

S-610 Load Frame

for CBR, LBR, UCC Testing

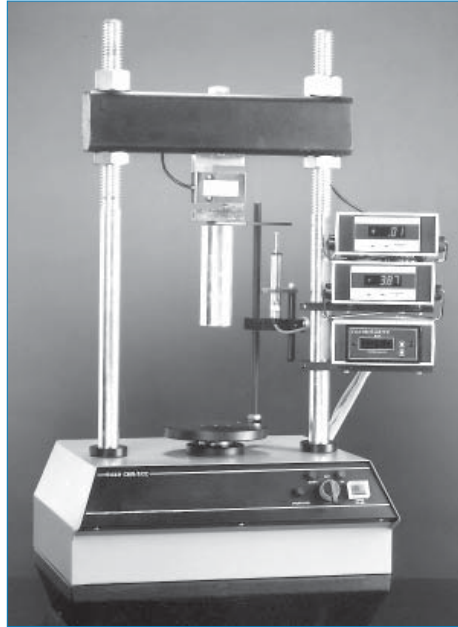
ASTM* D 1883, D 2166

AASHTO* T 193, T 208

* See Standards Buyer's Guide at www.DGSI.info/3000.

Time-proven, reliable mechanical load frame. Operator convenience includes the capability to control the speed by simply pushing touch pads and viewing direct readings in in/min on a digital device.

Dimensions, (WxDxH): 9 x 16 x 36 in (229 x 406 x 914 mm).



S-610, with optional accessories. CBR Set Up.

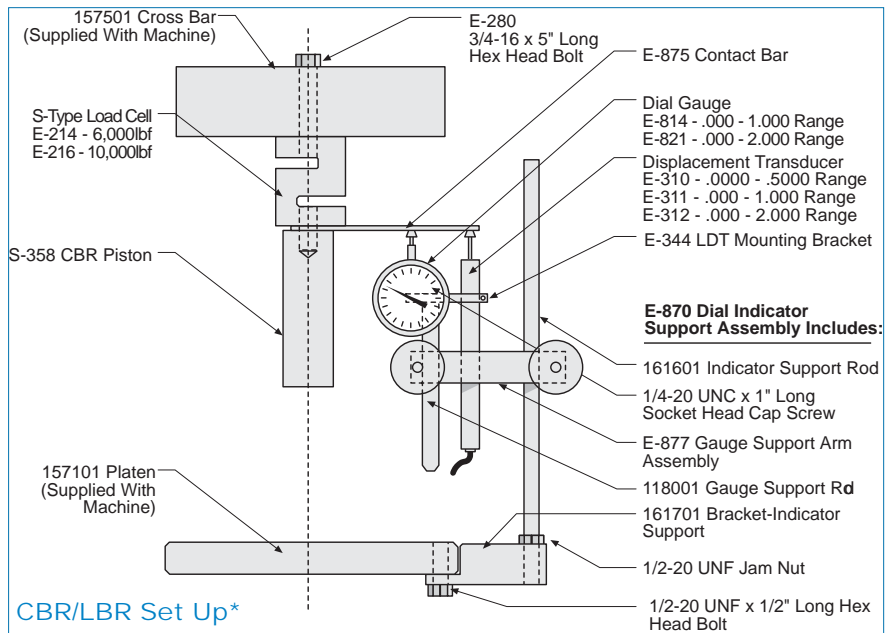
An automated version of this load frame is available (see Model S-611).

