AMETEK®

TEST AND CALIBRATION INSTRUMENTS

www.lloyd-instruments.co.uk
www.davenport-instruments.co.uk
www.chatillon.com
www.ametek.com

UK
Lloyd Instruments Ltd
Forum House
12 Barnes Wallis Rd
Segensworth East, Fareham
Hampshire, UK
PO15 5TT
Tel: +44 (0)1489 486 399
Fax: +44 (0)1489 885 118

America
AMETEK TCI Division
8600 Somerset Drive
Largo
Florida 33773
USA

Tel: +1 (727) 536 7831
Fax: +1(727) 539 6882

Far East
Lloyd Instruments
Far East Representative Office
No7 Sherwood Place
Alexander Heights
6064 Perth
WESTERN AUSTRALIA
Tel: +61 8 9343 5725
Fax: +61 8 9343 5723

France
Lloyd Instruments SA
3 avenue des Coudriers
Zone d'activite de l'observatoire
78180 Montigny-Le-Bretonneux
FRANCE

Tel: +33 (1) 30 57 47 74
Fax: +33 (1) 30 57 50 33

Germany
AMETEK Precision Instruments
Europe GmbH
Rudolf-Diesel-Straße 16
D-40670 Meerbusch
GERMANY

Tel: +49 (0)2159 9136-70
Fax: +49 (0)2159 9136-80

email: general@lloyd-instruments.co.uk
www.lloyd-instruments.co.uk

P-MT-6000-0102

ISO 9001
Manufacturer

Measuring Up To Your Standards

Precision Material Testing Solutions

LLOYD INSTRUMENTS™
A trademark of AMETEK Inc.

Measuring Up To Your Standards.

Your customers demand innovation, reliability and consistently high quality. Your company demands shorter product-to-market cycle times, lower manufacturing costs and improved profitability. You're expected to do more with less.

LLOYD INSTRUMENTS' material testing products meets these demands - we help you deliver dependable, reliable, and quality products that meet your financial goals and your technical requirements. We offer a comprehensive product line engineered to be easy to set up, easy to operate and even easier to maintain.

Our global network of service and support is here to help solve your materials testing problems.

A Reputation for Quality

LLOYD INSTRUMENTS' material testing products have earned their reputation for quality, reliability, accuracy and ease of use. We offer a complete range of LLOYD INSTRUMENTS' products for solving today's simple and complex materials testing requirements including universal testing machines, loadcells, extensometers, thermal chambers, fixtures and grips, plus comprehensive, easy to use software packages.

Helping Leading Companies Engineer Better Products

Experience and innovation are the hallmarks of LLOYD INSTRUMENTS' materials testing solutions. We engineer solutions that are helping leading, global companies make better products with higher quality and improved consistency.

Index

Typical Testing Applications

Plastics
Raw materials
Film bond strength
Rubber, fibre and filament strength
Polyurethane foam firmness
Pharmaceutical pill crush strength
Cosmetic physical properties
Peel strength of adhesives
Compression strength of ceramic and plastic compounds

Packaging
Pull tab strength on beverage containers
Aerosol can force
Blister packs
Film packaging
Top load testing of cartons and boxes
Foil packaging
Strapping tensile strength
Metal containers
Adhesive tape peel strength
Adhesion strength of labels

Metals
Raw materials

Electronics
Test actuating force of snap action switches
Keypad testing
Test forces of springs and magnets
Insertion and withdrawal testing on printed circuit boards
Timing belt tension, sliding friction on electronic equipment
Connector pin removal force
Crimp terminals and lead strength
Pull test on welds in microelectronics
Spring clip insertion and withdrawals
Pull strength on wire wraps
External leads bonded to ceramic substrates
Peel strength on laminates
Thermocompression bonds

Medical Device Manufacturing
Surgical blade sharpness
Inhaler testing
Suture strength
Catheter strength
Stent strength
Syringe insertion and extraction force
Prosthetics
Bandage adhesion

Food
Shear testing
Fruit firmness
Extrusion testing
Spaghetti and noodle testing
Back extrusion cell testing
Texture profile analysis
Food sample fracture testing
Volodkevitch bite test

