

## 304 Series Load Frames

Designed specifically to provide tension-compression testing techniques as well as fatigue testing or high rate uses. The 304 Series Load Frames offer a 4-column symmetrical construction with a fixed-platen and moveable crosshead. Typical applications include

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

These freestanding, fatigue rated load frames come standard with 6 inch (150 mm) stroke lengths and force ratings from 110 Kip (489 kN) through 550 Kip (2,447 kN) with larger units designed and built to meet specific applications. Units feature durable metal base cabinetry and require no tie downs. Advanced design, quality components, and a variety of options makes the 304 Series Load Frame your best choice for your material testing applications.

### Features

#### Smooth, chrome plated columns

The 304 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. The position of the crosshead is maintained free of backlash by friction clamp locks.

#### Hydraulic crosshead controls

Hydraulic crosshead positioning 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

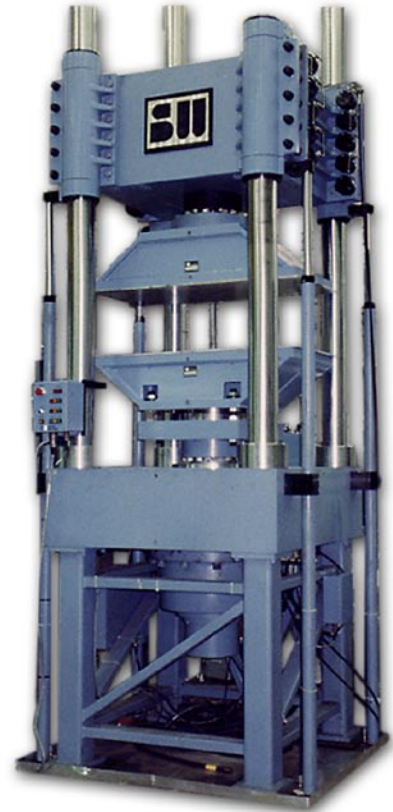
The actuator rod and load cell are concentric within .0015 inch @ 15 inches and .002in/ft thereafter.

#### Internal displacement transducer

The actuator has a co-axially mounted LVDT in the piston rod. The design protects the LVDT 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 304 Load Frame

### 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 unit 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.

#### Crosshead mount actuator

A crosshead mount actuator is available as an option on all models.

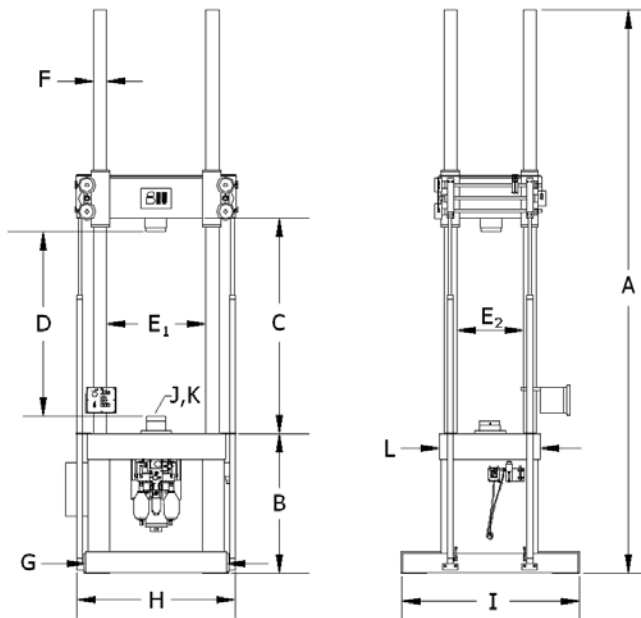
#### Actuator options

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 304.2		MODEL 304.3		MODEL 304.4	
Column Diameter	F	3.0 in	7.6 cm	4.0 in	10.2 cm	6.0 in	15.2 cm
Column Spacing	E1	24.0 in	60.7 cm	28.0 in	71.1 cm	30.0 in	76.2 cm
Column Spacing	E2	12.0 in	30.5 cm	16.0 in	40.6 cm	20.0 in	50.8 cm
Height (overall)	A	127.0 in	322.6 cm	151.0 in	383.5 cm	172.0 in	436.9 cm
Max Clearance	C	74.0 in	188.0 cm	93.0 in	236.2 cm	96.0 in	243.8 cm
Specimen Length*	D	65.0 in	165.1 cm	81.0 in	205.7 cm	82.0 in	208.3 cm
Platen Height	B	43.0 in	109.2 cm	45.0 in	114.3 cm	50.0 in	127.0 cm
Platen Depth	L	20.5 in	52.1 cm	26.5 in	67.3 cm	35.5 in	90.2 cm
Base Width	G	34.0 in	86.4 cm	40.0 in	101.6 cm	46.0 in	116.8 cm
Width (with lifts)	H	42.0 in	106.7 cm	48.0 in	121.9 cm	60.0 in	152.4 cm
Base Depth	I	37.0 in	94.0 cm	48.0 in	121.9 cm	60.0 in	152.4 cm
Bolt Circle Diameter	K	14.0 in	35.6 cm	20.0 in	50.8 cm	26.0 in	66.0 cm
Bolt Holes (8 each)	J	3/4-10 UNC		1-8 UNC		1 1/2-6 UNC	
Deflection (max. cum.)		0.018 in	0.046 cm	0.018 in	0.045 cm	0.024 in	0.060 cm
Stiffness							
(lbf-in)		6.0 x 10 <sup>6</sup>		12.0 x 10 <sup>6</sup>		23.0 x 10 <sup>6</sup>	
(N-m)		1.0 x 10 <sup>9</sup>		2.1 x 10 <sup>9</sup>		4.0 x 10 <sup>9</sup>	
Force		110 kip	500 kN	220 kip	1000 kN	550 kip	2500 kN
Approximate Weight		4500 lb	2050 kg	8000 lb	3650 kg	19000 lb	8600 kg



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

The actuator rod and load cell are concentric within 0.0015 in @ 15 inches of separation (0.005 in/ft thereafter).

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

Represented by:



Shore Western Manufacturing, Inc.  
 225 W. Duarte Rd., Monrovia, CA 91016  
 Phone (626) 357-3251 / FAX (626) 303-1582  
 email sales@shorewestern.com  
 www.shorewestern.com