

250 kN High-Temperature Extended Hydraulic Grips

Instron® 250 kN Extended Hydraulic Grips provide reliable gripping and excellent alignment over a wide temperature range on both Servohydraulic and Electromechanical testing systems.

Features

- Fully-automatic hydraulic actuation with adjustable gripping force provides consistent results
- Temperature range: -70 to +350 °C (-100 to +660 °F)
- Symmetrical moving body design provides accurate and repeatable specimen alignment
- Adjustable specimen stops ensures accurate specimen alignment
- When used in conjunction with a suitable system and an AlignPRO Alignment fixture the grips meet the alignment criteria of Nadcap AC7101 and AC7122
- All hydraulic components are located outside the temperature chamber for reliable and safe operation
- Front loading of flat specimens improves productivity
- Interchangeable jaw faces for flat and cylindrical specimens.
- Optional “piggy back” adaptors are available for test fixtures (e.g. compression platens) to be installed on the grips allowing additional tests to be performed without the need to remove and re-install the grips

Principle of Operation

The grips consist of a moving wedge head operated by a hydraulic cylinder via an integrated extender tube. The grip head has a horizontal opening with tapered sides that move the grip faces toward or away from each other. A pair of side plates hold the faces in place. Four springs attach the jaw faces to the extender bearing surface.

The center of the grip head has a vertical bore that ends at the opening containing the jaw faces. One end of the piston extender passes through the bore, contacting the jaw faces. Dependent on the driver's position, the grip head is raised or lowered against the stationary piston extender. Its tapered sides move the jaw faces together or apart.

The high-temperature hydraulic wedge grips incorporate water cooling to eliminate the possibility of over-heating of the hydraulic system when testing at high temperatures.

An anti-rotation pin within the driver prevents rotation of the grip. A specimen guide attaches to one of the jaw faces to help center the specimen in the jaws and to provide repeatable specimen positioning for a series of specimens.

Notes:

1. Performing compression tests on specimens clamped directly in extended grips is not recommended due to the relatively low lateral stiffness of the arrangement due to the length of the extenders. Compression testing using guided test fixtures is possible.



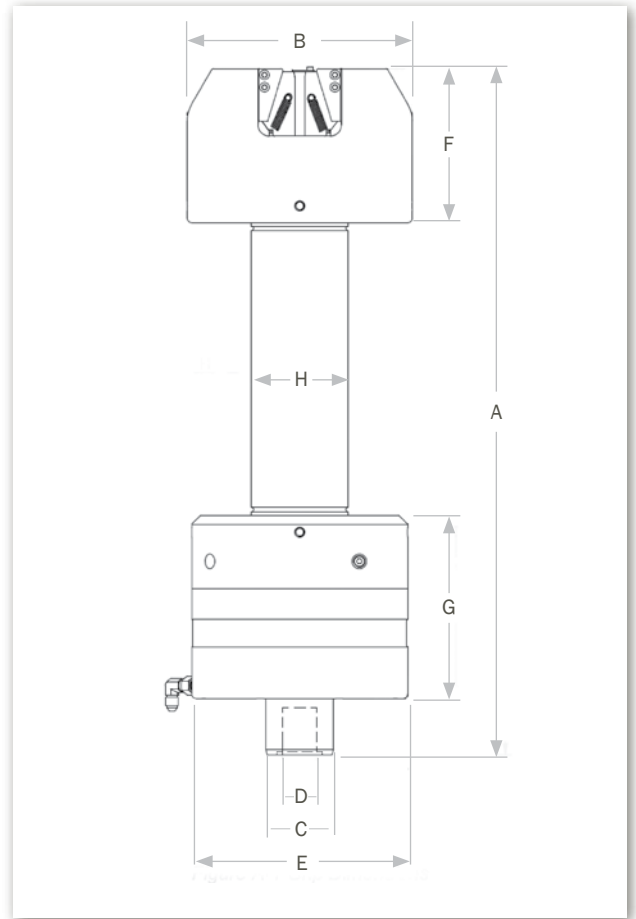
To meet the demands of testing to specific alignment criteria, such as Nadcap, the grips are combined with an AlignPRO fixture system, which allows operators to measure and adjust the load string alignment.

Application Range

- Static and dynamic tensile tests on a wide range of materials including composites, metals, and plastics.¹
- Range of additional tests possible using optional test fixtures.

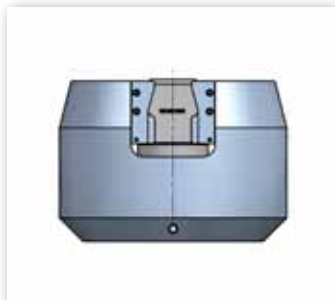
Specifications

Upper Grip Height A		Various to Suit Machine/Chambers
Lower Grip Height A	mm in	545
Grip Head B	mm in	290
Piston Diameter C	mm in	120
Internal Thread D		M48 x 2
Driver Diameter E	mm in	290
Head Height F	mm in	205
Driver Height G	mm in	190
Extender Height	mm in	130
Upper Grip Weight		Various to Suit Grip Height
Lower Grip Weight	kgs	180

