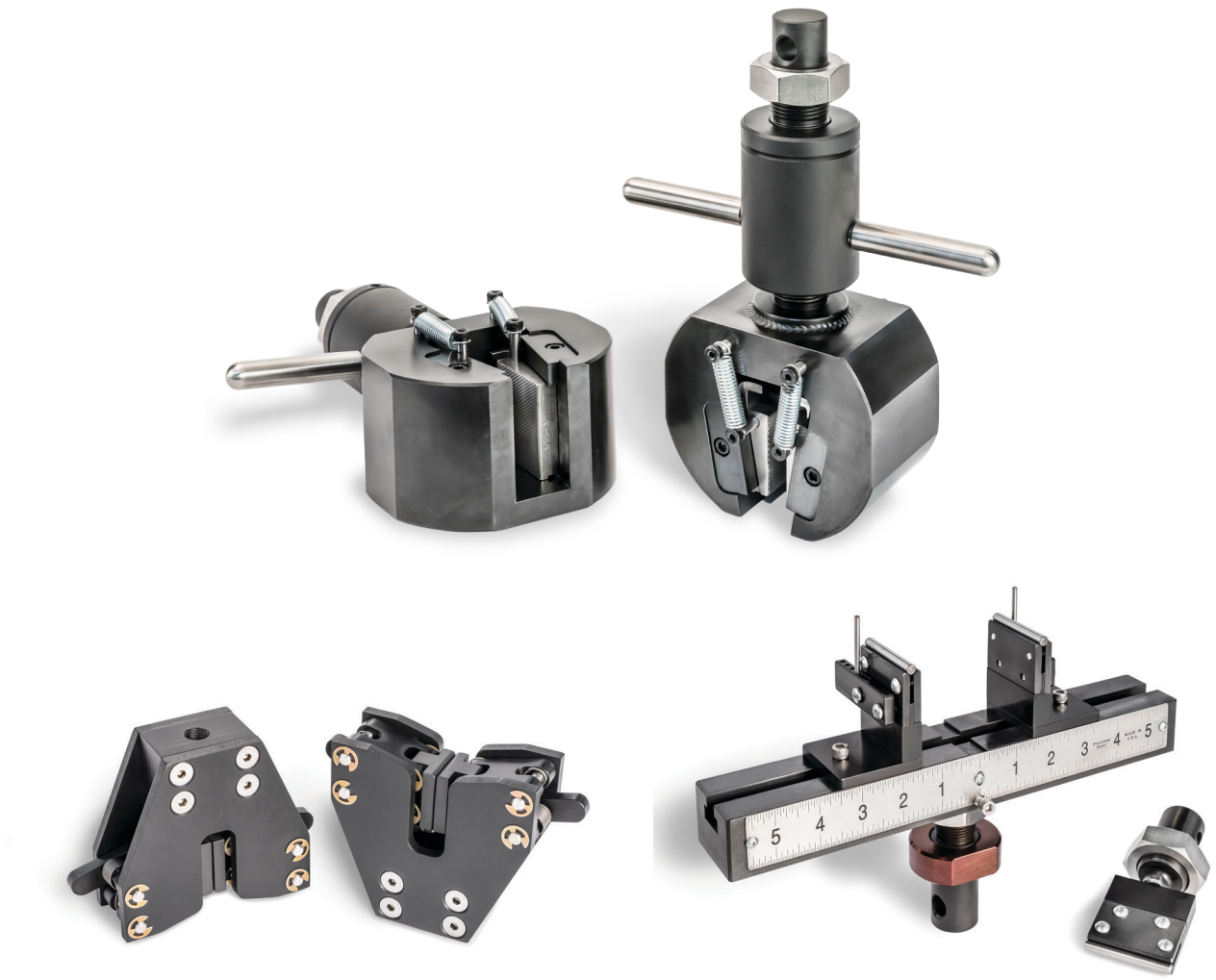
Grips & Fixtures

Standard Grips & Fixtures for Tension & Compression Applications

Custom & Specialty Grips Available Upon Request



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UNITED TESTING SYSTEMS

Grips & Fixtures

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Lever-Action Wedge Grips & Jaw Inserts

The A-series, lever-action wedge grips are ideal for tensile testing flat or round samples by incorporating interchangeable jaws and a variety of grip bodies, depending on the capacity required. Ideal for metal samples where pinching won't cause premature sample failure.

