

# 100 kN Universal Hydraulic Wedge Action Grips | 2743-401

The Instron® 100 kN hydraulic wedge action grips may be used in static or dynamic materials testing applications. The interchangeable grip jaw faces accommodate both flat or round specimens. The grip design maintains a constant gripping force on the test specimen, regardless of the applied test forces. This controlled gripping force is applied by the grips as long as there is adequate hydraulic pressure supply that is active and connected.

## Features and Benefits

- Rated capacity:  $\pm 100$  kN (22 kip)
- Side-entry design with full access for easy specimen insertion
- Interchangeable jaw faces suitable for gripping various material types
- Suitable for a wide range of specimen thickness without the need to change jaw faces
- Jaw faces for flat and round specimen geometries
- Optional adjustable specimen stops on flat faces provide repeatable and accurate specimen centering
- Suitable for tension, compression, and fatigue testing up to the full reverse-stress dynamic rating
- Operated from a load frame mounted hydraulic grip manifold or via a stand-alone grip controller
- Temperature range: +4 to +65 °C (+39 to +149 °F)

## Principle of Operation

Although an external hydraulic supply provides pressure to open and close the grips, each grip functions independently of the other.

When gripping pressure is applied, the relative vertical position of the specimen/jaw faces remains unchanged, which reduces load applied to the specimen during the gripping process.

Once the grip faces contact the specimen, the hydraulic pressure produces a vertical force on the grip head. The grip force will remain constant as the design automatically compensates for specimen thickness changes.

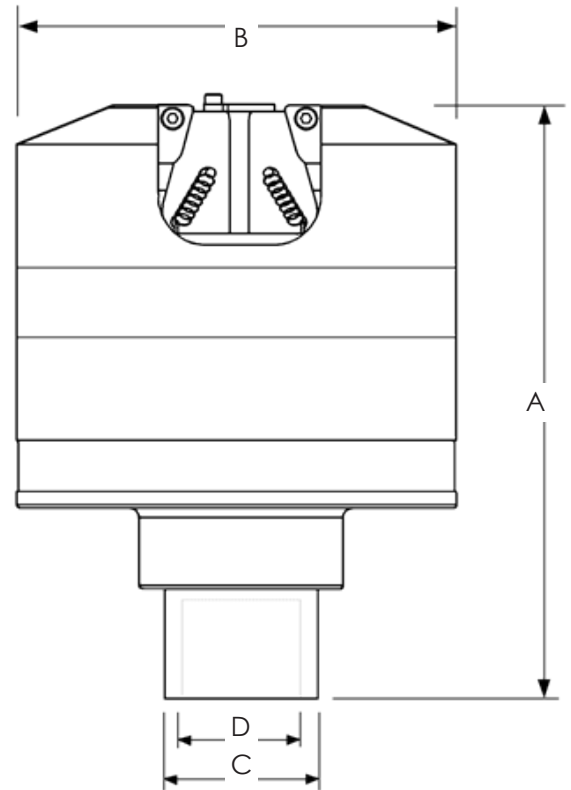
## Application Range

- Type of loading: Static or dynamic, reverse stress
- Specimen material: Metals, plastics, composites
- Specimen geometries: Round section (not buttonhead) or flat specimens with or without shoulder tab



## Specifications

Dynamic Load Capacity	kN	100
	lbf	22480
	kgf	10197
Static Load Capacity	kN	130
	lbf	29225
	kgf	13256
Hydraulic Pressure Range	bar	0 to 207
	psi	0 to 3000
Overall Height (A) - Jaws Open	mm	219
	in	8.62
Overall Height (A) - Jaws Closed	mm	234
	in	9.21
Overall Diameter (B)	mm	200
	in	7.87
Piston Diameter (C)	mm	60
	in	2.36
Internal Thread (For Attachment) (D)		M30 × 2-6H (right hand) female
Construction		Machined Steel with an Electroless Nickel Finish
Weight (Per Grip, without Jaw Faces)	kg	33
	lb	73
Temperature Range	°C	+4 to +65
	°F	39.2 to 149
Operating Principle		Double Acting Piston, Wedge
Gripping Force (max)	kN	195
	lbf	43,839



## Accessories

### Catalog Number Description

2718-111	207 bar (3000 psi) hydraulic grip controller and manifold. Suitable for use on 8801,8802, 8803, 8804 and 8872, 8874. Includes hoses for connection to the grips and to the systems hydraulic supply. Not suitable for use with furnaces or temperature chambers.
2704-530	Accessory mounting block for use with 100kN hydraulic wedge grips 2743-401. Provides central M30x2 RH female thread for mounting fixtures for static or dynamic testing applications. Set of 2 blocks. Requires fatigue rated adaptors.

### Notes:

- Requires an attachment kit for mounting the hydraulic grips to the loadcell and machine base or actuator.
- Free-standing electric pump and grip controls are available; please consult factory for details.

## Jaw Faces

Catalog Number	Jaw Face Type	Specimen Thickness		Surface	Clamping Area (W × H)	
		mm	in		mm	in
2704-521	Flat	0 to 7.8	0 to 0.31	Serrated, 1 mm Pitch	50 × 57	2.0 × 2.25
2704-522	Flat	7.1 to 15.7	0.28 to 0.62	Serrated, 1 mm Pitch	50 × 57	2.0 × 2.25
2704-527	Flat	16.5 to 25.2	0.65 to 0.99	Serrated, 1mm Pitch	50 × 57	2.0 × 2.25
2704-529	Flat	15 to 21	0.59 to 0.82	Serrated, 1mm Pitch	50 × 57	2.0 × 2.25
2704-525	Flat	0 to 7.8	0 to 0.31	Carbide Coated	50 × 57	2.0 × 2.25
2704-526	Flat	7.1 to 15.7	0.28 to 0.62	Carbide Coated	50 × 57	2.0 × 2.25
2704-523	Vee	6.1 to 11.9	0.24 to 0.47	V - Serrated	57	2.25
2704-524	Vee	9.9 to 16.0	0.39 to 0.63	V - Serrated	57	2.25
2704-528	Vee	16.0 to 20.0	0.63 to 0.78	V - Serrated	57	2.25

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