Grout Test Accessories

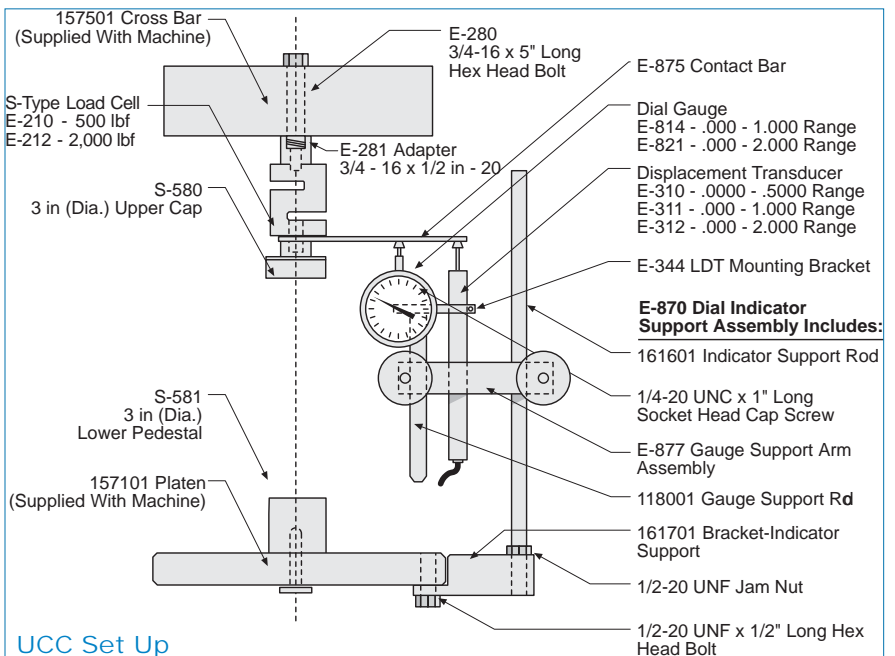
The S-610 Load Frame may be used to test grout or concrete specimens (3 x 6 in cylinders, 4 x 8 in cylinders, 3 x 3 x 6 in prisms) to a **maximum load of 10,000 lbf**. For this, in addition to the S-610 Load Frame, you will need the accessory kit (S-61060) which consists of a spherical seat and lower platen (C-290). An S-Type load cell with a capacity of either 6,000 lbf (E-214) or 10,000 lbf (E-216) will be needed (sold separately). See S-Type load cells on page 48.

S-61060	Soil Cement Spherical Seat, 4 in
Accessories:	
C-290	Platen
E-214	S-Type Load Cell, 6000 lbf
or	
E-216	S-Type Load Cell, 10,000 lbf

Specifications for S-610 Load Frame	
Load Capacity	10,000 lbf (44.5 kN)
Speed Range for Platen Movement	From 0.005 to 0.2 in/min. (0.127 to 5.08 mm/min) in 0.001 in/min (0.0284 mm/min) steps.
Platen	6.25 in (159 mm) diameter
Piston	2 in (50 mm) diameter
Piston Travel	3 in (76 mm) maximum
Speed Control	Microprocessor based electronic controller
Column Distance	11.75 in (298 mm)
Max. Daylight	19 in (483 mm) without load measuring device
Strain Rods	1.5 in (38 mm) dia., Acme thread for adjustment
Cross Beam	Adjustable, w/ center hole 0.75 in (19 mm)



* For LBR, use E-217 cylindrical load cell instead of E-214, or E-216 S-type load cell.



S-610	Load Frame, 110 V, 60 Hz				160 lb
S-61010	Load Frame, 220/240 V, 50/60 Hz (Can be used for triaxial testing if speed meets ASTM specifications)				160 lb
S-6100E	Load Frame w/ Extended Strain Rods for Triaxial Shear Testing, 110 V, 60 Hz (Can be used for triaxial testing if speed meets ASTM specifications)				180 lb
S-611CONV	S-610 to S-611 Load Frame Conversion Kit				
S-61050	Extended Strain Rod Set, 35 in clearance				
Grout and Cement Test Accessories					
S-61060	Soil and Cement Spherical Seat, 4 in				
C-290	1 in Lower Platen				
E-214	S-Type Load Cell, 6,000 lbf				
E-216	S-Type Load Cell, 10,000 lbf				
Unconfined Compression Accessories					
S-61030	UCC Mechanical Accessory Set				16 lb
S-61031	UCC Dial Indicator / Load Cell Accessory Set				18 lb
S-61035	UCC Electronic Accessory Set				25 lb
S-61036	UCC Electronic Accessory Set, includes Plotter Playback Software				42 lb
CBR Accessories			ASTM D 1883		
S-61020	CBR Mechanical Accessory Set				22 lb
S-61021	CBR Dial Indicator / Load Cell Accessory Set				26 lb
S-61025	CBR Electronic Accessory Set				31 lb
S-61026	CBR Electronic Accessory Set w/ Plotter Playback Software				52 lb
Contents of UCC Accessory Sets		S-61030	S-61031	S-61035	S-61036
S-580	Upper Platen, 3-in diameter	1	1	1	1
S-581	Lower Platen, 3-in diameter	1	1	1	1
E-875	Contact Bar, fits above upper platen	1	1	1	1
E-281	Threaded adapter for PR/LC	1	1	1	1
E-870	Displacement Support Assembly	1	1	1	1
E-710	Proving Ring, 500 lb	1	-	-	-
E-814	Dial Indicator, 1 in x 0.001 in	1	1	-	-
E-210	S-Type Load Cell, 500 lb	-	1	1	1
E-311	Linear Displacement Transducer, 1-in x 0.001 in	-	-	1	1
E-344	LDT Mounting Adapter	-	-	1	1
E-405	Digital Transducer Readout	-	1	2	2
E-45010	Mounting Bracket for E-405	-	1	1	2
E-40501	Analog Board	-	-	-	2
603169	Plotter Playback Software	-	-	-	1
Contents of CBR Accessory Sets		S-61020	S-61021	S-61025	S-61026
S-358	CBR Piston	1	1	1	1
E-875	Contact Bar, fits above CBR Piston	1	1	1	1
E-870	Displacement Support Assembly	1	1	1	1
E-714	Proving Ring, 5,000 lb	1	-	-	-
E-814	Dial Indicator, 1 in x 0.001 in	1	1	-	-
E-214	S-Type Load Cell, 5,000 lb	-	1	1	1
E-311	Linear Displacement Transducer, 1-in x 0.001 in	-	-	1	1
E-344	LDT Mounting Adapter	-	-	1	1
E-405	Digital Transducer Readout	-	1	2	2
E-40501	Analog Board	-	-	-	2
E-45010	Mounting Bracket for E-405	-	1	1	2
603169	Plotter Playback Software	-	-	-	1