Automotive
Ergonomics
Peel strength on vinyl inserts
Airbag deployment
Pushbuttons and switches
Odometer pull strength
Mechanical snap-on switches
Seat belt retractors
Arm pressure in windshield wipers

Machinery & Manufacturing
Spring testing
Pull out force in drive shafts
Sprocket chain tension
Wire feed load mechanism

Business Equipment
Clutch release
Slitter knife load
Card perforation
Actuation requirements of pushbuttons
Penclip tension
Paper thickness gauge load
Deflection and sliding friction

Other Applications
Spindles in photographic equipment
Thermal seals
Trigger pull strength
Hardness of gypsum and wallboard products

LF*Plus* Series

1 kN Advanced Universal Testing System

The LF*Plus* Series universal testing machine is an easy to use solution for force measurement and material testing applications up to 1 kN (225 lbf). The machine uses interchangeable XLC Series loadcells. Tension and compression testing with cycling to load and extension limits are standard features. The machine can be equipped with a variety of accessories including grips, fixtures, compression frames and extensometers.

The LF*Plus* features an innovative design that maximises working space and simplifies operation and maintenance. The large work area and deep 175 mm (6.89 in) throat accommodates large specimens and can be supplied with a standard universal eye end or optional expanded work table, T-slot table or drip tray. An impressive 0.05 to 1270 mm/min (0.002 to 50 in/min) crosshead speed makes it ideal for difficult applications including creep tests or constant load holding tests. The machine includes standard pass/fail capabilities and statistics.

The LF*Plus* displays load and extension information on a high visibility LCD console with integral membrane keypad. The machine's intuitive firmware displays prompts and menus that guide the user through setup, operation and maintenance functions. Passwords may be used to limit functions to authorised users. Information can be displayed in a choice of languages as standard.

Machine performance can be optimised using our innovative and easy to use NEXYGEN™ FM application software. This Windows® software package allows users to run standard tests including pull to break, pull to limit, pull/compress with yields, compress to break, compress to limit and cycling. The software stores the force and extension information and displays results in tabular and graphical formats for analysis. Information can easily be exported to Microsoft® Office products including Word® and Excel®.

For advanced users who wish to upgrade, the LF*Plus* can be used with NEXYGEN MT and Ondio™ software.

Features

- Large Working Area
  - 175 mm (6.89 in) Throat for Large Specimens
- Universal Eye End
- Flexible Work Surfaces
  - Standard Base Table
  - Expanded Work Table (Optional)
  - T-Slot Table (Optional)
  - Drip Tray (Optional)
- Load Measurement Device
  - XLC Series Loadcells (Accuracy 0.5% of reading)
- Speed Range
  - 0.05 to 1270 mm/min (0.002 to 50 in/min)
- Intuitive Operator Interface
  - Menu Driven with Intelligent Prompts
  - Membrane Keypad with Tactile Feedback
  - Multiple Languages
  - High Resolution, Backlit LCD Display
- Integral Cabling
- Flash Memory
- NEXYGEN Software Interface
- Extensometer Input
- Load Rate Control

Specifications

Force Capacity	
LF*Plus*	1 kN (225 lbf)
LF*Plus*-E	1 kN (225 lbf)
Crosshead Speed	0.05 to 1270 mm/min (0.002 to 50 in/min)
Speed Accuracy	< 0.2%
Travel	
LF*Plus*	500 mm (19.69 in)
LF*Plus*-E	750 mm (29.53 in)
Load Resolution	< 0.005% of loadcell used (Maximum)
Extension Resolution	< 1.3 microns
Data Sampling Rate	8 kHz
Extensometer Inputs	Digital and Analogue Extensometer
Data Outputs	Digital - RS232, Analogue 10V dc max (Optional)
Load Measuring System	Exceeds the requirements of BS EN ISO 7500: 1999. Class 0.5 or Class1, ASTM E4, DIN 51221
Analysis Software	NEXYGEN FM, NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230 V ac ± 10% 50 - 60 Hz
Weight	46 kg (101 lb)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	2 Years

LF*Plus* Series Ordering Information

Order No. **Description**

BASE Model Number - 1st to 6th Characters

01/LFL LLOYD INSTRUMENTS LF*Plus* Series Universal Test Machine (1 kN, 225 lbf)