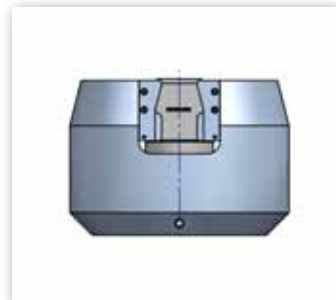


Wedge Adapters

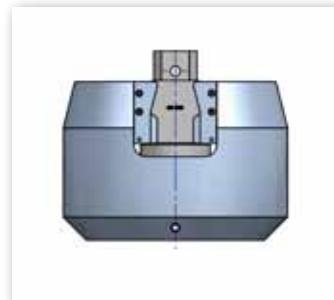
	Fitting	Static Load Capacity	Dynamic Load Capacity	Temperature Range
CP108544	M48 LH, Low Profile	312 kN	250 kN	-70 to +350 °C (-100 to +660 °F)
CP109391	Accessories Placed Directly on Top Face of the Lower Grip	312 kN	250 kN	-70 to +350 °C (-100 to +660 °F)
CP108543	Df (1.25 in Connection with 1/2 in Clevis Pin)	100 kN		-70 to +350 °C (-100 to +660 °F)
CP110016	Df (1.25 in Connection with 1/2 in Clevis Pin), Low Profile	100 kN		-70 to +350 °C (-100 to +660 °F)



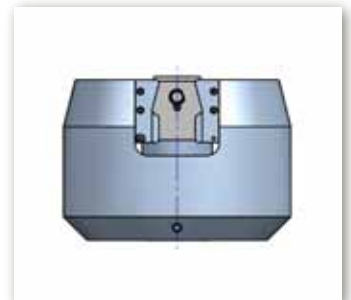
Adapter CP108544



Adapter CP109391



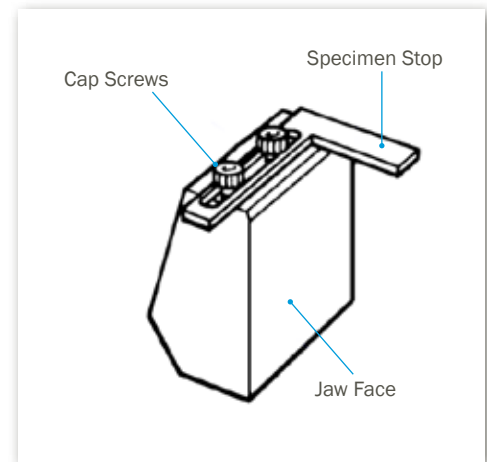
Adapter CP108543



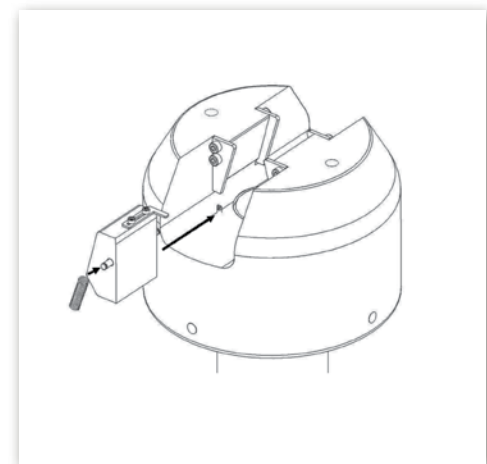
Adapter CP110016

Jaw Faces

		Specimen Thickness	Specimen Diameter	Clamping Area (WxH)	Surface
2703-541	mm	1 to 12		100 x 90	Flat Serrated
	in	0.04 to 0.471		4 x 3.5	
2703-542	mm	11 to 22		100 x 90	Flat Serrated
	in	0.43 to 0.87		4 x 3.5	
2703-543	mm	21 to 32		100 x 90	Flat Serrated
	in	0.83 to 1.26		4 x 3.5	
2703-544	mm	31 to 42		100 x 90	Flat Serrated
	in	1.22 to 1.65		4 x 3.5	
2703-545	mm		11 to 22	100 x 90	V-Serrated
	in		0.43 to 0.87	4 x 3.5	
2703-546	mm		11 to 22	100 x 90	V-Serrated
	in		0.43 to 0.87	4 x 3.5	
2703-547	mm		11 to 22	100 x 90	V-Serrated
	in		0.43 to 0.87	4 x 3.5	
2703-548	mm		11 to 22	100 x 90	V-Serrated
	in		0.43 to 0.87	4 x 3.5	
2703-549	mm		11 to 22	100 x 90	V-Serrated
	in		0.43 to 0.87	4 x 3.5	
2703-572	mm	1 to 12		100 x 90	Flat Carbide-Coated, Surfalloy
	in	0.04 to 0.471		4 x 3.5	
2703-573	mm	11 to 22		100 x 90	Flat Carbide-Coated, Surfalloy
	in	0.43 to 0.87		4 x 3.5	
2703-574	mm	21 to 32		100 x 90	Flat Carbide-Coated, Surfalloy
	in	0.83 to 1.26		4 x 3.5	
2703-575	mm	31 to 42		100 x 90	Flat Carbide-Coated, Surfalloy
	in	1.22 to 1.65		4 x 3.5	



L-Shaped Specimen Guide



Grip Jaw Face Installation



Hydraulic Power Supply

Power Packs

- Stand-Alone Grip Controller and Hydraulic Power Supply- 207 Bar (3000 psi), Dual acting/Dual stage
- This self-contained unit provides opening and closing control of hydraulic grips with adjustable gripping pressure and handset controls
- Dual acting provides pressure to close as well as open the grips
- Dual stage provides High flow/Low pressure and Low flow/High pressure clamping.
- Includes hoses for connection to the grips and casters for easy relocation

Dimensions:

- 360mm X 560mm X 1100mm (W x D x H)
- Select appropriate voltage (120,240, or 220 VAC)
- Optional replenish available (advisable for test durations over 24 minutes)

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