S-611 Auto Load Frame

For CBR,
LBR,
UCC and
Triaxial
Testing

ASTM
D 1883, D 2166

AASHTO
T 193, T 208

S-611, shown
with optional
accessories



The S-611 Auto Load Frame is based on our time proven S-610 Load Frame (see p.30). When connected to a PC, the S-611 Auto Load Frame offers the ability to perform LBR, CBR and UCC tests with a minimum of operator involvement. Once the test is started, the operator may leave the test area. The computer controls the S-611, records load and deflection readings, shows the test in progress on an on-screen graph, automatically stops the test and returns the platen to the start position for the next test. Separate reporting software calculates results and provides final reports that can be printed.

The front-panel mounted selector switch allows the user to choose the mode of operation between “manual” and “auto”. In manual mode, the S-611 load frame operates the same as the S-610.

Compared to the S-610, the S-611 offers three major additions:

- The platen will automatically retract to the lower home position when a preset load and/or displacement condition is satisfied. The platen will retract when a pre-set maximum displacement, load, or load drop-off (indicating the test is completed) has been reached or if sample failure has been detected.
- New Smart Digital Indicators permit continuous transmission of data. Programmable features include setting end of test conditions and transmitting information to a computer using Windows®-based serial acquisition software called WinSAS™.
- CBR and LBR software retrieves the data file to produce data report sheet, complete with load-deformation plots.

S-611	Auto Load Frame, 10,000 lbf, 110 V, 60 Hz	160 lb
S-61110	Auto Load Frame, 10,000 lbf, 220 V, 60 Hz	160 lb
S-61115	Auto Load Frame, 10,000 lbf, 220-240 V, 50 Hz	180 lb
Accessories		
S-61120	Accessory Package for LBR Testing (details on next page)	
S-61130	Accessory Package for UCC Testing (details in next column)	
S-61140	Accessory Package for CBR Testing (details in next column)	
E-217	Cylindrical-Type Load Cell, 10,000 lbf (45 kN) (LBR Testing)	

Software options on page 42.

Specifications for S-611 Load Frame

Load Capacity	10,000 lbf (44.5 kN)
Speed Range for Platen Movement	From 0.005 to 0.2 in/min. (0.127 to 5.08 mm/min) in 0.001 in/min (0.0254 mm/min) steps.
Platen	6.25 in (159 mm) diameter
Piston	2 in (50 mm) diameter
Piston Travel	3 in (76 mm) maximum
Speed Control	Microprocessor based electronic controller
Column Distance	11.75 in (298 mm)
Max. Daylight	32 in (812mm) without load measuring device
Strain Rods	1.5 in (38 mm) dia. Acme thread for adjustment
Cross Beam	Adjustable, w/ center hole 0.75 in (19 mm)
Dimensions (WxDxH)	9 x 16 x 53 in (229 x 406 x 132 mm)
Ship. Wt. (w/o acc.)	200 lb (91 kg)
Ship. Vol.	4.75 ft³ (0.13 m³)

