INSTRON®

The difference is measurable®

Mini High-Temperature Pneumatic Wedge Grips

Features

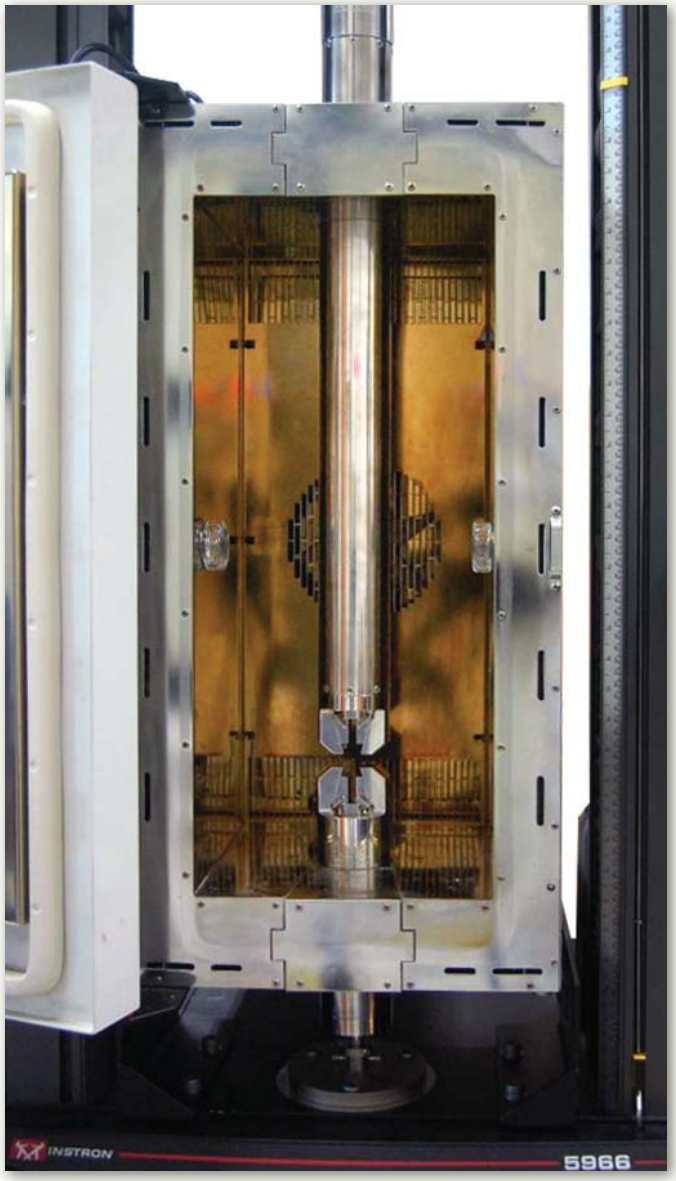
- Available in 100 N and 1 kN capacities
- Pneumatic actuation improves testing throughput and provides consistent initial gripping force
- 60 mm diameter allows the grip to be pulled out of the chamber porthole maximizing grip separation
- Moving body design provides accurate, repeatable specimen alignment and minimize compressive preload on the specimen during clamping
- Interchangeable jaw faces for a range of specimen geometries and types
- Designed for easy changing of faces
- Temperature range: Ambient to +150 °C for CP111623 and ambient to +200 °C for CP111624

Principle of Operation

The mini high-temperature wedge grips offer an effective gripping solution for tensile testing of high elongation materials under high-temperature conditions. Each grip comes with an integrated pull rod to fit inside the chamber. The grip is actuated by an air piston connected to the end of the pull rod and the piston is located outside of the chamber. To further maximize the test space, the grip body is specially designed such that it is sufficiently small to be pulled out of the chamber through the porthole.

The wedge principle of these grips allows them to be tightened onto a specimen without altering the vertical position of the jaw faces with respect to the specimen. This is achieved by a design that drives the grip body to close the jaw faces together symmetrically, in a self-centering action, to clamp the specimen. This feature makes it possible to the exact position at which the specimen will be held and also to minimize any axial compressive preload applied during clamping that may cause specimen buckling.

The gripping force is controlled by adjusting the inlet air pressure and remains constant on the specimen to provide the 'follow-up' action to compensate for any changes to the specimen thickness during the test. The open front and back grip design facilitates easy loading of specimens and jaw faces are interchangeable to accommodate for a wide range of materials.



Applications

- Type of Loading: Tensile; not suitable for through-zero/reverse stress or fatigue testing
- Specimen Materials: Plastics, elastomers, thin films*
- Specimen Types: Flat specimens with or without shoulders

*Thin films with thickness greater than 0.5 mm

Specifications

		CP111623	CP111624
Maximum Load	N	100	1000
	lbf	22.5	225
Temperature Range	°C	Ambient to +150	Ambient to +200
	°F	Ambient to +302	Ambient to +392
Operating Pressure	bar	6	6
	psi	90	90
Air Consumption[1]	l/min	<0.2	<0.2
Weight of Upper Grip	kg	1.6	3.9
	lb	3.9	8.6
Weight of Lower Grip	kg	0.8	2.8
	lb	1.8	6.2