Travel Length - 7th Character

S Standard, 500 mm (19.69 in)
E Extended, 750 mm (29.53 in)
P Pogo Design*
X Extended Pogo Design*

Measurement Adapter - 8th to 10th Characters

/LX Loadcell Adapter

Work Surface - 11th Character

A Standard Base
B Expanded Work Table - Metric Threads
C Expanded Work Table - Imperial Threads
D T-Slot Table
E Drip Tray

Mains Power - 12th to 14th Characters

/US 120V ac Mains Power
/UK 230V ac Mains Power
/EU 220V ac Mains Power

Sample Order Number

01/LFL S /LX A /UK

LLOYD INSTRUMENTS LF*Plus* Series with standard 500 mm (19.69 in) travel equipped with loadcell adapter (Order loadcell separately). Machine fitted with standard base with eye end and for 230V ac power (UK Mains).

* Note “Pogo Design” denotes machine designed to perform tests mounted above floor standing compression cage

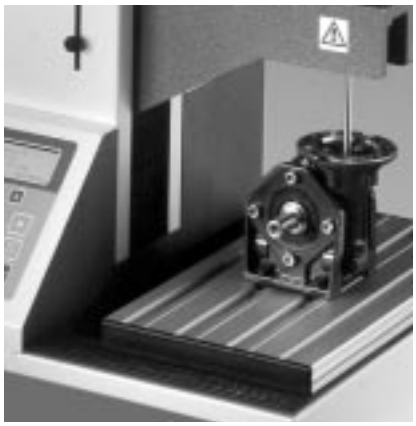
LF*Plus* Series Accessories

Loadcells		Availability	Part No.	Notes
Loadcell Mounting Kit		Standard	SPK/LMF/0002	Supplied with machine
XLC-0005-A1	5 N (1.12 lbf)	Optional	01/2946	Order Separately
XLC-0010-A1	10 N (2.25 lbf)	Optional	01/2360	Order Separately
XLC-0020-A1	20 N (4.5 lbf)	Optional	01/2950	Order Separately
XLC-0050-A1	50 N (11.25 lbf)	Optional	01/2361	Order Separately
XLC-0100-A1	100 N (22.5 lbf)	Optional	01/2480	Order Separately
XLC-0250-A1	250 N (56.25 lbf)	Optional	01/3048	Order Separately
XLC-0500-A1	500 N (112.5 lbf)	Optional	01/2362	Order Separately
XLC-1000-A1	1000 N (225 lbf)	Optional	01/2419	Order Separately

Application Software	Availability	Part No.	Notes
NEXYGEN FM Software	Optional	40/0738	
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	Availability	Part No.	Notes
Operators' Manual	Standard	01/3085	
Expanded Work Table, Metric	Optional	SPK/LFM/0007	M6 Tapped holes, 350 x 400 mm (13.78 x 15.75 in)
Expanded Work Table, Imperial	Optional	SPK/LFM/0008	#10-32 Tapped holes, 350 x 400 mm (13.78 x 15.75 in)
T-Slot Table	Optional	SPK/LFM/0009	180 x 240 mm (7.09 x 9.45 in)
Drip Tray	Optional	SPK/LFM/0010	

Expanded Work Table



T-Slot Table

Loadcell Mounting Kit

Kit includes:

- 1 x User Manual
- 2 x Anti-backlash Nuts
- 1 x Anchor Pin
- 2 x Grip Pin
- 1 x C Type Spanner
- 1 x 8mm A/F Allen Key
- 1 x Button head cap screw
- 1 x 12mm Loadcell spacer
- 1 x RS232 Loom

LRX Series

2.5 kN Universal Testing System

The LRX single column, bench mounted materials testing system provides a complete solution for applications up to 2.5 kN (562.5 lbf). Tension and compression testing with cycling to load and extension limits are standard features. Load and extension are displayed on a highly legible LCD display console, selectable in a variety of units. Multi lingual instructions are displayed in a sequential menu driven format, allowing test setup and operation to be achieved rapidly and efficiently. The extension measurement system uses a digital encoder to achieve high resolution throughout its extension ranges.

