

Instron® 2716-028/030 Series Precision Manual Wedge Grips provide reliable gripping for a vast range of materials, as well as repeatable alignment that meets Nadcap requirements<sup>1</sup>.

## Features

- 100 and 250 kN (22,000 and 56,000 lbf) capacities
- Grip operation via a safe and easy-to-use ratchet handle
- Moving body design provides accurate and repeatable specimen alignment capable of meeting the alignment requirements of Nadcap AC7122-1 and AC7101<sup>1</sup>
- Jaw faces can be quickly changed without the use of tools
- Wide temperature range of -80 to +250 °C (-112 to +482 °F) without changing parts or lubricants
- Adjustable specimen stop ensures repeatable specimen alignment
- Excellent, repeatable gripping performance is assured by the robust, self-centering mechanism
- Enclosed design resists dirt and debris
- Variety of jaw face sizes and surfaces
- “Piggy back” adaptors allow test fixtures to be installed without the need to remove the grips from the machine

## Principle of Operation

Manual, moving body, wedge action self-centering grips offer an effective gripping solution for demanding tensile tests on composites, metals, and other rigid materials. The initial gripping force is applied manually and then, as the test proceeds, the wedge action allows the gripping force to increase in proportion to the applied load.

A worm gear drive in the moving grip body drives the grip body that closes the jaw faces together symmetrically, in a self-centering action, to clamp the specimen. This ensures accurate and repeatable specimen alignment, satisfying Nadcap AC7122-1 and AC7101<sup>1</sup>.

The quick and easy operation of the grips improves productivity and usability compared to other gripping techniques.

### Notes:

1. New 598X systems with factory fitted grips meet the alignment specifications in the current Nadcap checklists. Achievement of Nadcap alignment specifications is critically dependent on the total testing system configuration and cannot be guaranteed, solely, by using 2716-028/-030 grips. If you require Nadcap certification then this must be discussed directly with Instron to ensure the suitability of your testing system



The jaw faces can be changed in seconds without the use of special tools.

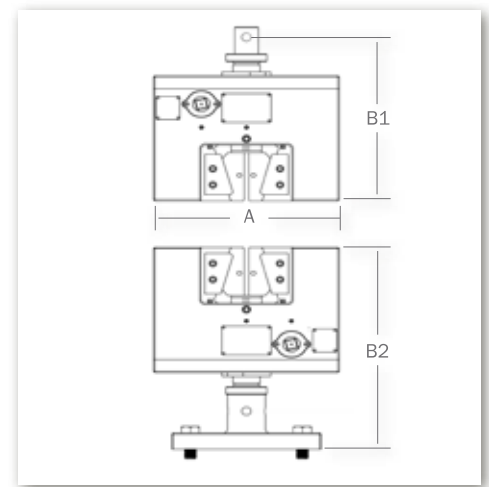
Using “piggy back” adaptors, fixtures for different test types (e.g. compression and flex) can be attached to the grips while the grips are left on the system.

## Application Range

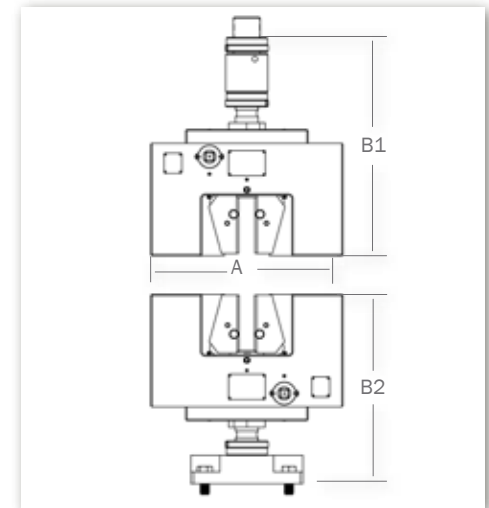
- Static tensile tests on a variety of materials including composites, metals, and plastics over a range of temperatures
- Type of loading: Tensile, static, and tension-tension cyclic tests; not suitable for high-cycle dynamic fatigue tests
- Specimen shapes: Flat and round
- Compatible with a range of composite test fixtures

## Specifications

		2716-028	2716-030
Maximum Force Capacity	kN	100	250
	lbf	22,000	56,000
Maximum Specimen Thickness <sup>1</sup>	mm	25	30
	in	0.98	1.18
Maximum Specimen Diameter <sup>1</sup>	mm	15	34
	in	0.59	1.34
Upper Fitting		0.5 in Clevis (Type Dm)	M48 LH Male (Type 2)
Lower Fitting		4 off M16	4 off M16
Overall Width ( A )	mm	249	343
	in	9.80	13.50
Effective Length Upper ( B1 )	mm	255	389
	in	10.0	15.3
Effective Length Lower ( B2 )	mm	314	341
	in	12.36	13.4
Single Grip Weight (Less Faces)	kg	47	102
	lb	104	225
Temperature Range	°C	-80 to +250	-80 to +250
	°F	-112 to +482	-112 to +482



2716-028 Grip Dimensions



2716-030 Grip Dimensions

### Notes:

1. Maximum specimen thickness depends on jaw face selection. See Jaw Faces table on page 4.



Alignment Meets Nadcap AC7101 and AC7122 Specifications



Grip Operation via a Safe and Easy-to-Use Ratchet Handle



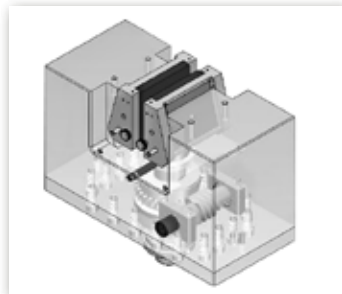
Open Front/Back Allows for Easy Specimen Loading