Mechanical Connection

Upper Interface		6 mm Connection with 2.5 mm Clevis Pin (Type 00m)	12 mm Connection with 6 mm Clevis Pin (Type 0m)
Lower Interface		Direct to Machine Base via Type 0m Base Adapter (included)	Direct to Machine Base via Type 0m Base Adapter (included)

Dimensions

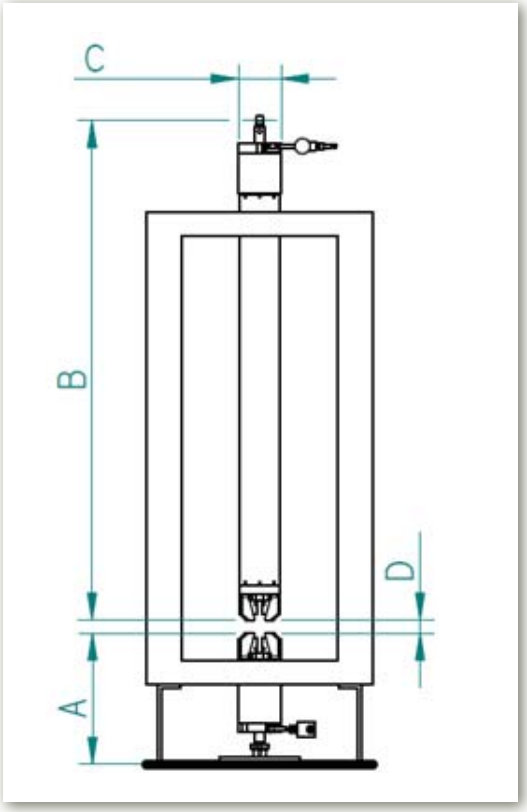
Lower Effective Length (A)	mm	240	240
	in	9.5	9.5
Upper Effective Length (B)	mm	780	780
	in	30.7	30.7
Overall Diameter (C)	mm	60	60
	in	2.4	2.4
Maximum Specimen Width	mm	25.4	25.4
	in	1.0	1.0

Notes:

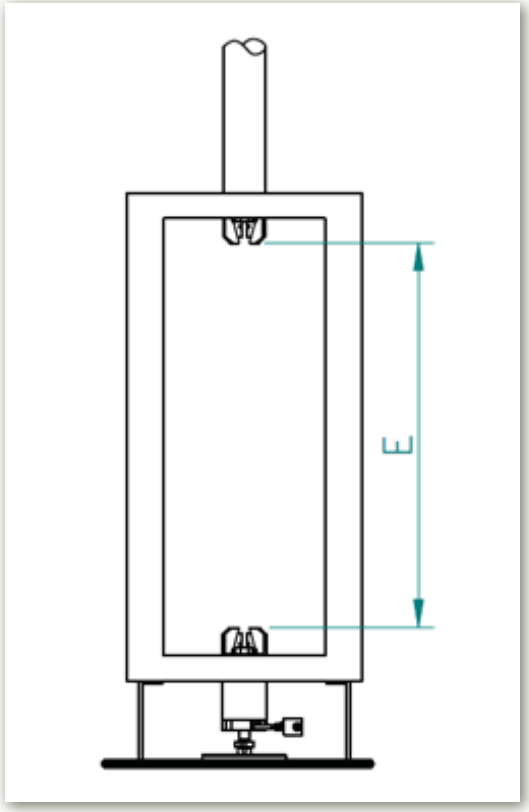
1. The grips consume very little air. This information is sometimes requested by facilities engineers responsible for maintenance of air compressors for the customer's building. Air consumption is estimated based on one gripping cycle per minute for the grip set (upper and lower grips added together).
2. Grip catalog number provides two grips.
3. Grip requires a footswitch or an air control kit to operate.
4. Please consult factory for use under sub ambient conditions or with video extensometers.

Accessories

	Description
2701-004	Pneumatic Footswitch
2701-065	Automatic Air Control Kit
CP101866	Smooth Faces, Flat, 25.4 × 25.4 mm (1 × 1 in) Suitable for Specimen Thickness 0 - 6.35 mm (0-0.25 in)
CP101867	Serrated Faces, Flat, 25.4 × 25.4 mm (1 × 1 in) Suitable for Specimen Thickness 0 - 6.35 mm (0-0.25 in)



Minimum Grip Separation



Maximum Grip Separation

CP111623 Grip Separation Table

Frames		Chambers			
		3119-409	3119-506	3119-606	3119-609
336X E2[1]	D, E	0 mm, 570 mm	0 mm, 510 mm	0 mm, 510 mm	0 mm, 610 mm
596X E2[1]					

CP111624 Grip Separation Table

Frames		Chambers			
		3119-409	3119-506	3119-606	3119-609
336X E2[2]	D, E	0 mm, 570 mm	0 mm, 510 mm	0 mm, 510 mm	0 mm, 610 mm
5965/6 E2[3]					
5967/9 E2[3]	D, E	0 mm, 570 mm	0 mm, 510 mm	0 mm, 510 mm	0 mm, 600 mm

Notes:

1. Grip separation is calculated using 2530-427 load cell.
2. Grip separation is calculated using 2530-426 load cell.
3. Grip separation is calculated using 2580-106 load cell.
4. Grip separation varies depending on the load cells and adaptors used.
5. Grips are designed to maximize grip separation on extra height machines.

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