The LRX can be further enhanced with LLOYD INSTRUMENTS' state of the art materials test and data analysis software, NEXYGEN™ MT. The system is ideal for batch testing in production or routine quality control checks. Alternatively, it can be configured as a sophisticated research grade machine incorporating multi-stage testing for product development and complex research applications.

Features

- Simple to setup, operate and maintain
- High accuracy load measurement (Accuracy 0.5% of reading)
- Rapid data acquisition
- Continuous cycling between extension and load limits
- Extension resolution better than 1 micron
- Multi lingual display options
- Multi unit display options
- Full PC integration
- Wide selection of loadcells, grips, jigs and accessories

Specifications

Force Capacity	
LRX	2.5 kN (562.5 lbf)
LRX-E	2.5 kN (562.5 lbf)
Crosshead Speed	0.01 to 1020 mm/min (0.0004 to 40.16 in/min)
Speed Accuracy	< 0.2%
Travel	
LRX	750 mm (29.53 in)
LRX-E	1500 mm (59.05 in)
Load Resolution	< 0.005% of loadcell used (Maximum)
Extension Resolution	< 1 micron
Data Sampling Rate	40 Hz
Extensometer Inputs	+10V dc analogue input (Optional)
Data Outputs	Digital - RS232, Analogue - 10V dc max (Optional)
Load Measuring System	Exceeds the requirements of BS EN ISO 7500: 1999. Class 0.5 or Class1, ASTM E4, DIN 51221
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	54 kg (119 lb)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

LRX Series Ordering Information

Model	Part No.	Capacity	Description
LRX	01/2005	2.5 kN (562.5 lbf)	LRX with Console
LRX-E	01/2115	2.5 kN (562.5 lbf)	LRX Extended Single Column, with Console
LRX-CC	01/2753	2.5 kN (562.5 lbf)	LRX Pogo Design* with Console

LRX Series Accessories

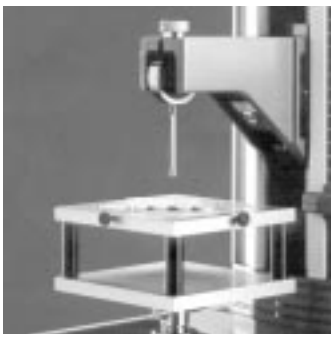
Loadcells		Availability	Part No.	Notes
LRX-0005-A1	5 N (1.12 lbf)	Optional	01/2968	Order Separately
LRX-0010-A1	10 N (2.25 lbf)	Optional	01/2322	Order Separately
LRX-0020-A1	20 N (4.5 lbf)	Optional	01/2600	Order Separately
LRX-0050-A1	50 N (11.25 lbf)	Optional	01/2321	Order Separately
LRX-0100-A1	100 N (22.5 lbf)	Optional	01/2320	Order Separately
LRX-0250-A1	250 N (56.25 lbf)	Optional	01/2992	Order Separately
LRX-0500-A1	500 N (112.5 lbf)	Optional	01/2164	Order Separately
LRX-1000-A1	1000 N (225 lbf)	Optional	01/2163	Order Separately
LRX-2500-A1	2500 N (562.5 lbf)	Optional	01/2131	Order Separately

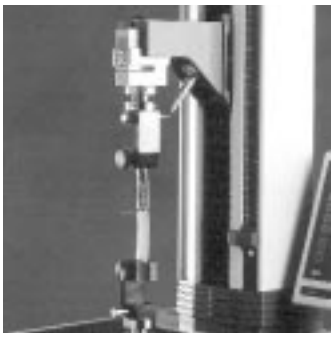
Interface Cables	Availability	Part No.	Notes
RS232 Cable, 9 Pin	Standard	09/0311	Cable length 2 m (78.7 in)
RS232 Adapter, 9 Pin to 25 Pin	Standard	ADT/0140/00	For PC Interface

