

306 Biaxial Series Load Frames

Designed to perform static and dynamic bi-axial materials testing, applications include tension-compression techniques as well as fatigue testing or high rate use. The load frame structure is specifically designed to provide maximum rigidity for axial/torsional applications. The Series 306 features a 2-column symmetrical construction with a fixed-platen and moveable crosshead. Typical applications include

- **Cyclic material testing**
- **Application of precision force and torque**
- **Fatigue testing**

These freestanding, fatigue rated load frames come standard in four force-torque configurations; 10/5,000, 20/10,000, 50/20,000, and 100/50,000 Kip/lbf-in (22.2/565, 44.5/1,130, 88.9/2,260 and 222.4/5,649 kN/N-m) with other force/torque combinations available on special order. All units are delivered fully equipped including linear and rotary actuators, servo valves, service manifold and transducers. Both actuators are mounted below the platen with the load cell affixed to the crosshead. The 306 Series Load Frame will accept a variety of load cells and grips and is easily adaptable to standard ASTM and special testing configurations.

Features

Smooth, chrome plated columns

The 306 utilizes two smooth, chrome plated columns to provide long life and easy crosshead position changes.

Infinitely adjustable crosshead

The crosshead is vertically adjustable with infinite resolution. Position of the crosshead is maintained backlash free by torque wrench tightened bolts or hydraulic fail-safe locks.

Hydraulic crosshead controls

Hydraulic crosshead positioning with bolted friction clamps is standard on all models. A panel controls crosshead movement, using simple controls you unlock, raise or lower and lock the crosshead. The design ensures a sudden loss of hydraulic power will not result in any unwanted crosshead motion.

Extremely accurate alignment

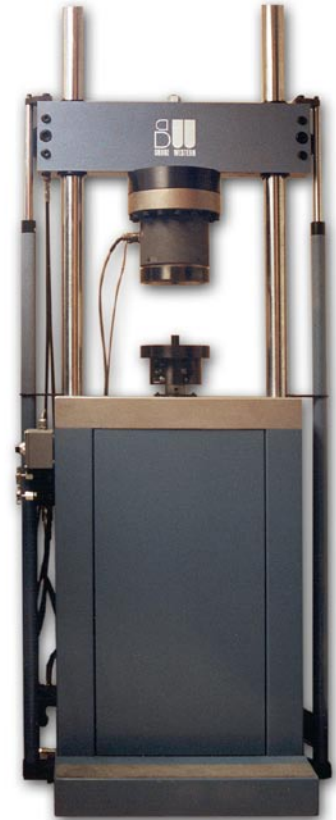
The actuator rod and load cell are concentric within .0015 inch @ 15 inches and .002in/ft thereafter.

Displacement transducers

The actuator has a co-axially mounted LVDT in the piston rod. The rotary actuator has an external RVDT protected by the enclosed metal cabinet. This design protects both sensors and insures accurate displacement signals for the control system.

Extremely rigid construction

No intermediate threaded joints or compression joints are utilized and the load is transmitted directly into the crosshead during testing.



Model 306 Load Frame

Simplified maintenance

The entire load train is enclosed in the base assembly and is arranged for easy access to simplify maintenance.

Options

Hydraulic crosshead locks

Hydraulically operated crosshead locks are available on all models.

Vibration isolation mounts

Vibration or dynamic testing can produce unwanted noise and vibration that can be transmitted to the laboratory floor. Isolation pads under the load frame help reduce noise and dampen vibrations.

Safety enclosure

A safety enclosure can be fitted around the test area to protect the operator during destruction testing.