Accessory Package for **CBR Testing** (S-61140)

Model	Qty.	Description
E-216	1	S-Type load Cell, 10,000 lbf (44.5 kN)
Or E-217	1	Or Cylindrical Type Load Cell, 10,000 lbf (44.5 kN)
E-311	1	Linear Displacement Transducer, 1 x 0.001 in
E-870	1	Dial Indicator Support Assembly
E-875	1	LDT Contact Bar
E-40508	1	RS-485 to RS-232 Converter
E-40520	1	Dual Smart Digital Indicators (5-Digit)
E-40521	1	WinSAS Collecting Software
E-41525	1	CBR Reporting Software
E-45010	1	Mounting Bracket for E-40520
S-61056	1	2-in Quick Adjust CBR / LBR Piston
600336	1	Centralizing Mold Fixture, S-611
600787	1	LDT Bracket, S-611

Accessory Package for **UCC Testing** (S-61130)

Model	Qty.	Description
E-875	1	LDT Contact Bar
E-212	1	S-Type Load Cell, 2,000 lbf capacity
E-281	1	Adapter for Load Cell to Cross Bar
E-311	1	Linear Displacement Transducer, 1 x 0.001 in
E-344	1	LDT Mounting Adapter
S-580	1	Upper Platen, 3 in diameter
S-581	1	Lower Platen, 3 in diameter
E-870	1	Dial Indicator Support Assembly
E-40508	1	RS-485 to RS-232 Converter
E-40520	1	Dual Smart Digital Indicators (5-Digit)
E-40521	1	WinSAS Collecting Software
E-41524	1	UCC Reporting Software
E-45010	1	Mounting Bracket for E-40520

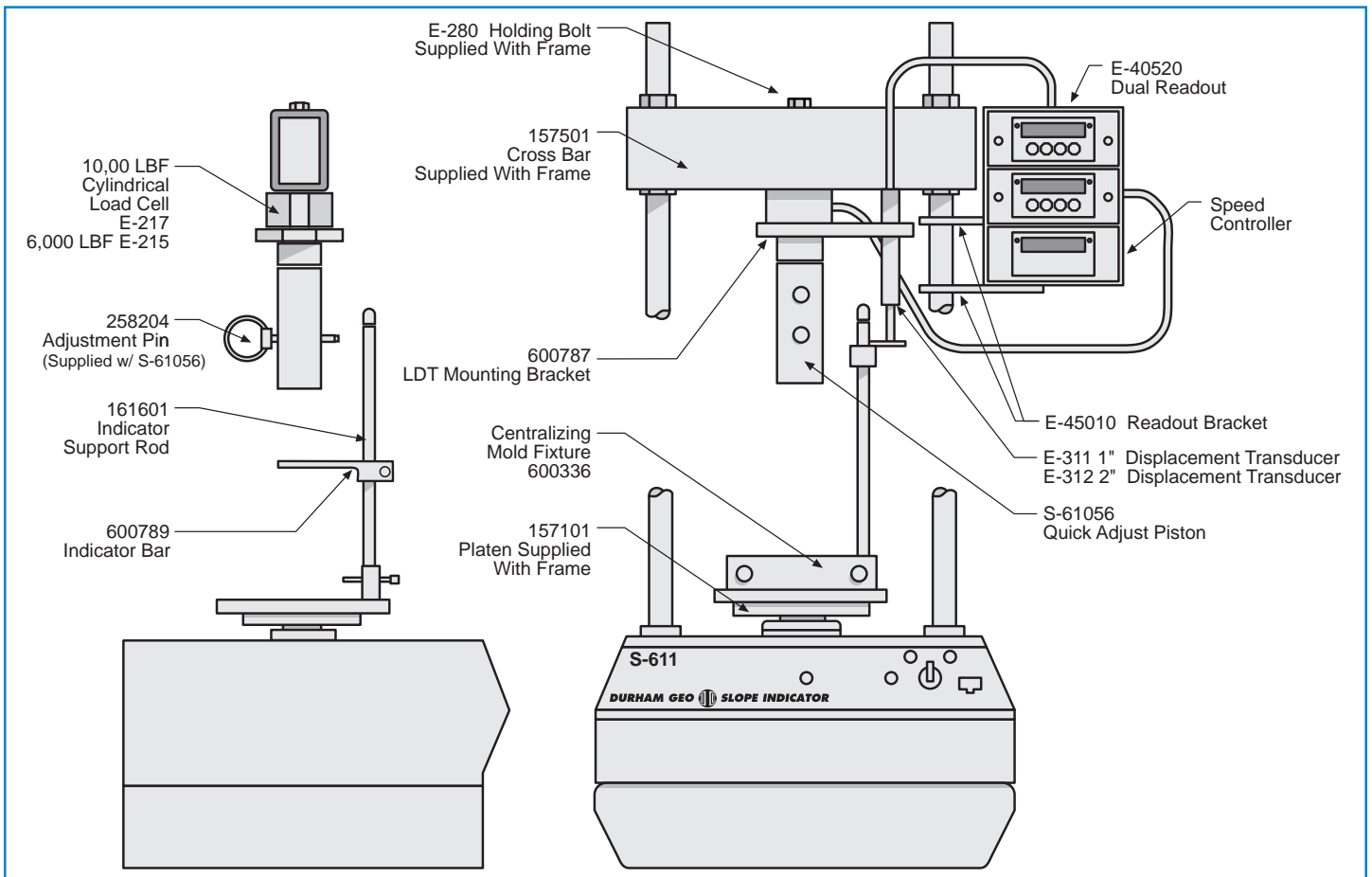
* See Standards Buyer's Guide at www.DGSI.info/3000.

