

# 100 kN High Temperature Extended Hydraulic Wedge Grips

Catalog Number CP104947

The Instron® 100 kN high temperature extended hydraulic wedge grips provide reliable gripping and excellent alignment over a wide temperature range on both servohydraulic and electromechanical testing systems.

## 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. Depending 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 overheating 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 positioning for a series of specimens.

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.

## FEATURES

- Fully-automatic hydraulic actuation with adjustable gripping force provides consistent results
- Temperature range: -70 to +350 °C (-94 to +662 °F)
- Symmetrical moving body design provides accurate and repeatable specimen alignment
- Adjustable specimen stops ensure 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 "piggyback" adapters 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



## APPLICATION RANGE

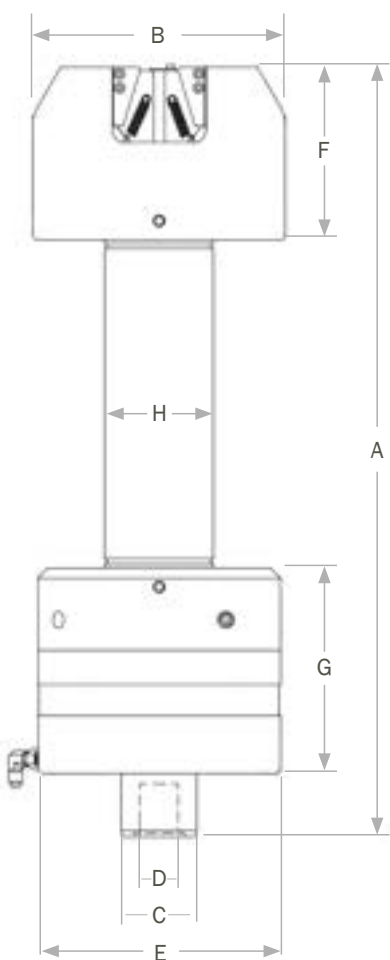
- Static and dynamic tensile tests on a wide range of materials including composites, metals, and plastics<sup>1</sup>
- Range of additional tests possible using optional test fixtures

### Note:

1. Compression tests on specimens clamped directly in the grips are not recommended due to the relatively low lateral stiffness of the load string, which results from the extended grip length. However, guided test fixtures commonly used for composites compression testing provide a suitable alternative for these grips.

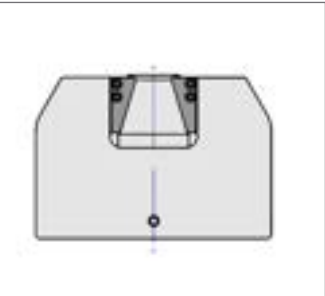
SPECIFICATIONS

Upper Grip Height (A)	mm	721
	in	28.39
Lower Grip Height (A)	mm	505
	in	19.88
Grip Head Diameter (B)	mm	200
	in	7.87
Piston Diameter (C)	mm	60.2
	in	2.37
Internal Thread (D)		M30 × 2
Driver Diameter (E)	mm	192
	in	7.56
Head Height (F)	mm	137
	in	5.39
Driver Height (G)	mm	163
	in	6.42
Extender Diameter (H)	mm	86
	in	3.39
Upper Grip Weight	kg	73
	lbs	160.9
Lower Grip Weight	kg	65
	lbs	143.3