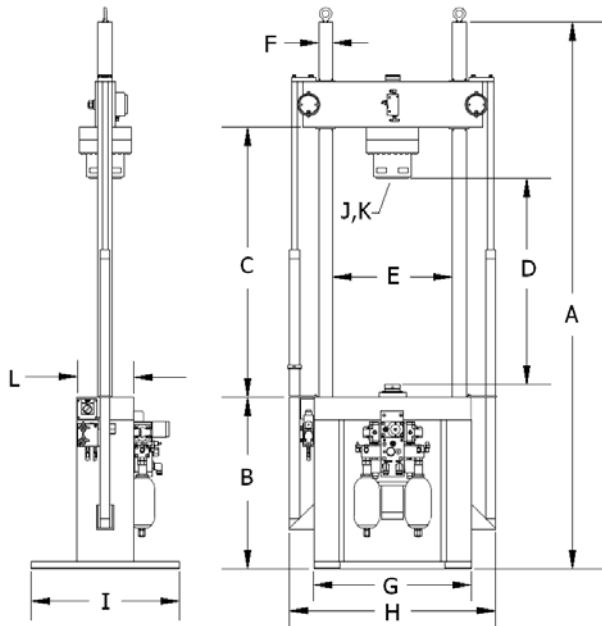
Actuator options

Different actuator displacements and valves are available, as well as custom force ratings. Service Manifolds, servo-valves and hydraulic power supplies are sized and selected based on application.

Accessories

Choose from a wide variety of grips, fixtures, extensometers, larger power supplies and various load cell force ratings.

DIMENSIONS/WEIGHT	REF.	MODEL 306.2		MODEL 306.3		MODEL 306.4	
Column Diameter	F	2.5 in	6.3 cm	3.0 in	7.6 cm	4.0 in	10.2 cm
Column Spacing	E	21.0 in	53.3 cm	25.0 in	63.5 cm	30.0 in	76.2 cm
Height (overall)	A	112.0 in	284.5 cm	135.0 in	342.9 cm	163.0 in	414.0 cm
Max Clearance	C	54.0 in	137.2 cm	73.0 in	185.4 cm	91.0 in	231.1 cm
Specimen Length *	D	41.0 in	104.1 cm	57.0 in	144.8 cm	71.0 in	180.3 cm
Platen Height	B	48.0 in	121.9 cm	50.0 in	127.0 cm	56.0 in	142.2 cm
Platen Depth	L	10.0 in	25.4 cm	12.0 in	30.5 cm	15.0 in	38.1 cm
Base Width	G	28.0 in	71.1 cm	34.0 in	86.4 cm	41.0 in	104.1 cm
Width (with lifts) **	H	36.0 in	91.4 cm	42.0 in	106.7 cm	49.0 in	124.5 cm
Base Depth	I	24.0 in	61.0 cm	30.0 in	76.2 cm	36.0 in	91.4 cm
Bolt Circle Diameter	K	8.0 in	20.3 cm	10.0 in	25.4 cm	13.0 in	33.0 cm
Bolt Holes (6 each)	J	1/2-13 UNC		5/8-11 UNC		3/4-10 UNC	
Deflection (max. cum.)		0.015 in	0.038 cm	0.021 in	0.053 cm	0.026 in	0.066 cm
Stiffness							
(lbf-in)		1.5 x 10 ⁶		2.6 x 10 ⁶		4.2 x 10 ⁶	
(N-m)		2.6 x 10 ⁸		4.6 x 10 ⁸		7.4 x 10 ⁸	
Axial Force		20 Kip**	100 kN	50 Kip	250 kN	100 Kip	500 kN
Torsional Force							
(lbf-in)		10,000		20,000		50,000	
(N-m)		1150		2250		5650	
Rotation (degrees)		+/- 50		+/- 50		+/- 50	
Approximate Weight		1250 lb	570 Kg	2250 lb	1000 Kg	4200 lb	1900 Kg



*Specimen length based on standard load cell, 6-inch stroke actuator (fully retracted), less grip dimensions.

**Model 306.2 also available with 10 kip (axial)/5,000 lbf-in. (torsional) actuators as standard.

The actuator rod and load cell are concentric within 0.0015 inches @ 15 inches of separation (0.002 in/ft thereafter).

Note: Service manifolds, servo valves and hydraulic power supplies are sized and selected based upon application.

Represented by:



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