Accessory Package for LBR Testing (S-61120)		
Model	Qty.	Description
E-217	1	Cylindrical Load Cell, 10,000 lbf capacity
E-311	1	Linear Displacement Transducer, 1-in range
E-40508	1	RS-485 to RS-232 Converter
E-40520	1	Dual Smart Digital Indicator (5-Digits)
E-40521	1	WinSAS Collecting Software
E-41525A	1	LBR Reporting Software
E-45010	1	Mounting Bracket for E-40520
S-61056	1	2-in Quick Adjust CBR / LBR Piston
161601	1	Indicator Assembly Support Rod
600336	1	CBR Mold Centering Jig (Factory Installed)
600787	1	LDT Bracket S-611
600789	1	Indicator Bracket

Related Items	
S-327	CBR Mold with perforated base
S-328	LBR Mold



Detail of S-611 Auto Load Frame with accessories for CBR testing. Same accessories as on the illustration below plus the compaction mold, S-327.



S-611 Auto Load Frame with optional accessories for CBR testing. Cylindrical load cell shown here as an alternative to the S-type load cell.

Software options on page 42.

S-600 Triaxial Load Frame

ASTM* D 2850, D 4767 AASHTO: T 296, T 297

* See Standards Buyer's Guide at www.DGSI.info/3000.

The electronically controlled Triaxial Load Frame has a compression capacity of 10,000 lbf (45 kN). The user friendly Interface/ Controller allows the user to set speed and distance of travel and observe actual platen position during the test. The display may be configured in the engineering units of choice and is used to simplify set-up by using screen prompts. Modular construction enhances the reliability of the system and keeps service and maintenance to a minimum. Belt driven for smoother load rates.

S-600	Triaxial Load Frame, 110 V, 60 Hz* Min. Speed: 0.0001 in/min	200 lb
S-60010	Triaxial Load Frame, 220 V, 60 Hz*	
S-6100E	S-610 Load Frame, 110 V, 60 Hz* with extended strain rods for triaxial shear testing. Min. Speed: 0.005 in/min.	200 lb

S-600 Specifications

Load Capacity:	10,000 lbf (45 kN)
Speed Range:	0.0001 to 0.2 in/min (0.0127 - 5 mm/min)
Platen:	6.25 in (159 mm) diameter
Piston:	2 in (50 mm) diameter
Piston Travel:	3 in (76 mm) maximum
Speed Control:	Microprocessor based electronic controller
Column Distance:	11.75 in (298 mm)
Daylight:	35 in (889 mm) - without load measurement device
Strain Rods:	1.25 in (32 mm) diameter, Acme threaded for adjustment
Cross Beam:	2.5 x 3.5 x 16-in steel (63 x 89 x 406 mm), adjustable, with center hole drilled 0.75 in (19 mm)