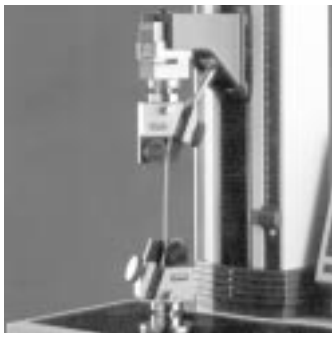
Application Software	Availability	Part No.	Notes
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	Availability	Part No.	Notes
Operators' Manual	Standard	01/2066	
Hex Key, 8mm (0.31 in)	Standard	92/0401	
Spanner Wrench, 42mm (1.65 in)	Standard	SPT/0244/00	
Steady Bracket	Standard	BRT/0698/00	
Plug Adapter	Optional	PGT/0315/00	Adapter 6.3 mm jack plug to 3.5 mm socket
Grip Pin, 5/8 in	Optional	PIT/0169/00	Secures grip to eye end on machine
Grip Pin, 1⁄ in	Optional	PIN/0061/00	Secures grip to eye end on machine
GF Series Grip Adapter	Optional	NC000828	For GF Series Imperial Size Grips
Adapter, 5/8 in to 1⁄ in Eye End	Optional	ADT/0030/00	To Convert to 1⁄ in Eye End
Splinter Shield	Optional	07/2058/F	Lower shield suitable for fixtures/samples up to 125 mm (4.92 in) diameter - without electrical interlock

(Larger shields are available to suit specific applications).







* Note "Pogo Design" denotes machine designed to perform tests mounted above floor standing compression cage

LRX*Plus* Series

5 kN Advanced Universal Testing System

The LRX*Plus* Series universal testing system is ideal for material testing applications up to 5 kN (1124 lbf). Suitable for complex testing applications and testing high elongation materials, the standard LRX*Plus* features a single column with a crosshead travel range of 735 mm (28.94 in).

The LRX*Plus* features an integral control console with membrane multi-function keypad and easy to read backlit LCD display. Load and extension are displayed, and may be indicated in user-selectable units. The system is capable of storing up to 600 test results from a choice of 10 programmable test setups. Test parameters are entered using the keypad in a sequential menu driven format, or externally with a personal computer and the optional NEXYGEN™ MT data analysis software. RS232 serial data communications are standard.

A range of highly accurate, interchangeable loadcells are available for tension, compression and cycling through zero force measurements. A wide range of grips and fixtures are available to support virtually any type of test.

Features

- Simple setup, operation and maintenance
- Constant load holding
- Data sampling rate 8 kHz
- Load rate control
- Preloading of samples and cycling to load or extension limits
- Multi-stage testing with NEXYGEN MT and Ondio™ Software
- Extension resolution better than 0.1 micron
- Multi lingual display options
- Multi unit display options
- Full PC integration
- Wide selection of loadcells, grips, jigs and accessories

Specifications

Force Capacity	
LRX*Plus*	5 kN (1124 lbf)
LRX*Plus*-E	2.5 kN (562.5 lbf)
Crosshead Speed	0.01 to 1020 mm/min 0.0004 to 40.16 in/min
Speed Accuracy	< 0.2%
Travel	
LRX*Plus*	735 mm (28.94 in)
LRX*Plus*-E	1370 mm (53.94 in)
Load Resolution	< 0.005% of loadcell used
Extension Resolution	< 0.1 micron
Data Sampling Rate	8 kHz
Extensometer Inputs	Digital and Analogue Extensometer
Data Outputs	Digital - RS232, Analogue 10V dc max (Optional)
Load Measuring System	Exceeds the requirements of BS EN ISO 7500: 1999. Class 0.5 or Class1, ASTM E4, DIN 51221
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	50 kg (110 lb)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

LRX*Plus* Series Ordering Information

Model	Part No.	Capacity	Description
LRX*Plus*	01/2962	5 kN (1124 lbf)	LRX*Plus* with console
LRX*Plus*-E	01/2990	2.5 kN (562.5 lbf)	LRX*Plus* Extended with console
LRX*Plus*-CC	01/2998	5 kN (1124 lbf)	LRX*Plus* Pogo Design* with console

