 mm.
- **Support Plate:** 390 mm × 390 mm.
- **Connection:** Ø10 mm pin (upper and lower), compatible with standard testing machines.
- **Height:** 90 mm (upper grip), 70 mm (lower grip).
- **Width:** 200 mm (upper grip), 390 mm (lower grip).
- **Grip Weight:** 3.5 kg (upper grip), 28.6 kg (lower grip).
- **Working Temperature:** Ambient.



Technical Specifications – NGC203A Compression Fixture for Foam

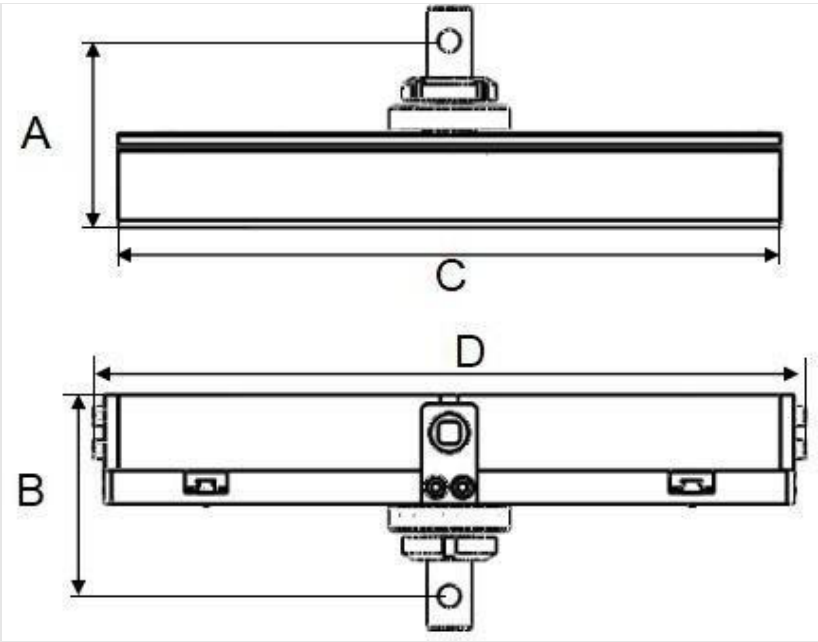
Parameter	Specification
Application	Compression test for foam
Indenter Diameter	Φ200 mm
Support Plate	390 mm × 390 mm
Maximum Force Capacity	≤ 2 kN
Upper Grip Weight	3.5 kg
Lower Grip Weight	28.6 kg
Working Temperature	Ambient
Connection Type	Ø10 mm pin (upper and lower)
Upper Grip Height (A)	90 mm

Parameter	Specification
Lower Grip Height (B)	70 mm
Upper Grip Width (C)	200 mm
Lower Grip Width (D)	390 mm

NGC203B – Compression Fixture

The **NGC203B Compression Fixture** is specifically designed for low-force compression testing of sponge and similar soft materials. With a maximum force capacity of 2 kN, this fixture ensures reliable testing conditions for highly deformable specimens. It features a wide platen setup (up to 320 mm) and stable construction for accurate load application. The system connects via standard Ø10 mm pins and is suitable for universal testing machines operating in ambient environments.

- **Application:** Compression tests for sponge and soft foam materials.
- **Maximum Capacity:** Up to 2 kN load.
- **Connection:** Ø10 mm pin (upper and lower), compatible with common UTM setups.
- **Height:** 85 mm (upper grip), 90 mm (lower grip).
- **Width:** 300 mm (upper grip), 320 mm (lower grip).
- **Grip Weight:** 0.8 kg (upper grip), 4.1 kg (lower grip).
- **Working Temperature:** Ambient.



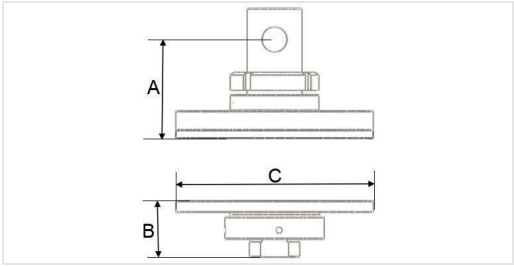
Technical Specifications – NGC203B Compression Fixture for Sponge

Parameter	Specification
Application	Compression test for sponge
Maximum Force Capacity	≤ 2 kN
Upper Grip Weight	0.8 kg
Lower Grip Weight	4.1 kg
Working Temperature	Ambient
Connection Type	Ø10 mm pin (upper and lower)
Upper Grip Height (A)	85 mm
Lower Grip Height (B)	90 mm

Parameter	Specification
Upper Grip Width (C)	300 mm
Lower Grip Width (D)	320 mm

NGA305B – Compression Fixture

The **NGA305B Compression Fixture** is a high-capacity setup designed for compression testing of concrete and other dense, rigid materials. With a load capacity of up to 300 kN and a robust platen width of 220 mm, this fixture is suitable for structural material testing under heavy loads. It features Ø28 mm pin connections and a stable, heavy-duty design to ensure accurate force application. Ideal for industrial testing environments, NGA305B delivers repeatable performance for strength verification of construction-grade materials.



- **Application:** Compression tests for concrete and rigid construction materials.
- **Maximum Capacity:** Up to 300 kN load.
- **Connection:** Ø28 mm pin (upper and lower), compatible with heavy-load test frames.
- **Height:** 137 mm (upper grip), 72.5 mm (lower grip).
- **Width:** 220 mm.
- **Grip Weight:** 10.3 kg (upper grip), 7.0 kg (lower grip).
- **Working Temperature:** Ambient.

Technical Specifications – NGA305B Compression Fixture for Concrete

Parameter	Specification
Application	Compression test for concrete
Maximum Force Capacity	≤ 300 kN
Upper Grip Weight	10.3 kg

Parameter	Specification
Lower Grip Weight	7.0 kg
Working Temperature	Ambient
Connection Type	Ø28 mm pin (upper and lower)
Upper Grip Height (A)	137 mm
Lower Grip Height (B)	72.5 mm
Width (C)	220 mm

NextGen's compression fixture lineup is built to deliver consistent results across multiple materials and test environments. From standard plastics testing to advanced composite characterization, these tools meet stringent ISO and ASTM requirements. Contact NextGen Material Testing, Inc. to request a quote or receive guidance in selecting the optimal fixture for your UTM system.

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