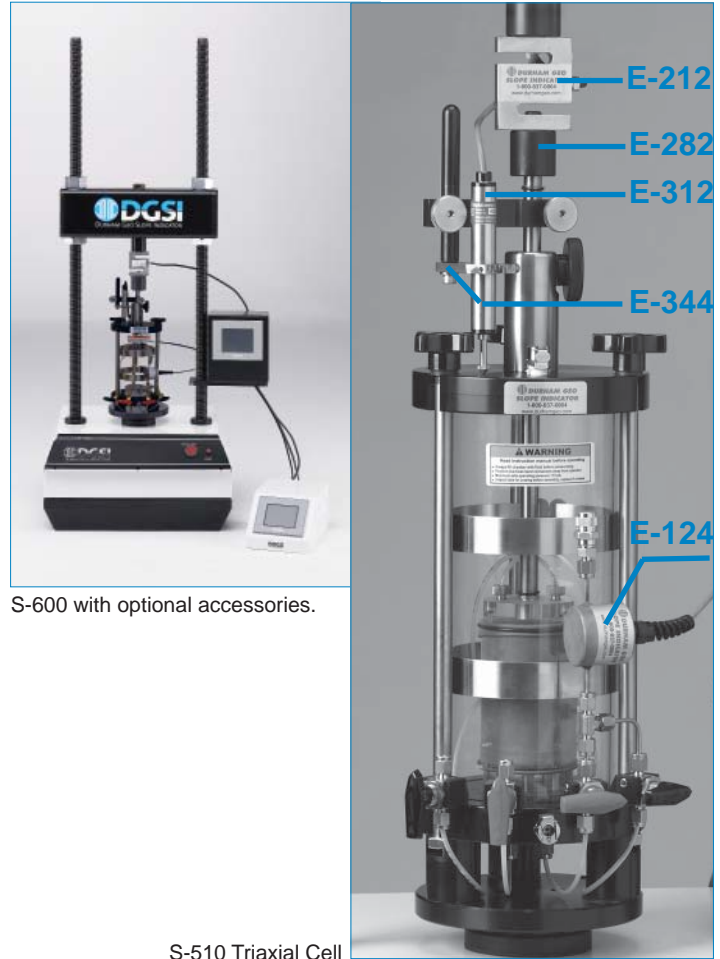
Accessories:

S-510	Triaxial Cell for samples up to 3 in (76 mm) diameter
S-511	Triaxial Cell for 4 in (102 mm) samples
E-124	Pore Pressure Transducer, 0-150 psi (1034 kPa)
E-405	Smart Digital Indicator, 5 digits
E-212	S-Type Load Cell, 2500 lbf (11 kN) capacity
E-312	Linear Displacement Transducer, 2-in (50 mm) range
E-344	Adaptor, LDT-to-S-510 Triaxial Cell
E-281	Adaptor, 3/4-in 16 female-to-1/2-in 20 male
E-282	Load Rod Adaptor for E-212
E-8000E	EZ-Daq 8-Channel Data Acquisition System (US units)
E-8000M	EZ-Daq 8-Channel Data Acquisition System (SI units)

Related Products

E-40521	WinSAS™ Software
S-500	Triaxial / Permeability Panel, 110 V, 60 Hz
Dimensions: (WxDxH)	16 x 22 x 52 in (229 x 406 x 132 mm)
Ship. Wt. (w/o Acc.)	200 lb (91 kg)
Ship. Vol.	4.75 ft ³ (0.13 m ³)

*Other voltages available



S-600 with optional accessories.

S-510 Triaxial Cell

Standard features for the S-600 Triaxial Load Frame:

- Precision DC motor for vibration-free operation
- Motor and reduction box grease packed for long life
- Micro-switch protection to prevent overtravel
- Microprocessor based Controller provides:
 - Visual LCD display for data and screen prompts
 - Set speed from 0.0001 to 0.2 in/min
 - Set travel distance before automatically stopping
 - Visual display in engineering units of platen position during test
 - Visual overtravel alarms
- All exposed parts plated. Cover, base and cross beam are texture painted
- Two auxiliary power sockets provided for accessories

Note: Model S-600, S-60010 and S-6100E Triaxial Load Frames comprise of the frame and controller only. Test cells, transducers and readouts must be purchased separately.

For triaxial and permeability panels, see p.16.

