

# 250 kN UNIVERSAL HYDRAULIC WEDGE ACTION GRIPS

2742-501

The Instron® 250 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.

## 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: Metallics, plastics, composites
- Specimen geometries: Round section (not buttonhead) or flat specimens with or without shoulder tab



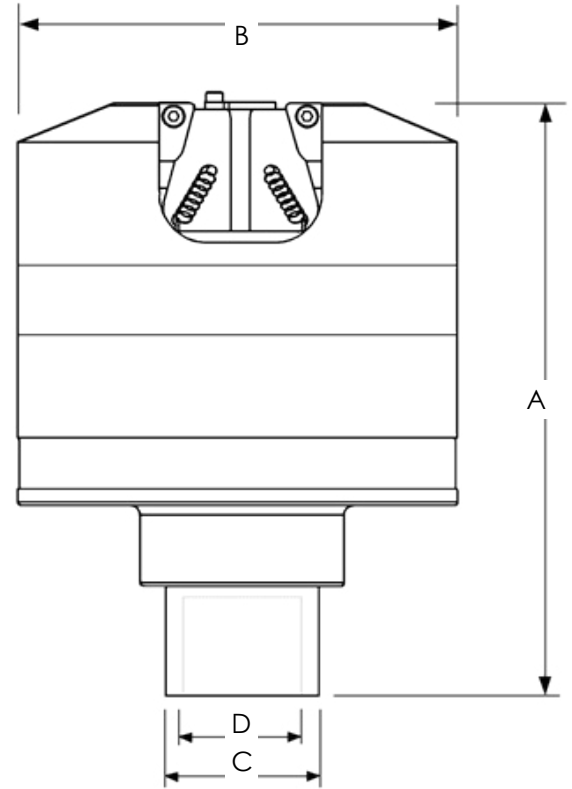
±250 kN (65 kip) universal hydraulic wedge-action grips

## FEATURES

- Dynamic rated capacity: ±250 kN (56 kip)
- Static rated capacity 312 kN (70 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)

## SPECIFICATIONS

Dynamic Load Capacity	kN	250
	kip	65
Static Load Capacity	kN	312
	kip	70
Hydraulic Pressure Range	bar	0 to 207
	psi	0 to 3000
Overall Height (A) - Jaws Open	mm	311
	in	12.24
Overall Height (A) - Jaws Closed	mm	288
	in	11.34
Overall Diameter (B)	mm	320
	in	12.6
Piston Diameter (C)	mm	97
	in	3.82
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	137
	lb	302
Temperature Range	° C	+4 to +65
	° F	39.2 to 149
Operating Principle		Double Acting Piston, Wedge
Gripping Force (max)	kN	464
	kip	104,311



## 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.
8000-123	Accessory mounting block for use with 250kN hydraulic wedge grips 2742-501. Provides central M48x2 RH female thread for mounting fixtures for static or dynamic testing applications. Set of 2 blocks. Requires fatigue rated adaptors.

- Notes: 1. Requires an attachment kit for mounting the hydraulic grips to the loadcell and machine base or actuator.  
2. 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 x H)	
		mm	in		mm	in
2703-541	Flat	1.0 to 12.0	0.04 to 0.47	Serrated, 1 mm Pitch	100 x 90	3.94 to 3.54
2703-542	Flat	11 to 22	0.43 to 0.87	Serrated, 1 mm Pitch	100 x 90	3.94 to 3.54
2703-543	Flat	21 to 32	0.83 to 1.26	Serrated, 1mm Pitch	100 x 90	3.94 to 3.54
2703-544	Flat	31 to 42	1.22 to 1.65	Serrated, 1mm Pitch	100 x 90	3.94 to 3.54
2703-545	Vee	5 to 10	0.2 to 0.39	V - Serrated	90	3.54
2703-546	Vee	10 to 16	0.39 to 0.63	V - Serrated	90	3.54
2703-547	Vee	16 to 22	0.63 to 0.87	V - Serrated	90	3.54
2703-548	Vee	22 to 28	0.87 to 1.1	V - Serrated	90	3.54
2703-549	Vee	28 to 34	1.1 to 1.34	V - Serrated	90	3.54
2703-572	Flat	1.0 to 12.0	0.04 to 0.47	Carbide Coated	100 x 90	3.94 to 3.54
2703-573	Flat	11 to 22	0.43 to 0.87	Carbide Coated	100 x 90	3.94 to 3.54
2703-574	Flat	21 to 32	0.83 to 1.26	Carbide Coated	100 x 90	3.94 to 3.54
2703-575	Flat	31 to 42	1.22 to 1.65	Carbide Coated	100 x 90	3.94 to 3.54

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