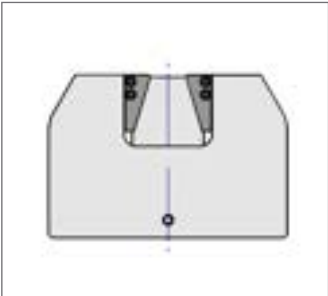


WEDGE ADAPTERS

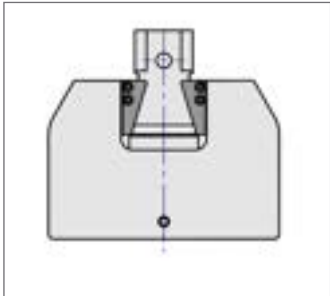
		2501-257	CP109439	2501-260	2501-258
Fitting		M30 LH, Low Profile	Accessories Placed Directly on Top Face of the Lower Grip	Df (1.25 in Connection with 1/2 in Clevis Pin)	Df (1.25 in Connection with 1/2 in Clevis Pin), Low Profile
Static Load Capacity	kN	130	130	100	100
	lbf	29,225	29,225	22,480	22,480
Dynamic Load Capacity	kN	100	100	-	-
	lbf	22,480	22,480	-	-
Temperature Range	°C	-70 to +350	-70 to +350	-70 to +350	-70 to +350
	°F	-94 to +662	-94 to +662	-94 to +662	-94 to +662



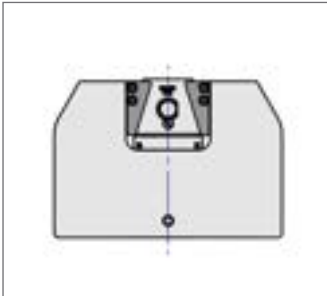
2501-257 Wedge Adapter M30 LH - Low Profile



CP109439 Wedge Adapter Allows Accessories to be Placed Directly on Top Face of the Lower Grip



2501-260 Wedge Adapter Df



2501-258

## JAW FACES

Catalog Number	Specimen Thickness		Specimen Diameter		Clamping Area (W×H)		Surface
	mm	in	mm	in	mm	in	
2704-521	0 to 7.8	0 to 0.31	-	-	50 × 57	2 × 2.25	Flat Serrated
2704-522	7.1 to 15.7	0.28 to 0.62	-	-	50 × 57	2 × 2.25	Flat Serrated
2704-523	-	-	6.1 to 11.9	0.24 to 0.47	50 × 57	2 × 2.25	V-Serrated
2704-524	-	-	9.9 to 16.0	0.39 to 0.63	50 × 57	2 × 2.25	V-Serrated
2704-525	0 to 7.8	0 to 0.31	-	-	50 × 57	2 × 2.25	Flat Carbide-Coated, Surfalloy
2704-526	7.1 to 15.7	0.28 to 0.62	-	-	50 × 57	2 × 2.25	Flat Carbide-Coated, Surfalloy



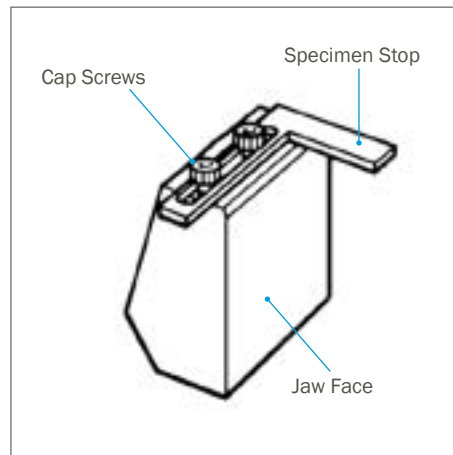
Hydraulic Power Supply

## POWER PACKS

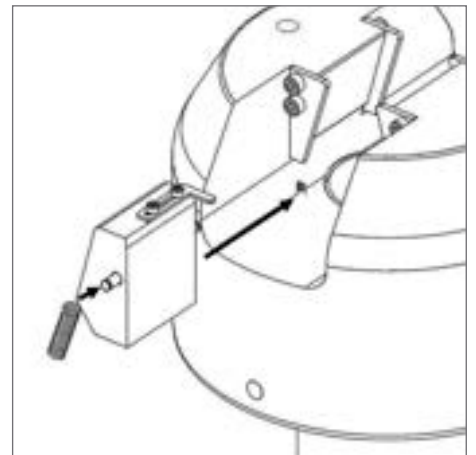
- Stand-alone grip controller and hydraulic power supply (207 Bar (3000 psi)), dual acting / dual stage
- The self-contained unit provides opening and closing control of hydraulic grips with adjustable gripping pressure and handset controls
- Dual acting provides pressure to open and close the grips
- 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:

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



L-Shaped Specimen Guide



Grip Jaw Face Installation

[www.instron.com](http://www.instron.com)



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