Model	Capacity (lbs)	Flat Samples	Round Samples
A-01-2.5KN	500	1/4" x 1"	1/8" to 1/4"
A-01-20KN	5,000	3/4" x 1"	1/8" to 3/4"
A20	20,000	3/4" x 1"	1/8" to 3/4"
A30	30,000	3/4" x 2"	1/8" to 3/4"
A60	60,000	3/4" x 2"	1/8" to 7/8"
A120	120,000	1-1/2''x 2-1/2''	1/8" to 2-1/4"
A-20-W*	20,000	1-1/8''x 1''	1/8" to 1"
A-30-W*	30,000	1-7/8''x 2''	3/16" to 1-3/4"

*Wide Body Grips & Inserts

Flat Jaws

Round/Vee Jaws

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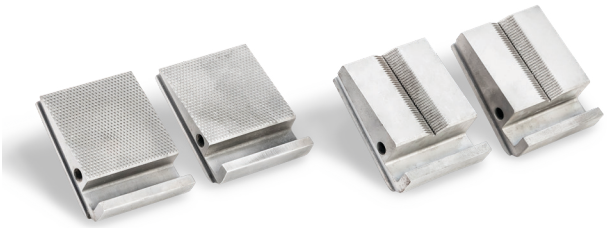
Round/Vee Jaws

Flat Jaws



Deluxe-Action Wedge Grips & Jaw Inserts

United Deluxe-Action wedge grips allow the grip jaws to move up or down by incorporating a T-handle to tighten the jaws on the sample. This allows the operator to achieve a tighter grip on samples prior to testing which is beneficial when samples have a tendency to slip out of the grip. Interchangeable jaws are incorporated into the grip body based on sample thickness or diamter when testing round samples.

Model	Capacity (lbs)	Flat Samples*	Round Samples*
DA-1	1,000	1/4″	N/A
DA-15	30,000	1″	3/8″
DA-25	30,000	2″	3/4″
DA-40	30,000	4″	N/A
DA-65	60,000	2″	1 5/8″

*Max width or diameter.

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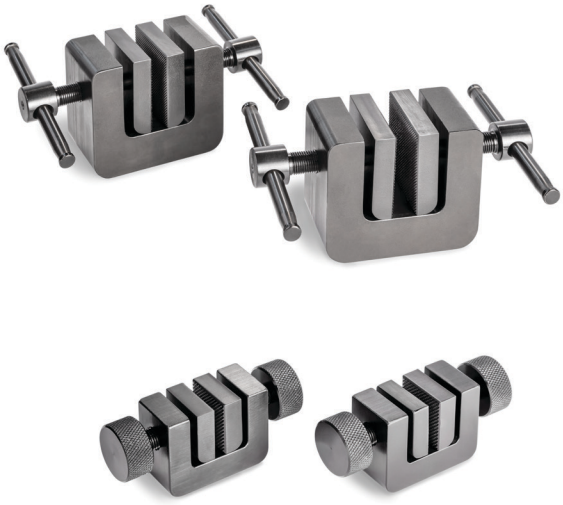

Screw-Action Grips

Screw-Action grips operate similar to a vice clamp and are designed for gripping various strip or sheet materials such as paper, foam, textiles and light metals. Moveable inserts close completely to accommodate samples from 0" to ½" thick. Also ideal for gripping lap shear specimens with offset ends. The 10-pound and 200-pound capacity grips have knurled open/close knobs while the 1000-pound capacity grip utilizes a T-handle for added closing pressure.

Model	Capacity (lbs)	Width
SG-10	50	1" x 1"
SG-20-500	500	1-1/2" x 2"
SG-10-10KN	2,000	2" x 2"

Parallel Dogbone Grips

The Parallel Dogbone grips are ideal for testing rubber, plastic, thin metal, and related material where the peak force will not exceed 2 kN. These grips are ideal for the ASTM D412 standard. Jaws are opened using the spring-action lever on the side making loading samples quick and easy.