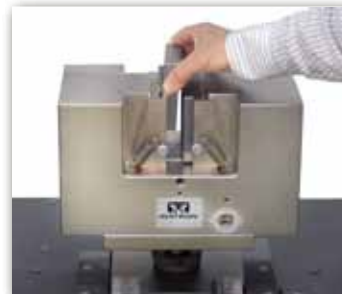
Specimen Centering Stops



"Piggy Back" Adaptors Allow Fixtures to be Installed without the Need to Remove the Grips from the Machine



Enclosed Mechanism Resists Dirt and Debris



Jaw Face Changes Require no Tools or Pins



Compatible with a Wide Range of Testing Accessories

# Optional Accessories for Improved Productivity, Ease of Use, and Repeatability

## Specimen Centering Stops

Fitted to both the upper and lower grip, the optional specimen alignment device ensures that the specimen is positioned correctly for every test.

## Pull Rods

Pull rods allow the grips to be used inside a temperature chamber.

NOTE: An AlignPRO fixture is needed to meet Nadcap AC7101 and AC7102 alignment specifications when using the grips with extenders.

## “Piggy Back” Compression Platens and Adaptors

Compression platens and adaptors allow the testing machine to be configured for compression and other testing without having to remove the grips.

## Optional Items for use with 2716-028

2701-231	Specimen Centering Stops
2501-700	Type D Adaptor Plate for “Piggy Back” Fixtures
2501-704	Fixed Compression Platen for Lower Grip with LVDT Mountings
2501-705	Compression Platen with Lockable Spherical Seat and LVDT Mountings

## Optional Items for use with 2716-030

2701-230	Specimen Centering Stops
2501-700	Type D Adaptor Plate for “Piggy Back” Fixtures
2501-702	Type 2 (M48) Adaptor Plate for “Piggy Back” Fixtures
2501-704	Fixed Compression Platen for Lower Grip with LVDT Mountings
2501-705	Compression Platen with Lockable Spherical Seat and LVDT Mountings
3119-317	250 kN Pull Rods for use with CP110128 Chamber and Extra-Height (E2) 598X Load Frame



Low-Force Load Cell Located in 2501-700 Adaptor



Compression After Impact Fixture Located Between 2501-704 and 2501-705 Compression Platens



Compression Platens - 2501-704 with Spherical Seat and 2501-704 Fixed



Adaptors 2501-700 Type D Adaptor and 2501-702 Type 2 (M48) Adaptor

## Jaw Faces for 2716-028 100 kN Grips

	Type	Surface	W × H		Specimen Thickness/Diameter Range	
			mm	in	mm	in
2703-363	Flat	Diamond Serrated 25 TPI	60 × 75	2.36 × 2.95	0-10	0-0.39
2703-364	Flat	Diamond Serrated 25 TPI	60 × 75	2.36 × 2.95	5-15	0.20-0.59
2703-365	Flat	Diamond Serrated 25 TPI	60 × 75	2.36 × 2.95	15-25	0.59-0.98
2703-366	Flat	Carbide Coated	60 × 75	2.36 × 2.95	0-10	0-0.39
2703-367	Flat	Carbide Coated	60 × 75	2.36 × 2.95	5-15	0.20-0.59
2703-368	Flat	Carbide Coated	60 × 75	2.36 × 2.95	15-25	0.59-0.98
2703-369	Vee (for Round)	V-Serrated 25 TPI	60 × 75	2.36 × 2.95	3-8	0.12-0.31
2703-370	Vee (for Round)	V-Serrated 25 TPI	60 × 75	2.36 × 2.95	8-15	0.31-0.59

Notes:

1. Catalog number provides four faces

## Jaw Faces for 2716-030 250 kN Grips

	Type	Surface	W × H		Thickness	
			mm	in	mm	in
2703-340	Flat	Diamond Serrated 25 TPI	100 × 100	3.94 × 3.94	0-10	0-0.39
2703-341	Flat	Diamond Serrated 25 TPI	100 × 100	3.94 × 3.94	10-20	0.39-0.79
2703-342	Flat	Diamond Serrated 25 TPI	100 × 100	3.94 × 3.94	20-30	0.79-1.18
2703-343	Flat	Carbide Coated	100 × 100	3.94 × 3.94	0-10	0-0.39
2703-344	Flat	Carbide Coated	100 × 100	3.94 × 3.94	10-20	0.39-0.79
2703-345	Flat	Carbide Coated	100 × 100	3.94 × 3.94	20-30	0.79-1.18
2703-346	Vee (for round)	V-Serrated	100 × 100	3.94 × 3.94	5-10	0.2-0.39
2703-347	Vee (for round)	V-Serrated	100 × 100	3.94 × 3.94	10-16	0.39-0.62
2703-348	Vee (for round)	V-Serrated	100 × 100	3.94 × 3.94	16-22	0.62-0.87
2703-349	Vee (for round)	V-Serrated	100 × 100	3.94 × 3.94	22-28	0.87-1.10
2703-350	Vee (for round)	V-Serrated	100 × 100	3.94 × 3.94	28-34	1.1-1.34

Notes:

1. Catalog number provides four faces



Flat Faces for 2716-028 Grips



Flat Faces for 2716-030 Grips



Vee Faces for 2716-030 Grips

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