11kR System

Consists of Load frame, Controls, and Software.

Test Methods

- *Strength Tests*
- *Tensile*
- *Compression*
- *Peel and Adhesion*
- *Tear*
- *Shear*
- *Bend Test*
- *Sheet Metal Testing*

Applications

- *Rubber*
- *Foam*
- *Plastics*
- *Adhesives*
- *Metal Products*
- *Textiles*
- *Wire*

System Specifications	
Model Reference	11kM
Load Capacity	11,000 Pounds
Maximum Test Speed	40 inches per minute loaded
Load Accuracy	+/- 0.5% of reading to 1/500th load cell capacity (per ASTM E4)
Position Resolution	0.000004 inches (0.1 micron)

System Services

- 12 month Warranty
- Manuals & Support Documentation including multimedia CD
- Local calibration and engineering services available via field service network
- Optional – On Site Installation and Training
- Optional – Grips, Fixtures, Extensometers and Software

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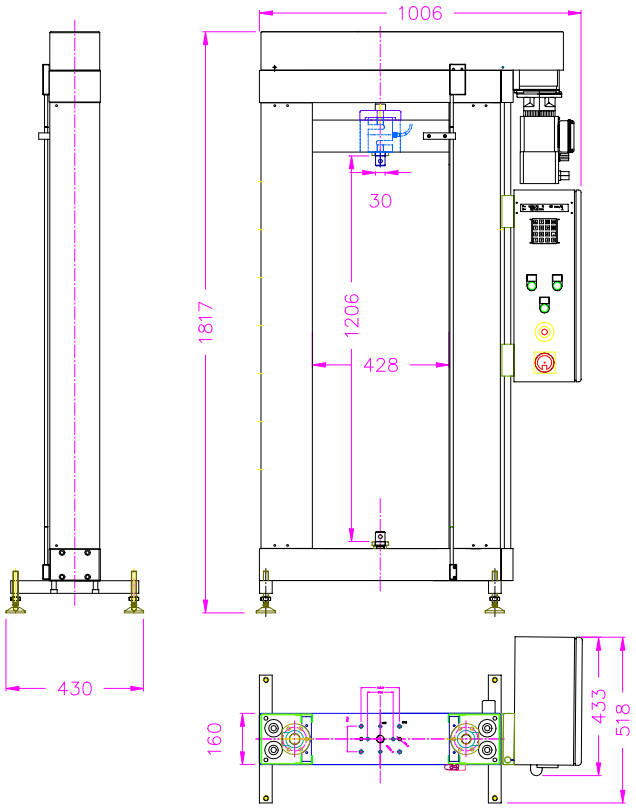
Load Frame



Features

- Crosshead travel 48 inches
- Tabletop design
- High resolution, high quality data
- Multiple travel length and lateral space options

Attribute	Specification
Drive Technology	Servo controlled Electromechanical & Ball Screw
Load Capacity	11000 Pounds
Test Speed Maximum	40 inches per minute
Column Clearance	16.8 inches
Crosshead Head Travel	47.5 inches
Mechanical Interface	Quick Attach Pin with dowel
Dimensions	72"H x 40”W x 17”D
Weight	400 Pounds
Power	240 to 480 VAC
Position Limits	Adjustable Upper and Lower Mechanical limits
Load Cell	
Load Cell Rating	11000 Pounds (Default) with 150% Overload Capacity
Optional Load Cells	Wide selection available.

R Controller

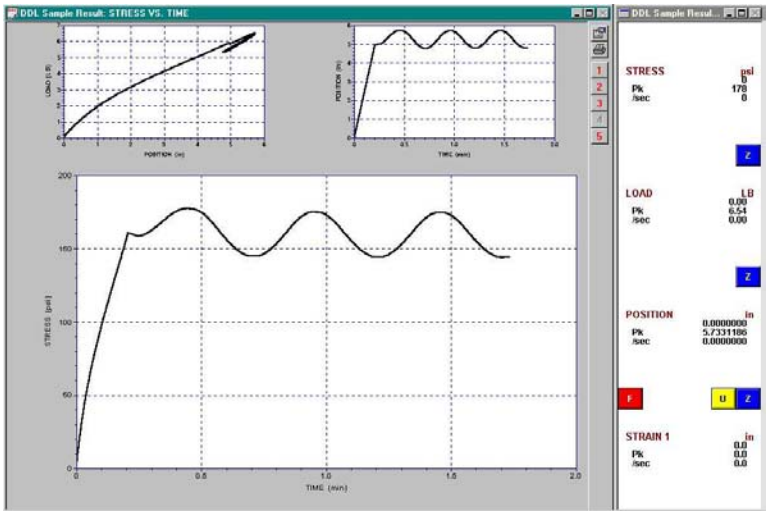
The R Controller is an intelligent 16 bit device to control and measure load, position and strain channels on electromechanical test systems. It features signal conditioning, motor power, position measurement, digital input and output for remote start and stop and analog outputs, data acquisition and data storage. Test results are printed, stored or may be exported to other programs.