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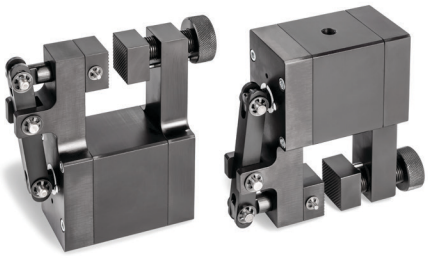
Custom & Specialty Grips Available Upon Request

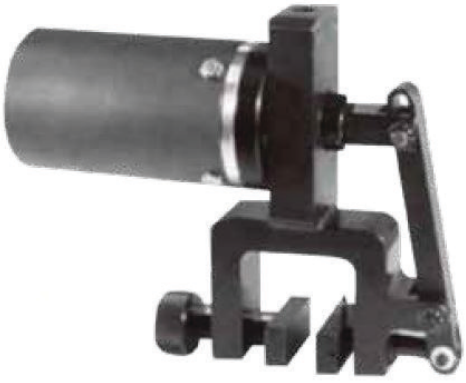
Pneumatic Grips

United offers a wide selection of Pneumatic Grips with a variety of jaw inserts incorporating many different jaw sizes. Pneumatic Grips require an air supply, or a separate air compressor can be purchased from United.

Pneumatic grips are opened and closed either by a toggle switch on the grip body, or by a foot lever located on the floor below the test frame. Grip capacitues range from 1 Lbf. up to 1,000 Lbf.



Foot Switch



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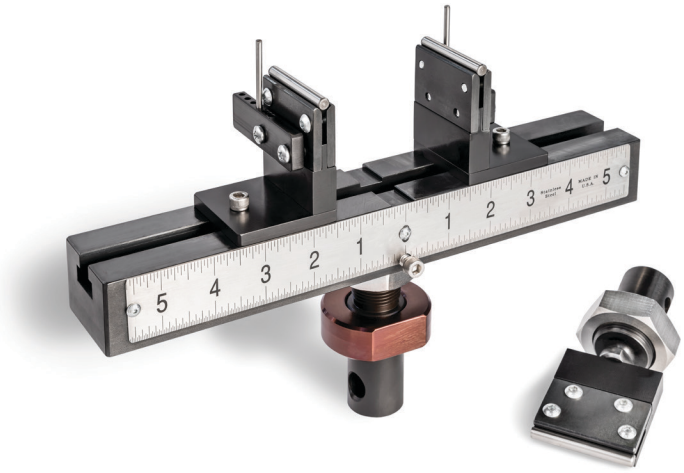


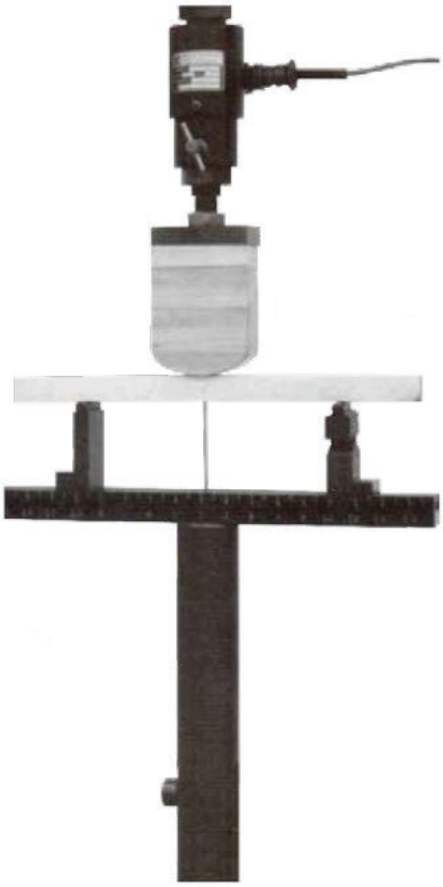
Bend/Flex Fixtures

United offers a wide selection of bend and flex fixtures for many different applications across a wide variety of industries and test procedures. Common fixtures are generally 3-point or 4-point, but others are available.

Bend fixtures vary considerably depending on the sample being tested, the forces required and the calculations being determined.

Common parameters used to determine the appropriate fixture are listed below. When sourcing bend/flex fixtures please provde as much of the following information as possible.