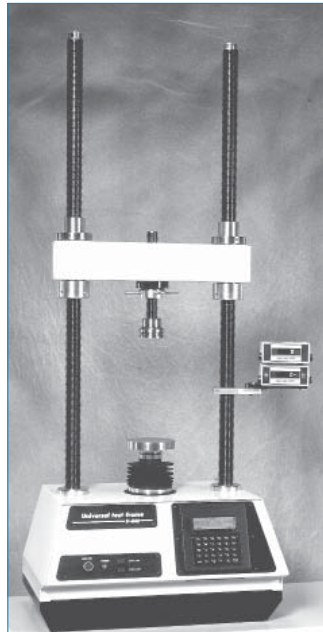
Universal Test Frame for Compression or Tension

Designed for a wide range of needs in the soils, asphalt and concrete laboratory, the Model S-640 will apply up to 40,000 lbf of compression or tension. The high-efficiency direct motor drive system and reduction unit provides high torque with low power input.

The LCD display allows the user to:

- Select Speed (0.2 in/min to 0.001 in/min)*
- Select Platen Travel (3 in maximum)
- Return Home
- Rapid Up or Down
- Start / Stop

*Other speed ranges available.



S-640 shown with optional E-405's, (sold separately).

Hand Operated CBR/LBR Load Frame

ASTM: D 1883

AASHTO: T 193

* See Standards Buyer's Guide at www.DGSI.info/3000.

Designed for both field and soil laboratory CBR/LBR studies, the Hand Operated CBR/LBR Load Frame will apply up to 10,000 lbf (44.5 kN) of force at a steady rate. It uses a hand operated mechanical screw-type jack with a two-speed transmission.

The load frame includes the penetration piston but not the "S" type load cell or digital readout shown in the photo.

Dimensions: 12 x 18 x 42 in (31 x 46 x 107 cm)



S-360 with optional accessories

S-640	Universal Test Frame, 110 V, 60 Hz	270 lb
S-64010	Universal Test Frame, 240 V, 50 Hz	270 lb

Related Items

E-405	Smart Digital Indicator
E-8000E	EZ-Daq 8-Channel Data Acquisition System (US units)
E-8000M	EZ-Daq 8-Channel Data Acquisition System (SI units)
E-240	"S" Type Load Cell, 40,000 lbf (178 kN)
E-311	Linear Displacement Transducer, 1 in x 0.001 in
E-344	LDT Mounting Adapter
E-870	Displacement Support System
E-40521	WinSAS™ Collecting Software for E-405

S-360	Hand Operated CBR/LBR Load Frame	45 lb
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Related Items

E-214	S-Type Load Cell, 6,000 lbf	4 lb
or E-216	S-Type Load Cell, 10,000 lbf	4 lb
S-350	CBR Laboratory Set	300 lb
E-405	Smart Digital Indicator	5 lb
E-714	Proving Ring, 5,000 lbf, w/ dial indicator	5 lb
E-814	Dial Indicator, 1.0 x .001 in travel	1 lb
E-880	Magnetic Dial Indicator Holder w/ swivel post	1 lb

Specifications for Universal Test Frame

Display Type:	LCD
Load Range:	0 to 40,000 lbf (0 to 178 kN) Rated
Vertical Daylight:	40 in (102 cm)
H Daylight:	18 in (45.7 cm)
Bottom Platen:	6 1/4 in (16 cm) - diameter
Max. Platen Travel:	3 in (7.6 cm)
Platen Speed:	0.2 in/min to 0.001 in/min
Strain Rods:	2 in (5.1 cm) - diameter
Cross Beam:	Adjustable to Bottom Platen
Accessory Power:	Aux. sockets, fuses, surge protection
Overall Height:	72 in (183 cm)
Overall Width:	30.5 in (77.5 cm)
Overall Depth:	20 in (51 cm)
Ship Volume:	27 ft ³ (0.76 m ³)
Net Weight:	610 lb (277 kg)

For Unconfined Compression:

S-360	Hand Operated CBR/LBR Load Frame	45 lb
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Related Items

E-212	S-Type Load Cell, 2500 lbf (11 kN) capacity
E-311	Linear Displacement Transducer, 1 in x 0.001 in
E-344	LDT Mounting Adapter
E-405	Smart Digital Indicator
S-580	Upper Cap, 3 in dia.
S-581	Lower Pedestal Set, 3 in
E-712	Proving Ring, 2,000 lbf
E-814	Dial Indicator, 1.0 x .001 in travel
E-880	Magnetic Dial Indicator Holder w/ swivel post