Features

- High resolution load, position and strain channels
- Full PC control, data acquisition and analysis.
- Easy to learn and to use.

General Attributes	Specification
Model	R Controller
PC requirements	PC with serial port ; MS Windows 98 or later
Operator Interface	
Machine Controls	▪ Emergency Stop ▪ Jog Up and Jog Down ▪ Stop Test Button
Mechanical Limits	Manually adjustable upper and lower position limits (software limits included also)
Machine Interface	
Cable Connection	Standard Serial Port cable – length 8 feet ; 100 feet optional.
Remote Input	Digital Input for Remote Start & Stop - Optional
Analog Output	14 bit 2 channel output for remote data acquisition – Optional
Channels	
Channels	Three channels included in standard configuration ▪ LOAD CH - Strain gage signal conditioner and data acquisition ▪ POSITION CH - encoder position ▪ STRAIN CH - Extensometer or 2nd load cell signal conditioner and data acquisition ▪ OPTIONAL STRAIN CH 2 – for second extensometer
Data Capture	
Acquisition Rate	50 per second – adjustable rate on each waveform segment through software
Load & Strain Resolution	Load & Strain: 1 part in 1,058,000 using 20 bit averaging firmware
Position Resolution	Position: 0.1 micron (4 micro-inch) encoder resolution
Command Output	
Waveforms	Ramp; Dwell; Haversine segments can be assembled to create custom waveforms. Fatigue testing is not limited by the software, but limited to mechanical nature of the servomotor (less than 1 hz), load cell and other accessories. Contact factory to confirm application.
Transducer Ranges	
Load & Strain Channels	Each channel includes a 5 point linearization table. There are 30 tables per channel that may be used for different ranges, or different sensors.
Data Transfer via Printer	Output is compatible with HP PCL5 Printers (DeskJet and LaserJet)
ASCII Export	XY Data or machine settings may be transferred to 3rd party programs such as MS Excel.

R Software



Features

- Three real time XY Curves monitor sample behavior on multiple channels
- Export test data to MS Excel
- All Analyses included in basic package
- Program system to create custom waveforms – including sinusoidal
- Set data acquisition to match requirements
- Develop test setups to have others run.

R Software	Description
OS Compatibility	Windows 95, 98, NT, 2000 or XP. PC may be supplied by customer.
Data Displays	
Data Units	▪ Load -- Pounds, Newtons, kilograms, grams ▪ Position - Inches, mm, cm ▪ Stress - Psi, MPa, KPa, ksc
Real Time Data Displays	▪ 3 independent XY displays with autozoom and autoscaling ▪ Numeric data displays for each channel
System Management	
Data Export	Data maybe exported in ASCII format to MS Excel and other popular programs.
Test Setups	Infinite number of test setups and configurations may be developed and stored. Each setup includes parameters, labels, specimen information, and any data re-analysis.
Results Storage	Internal data base included for data storage, manipulation and export.
Password	Calibration data is protected by setting password - determined by lab supervisor.
Test Segment	**Profile Generator**
Speed Settings	Test, Jog, and Return Home speeds are programmable.
Standard Waveforms	Trapezoidal, stepped, sinusoidal, block and triangular functions can be easily executed.

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Custom Waveforms	Change and save complex test waveforms by assembling standard segments. Each segment may be based on different load, displacement or time events. User may create and assemble multiple segments consisting of different control modes, timed events, ramps, haversines, or dwell periods with adjustable data acquisition rates.
Block Programming	An indefinite number of cycles can be programmed (e.g. a cyclic position rate can be programmed to go to specified load level and reverse).
Test Conclusion	Select end of cycle, programmed limit, or calculation of asymptotic closure parameters.
Test Analyses	
Analyses - Examples	Modulus of Elasticity, 3 and 4 point modulus, Yield Strength (Offset and Offset 2 by load and stress), Yield (EUL), Peak Load, Peak Stress, Minimum Load, Average Load over Extension Range, Load at Extension Point, Loads at multiple extension points, Reduction of Area, ASTM E646, Energy at Break, ASTM C273 Shear, ASTM D2344, ASTM D1781 Peel Torque, ASTM E1290 CTOD, Minimal CTOD, Johnson's AEL, Picked points, Poissons Ratio, Limits, Yield Halt Force, Spring Rate, YPE (ASTM E8), Strain Ration ASTM C469 modulus, Regression Best Fit, Regression Specify Order and many others. Contact factory for details.
Sample Geometries	Round, Cylinder, Square, Flat Dogbone, 3 & 4 Point Beam, Area, Pipe, Tube, Cut Tube and others.
Multiple Test Results	Reports may be generated with multiple test records stored for each test setup. Each test record configured to match user selectable analyses.