- **Loading Points** - (3-point/4-point)
- **Reference Standard**- ASTM, ISO, etc.
- **Loading Capacity** - Min & Max
- **Type of loading** - Static flex, cyclic flex
- **Specimen Material** - Metal, Plastic,
- Composite, Concrete, Wood, etc.
- **Specimen Shape** - Strip, Round Bar, Custom
- **Span Length** - Min & Max
- **Anvil Height** - Min & Max
- **Upper & Lower Roller Diameter** - Min & Max
- **T-Slot Base Requirement -** Yes/No?
- **Deflection Coil Requirement -** Yes/No?
- **Deflection Coil Height** - 1", 2" or other height?



Grips & Fixtures

Standard Grips & Fixtures for Tension & Compression Applications

Custom & Specialty Grips Available Upon Request

Shoulder Specimen Grips

United manufactures a large selection of Shoulder Specimen Grips. These grips are constructed of high-strength alloy steel and finished in black oxide to ensure years of trouble-free use. Shoulder Specimen grips are ideal for meeting alignemnt standards as specified in ASTM E1012 and Nadcap AC710. Other common standards where they are required are ASTM E8, ASTM A370, ASTM A48 and GOST 1497 (Type III specimen).

Shoulder specimen grip inserts are custom machined based on the sample being tested, so detailed dimensions will need to be provided when ordering grips. Common sizes are listed below.

Model	Capacity (lbs)	Sample Diameter
SG-330-UC1	20,000	0.250″
SG-330-UC2	30,000	0.357″
SG-330-UC3	60,000	0.505″

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Compression Plates

Compression plates are available in a variety of diameters and thicknesses, depending on capacity requirements and test procedures. Compression plates can be designed to virtually any diameter based on the application and are generally sold in matching pairs. Standard compression plate sizes are listed below.

Diameter	Thickness	Max Capacity
2.5″	3/4″	5,000 Lbf
	1.5″	30,000 Lbf
	2″	60,000 Lbf
4″	3/4″	5,000 Lbf
	1.5″	30,000 Lbf
	2″	60,000 Lbf
6″	3/4″	5,000 Lbf
	1.5″	30,000 Lbf
	2″	60,000 Lbf
8″	3/4″	5,000 Lbf
	1.5″	30,000 Lbf
	2″	60,000 Lbf
12″	3/4″	5,000 Lbf
	1.5″	30,000 Lbf
	2″	60,000 Lbf

Square Compression Plates

United offers a wide selection of square and rectangular compression plates for a variety of applications. Similar to round p;lates, square plates are made based on specific specifications provided by the customer.

Grips & Fixtures

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Climbing Drum Peel Fixture

United's climbing drum peel fixture is specifically designed for testing to ASTM D-1781 - Standard Test Method for Climbing Drum Peel for Adhesives This lightweight fixture has a capacity of up to 250 pounds.

Wire, Cord, Yarn and Rope Grips

United's wire, cord, yarn and rope grips are available in assorted capacities depending on customer requirements. The capstan grips can be customized to accommodate special specimen diameters as well as a variety of flexible strapping material.

Webbing Grips

United's Webbing Grips are ideal for testing seat belts and other webbing-like materials. Available capacities include 5,000, 10,000 and 15,000 pounds. Standard widths are 1-1/2", 2-1/2" and 3-1/2". Wider grips can be manufactured upon customer request. The 5,000 and 10,000-pound grips incorporate a split drum specimen gripping design. The 15,000-pound grip utilizes an eccentric design for added gripping pressure on high strengt materials.

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Briquette Grips

Briquette grips are generally used for testing samples when performing ASTM C307 - Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacings, or related test procedures.

Welded Wire Fixture

United's Welded Wire Fixture tests in accordance with ASTM A497 - Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete. This has been replaced by ASTM A1064 - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete

Puncture Resistance Fixture

United's Puncture Resistance Fixture, shown with optional pneumatic foot switch, is ideal for testing the puncture resistance of a variety of materials including plastic film, fabric, thin rubber membranes and similar material. The fixture is pneumatically operated making sample loading quick and easy. Fixtures can be custom designed with a variety of opening diameters and probe sizes. Common test applications include ASTM D3787, ASTM D4833, ASTM F1306 and ASTM D5748

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