LRX*Plus* Series Accessories

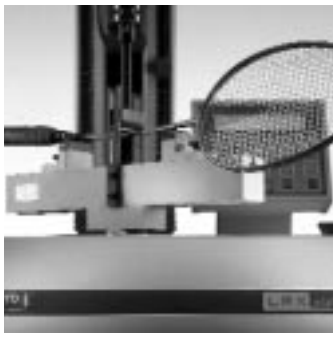
Loadcells		Availability	Part No.	Notes
XLC-0005-A1	5 N (1.12 lbf)	Optional	01/2946	Order Separately
XLC-0010-A1	10 N (2.25 lbf)	Optional	01/2360	Order Separately
XLC-0020-A1	20 N (4.5 lbf)	Optional	01/2950	Order Separately
XLC-0050-A1	50 N (11.25 lbf)	Optional	01/2361	Order Separately
XLC-0100-A1	100 N (22.5 lbf)	Optional	01/2480	Order Separately
XLC-0250-A1	250 N (56.25 lbf)	Optional	01/3048	Order Separately
XLC-0500-A1	500 N (112.5 lbf)	Optional	01/2362	Order Separately
XLC-1000-A1	1000 N (225 lbf)	Optional	01/2419	Order Separately
XLC-2500-A1	2500 N (562.5 lbf)	Optional	01/2363	Order Separately
XLC-5000-A1	5000 N (1124 lbf)	Optional	01/2364	Order Separately

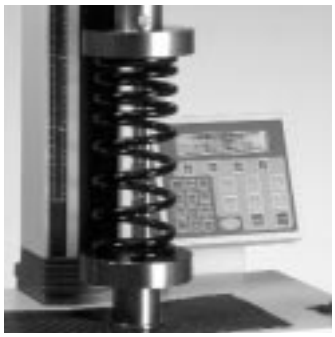
Interface Cables	Availability	Part No.	Notes
RS232 Cable, 9 Pin	Standard	09/0639	Cable length 2 m (78.7 in)
RS232 Adapter, 9 Pin to 25 Pin	Optional	ADT/0140/00	For PC Interface

Application Software	Availability	Part No.	Notes
NEXYGEN FM Software	Optional	40/0738	
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	Availability	Part No.	Notes
Operators' Manual	Standard	01/2973	
Hex Key, 8mm (0.31 in)	Standard	92/0401	
Spanner Wrench, 42 mm (1.65 in)	Standard	SPT/0244/00	
Steady Bracket	Standard	BRT/0698/00	
Remote Console with Side Mounting Bracket	Optional	01/3063	
Grip Pin, 5/8 in	Optional	PIT/0169/00	Secures grip to eye end on machine
Grip Pin, 1⁄ in	Optional	PIN/0061/00	Secures grip to eye end on machine
GF Series Grip Adapter	Optional	NC000828	For GF Series Imperial Size Grips
Adapter, 5/8 in to 1⁄ in Eye End	Optional	ADT/0030/00	To Convert to 1⁄ in Eye End
Splinter Shield	Optional	07/2058/F	Lower shield suitable for fixtures/samples up to 125 mm (4.92 in) diameter - without electrical interlock
Splinter Shield	Optional	01/3064	Lower shield suitable for fixtures/samples up to 125 mm (4.92 in) diameter - with electrical interlock

(Larger shields are available to suit specific applications).





* Note "Pogo Design" denotes machine designed to perform tests mounted above floor standing compression cage

LR5K*Plus* Series

5 kN Advanced Universal Testing System

The LR5K*Plus* Series advanced, twin column, materials testing machine incorporates an extensive range of features making it ideal for performing complex testing applications up to 5 kN (1124 lbf).

The machine is microprocessor controlled and incorporates world proven 32 bit technology for highly accurate load measurement and rapid data acquisition. The integral user interface consists of a side mounted control console with large, positive action membrane switches, allowing complex tests to be performed at the touch of a button. A large LCD display shows test setup information, an extensive choice of user selectable languages and multiple units.

The stand alone system is capable of storing up to 600 test results from a choice of 10 programmable test set-ups. It may also be connected via an RS232 output to a personal computer running NEXYGEN™ MT software, providing almost unlimited testing capability, and results processing features.

The high stiffness frame incorporates a crosshead guidance system to prevent side loading of the sample under test. The crosshead is driven by twin lead screws and a high precision servo motor and DC servo system to achieve a wide range of speeds throughout the full load range.

A series of highly accurate, interchangeable loadcells are available for tension, compression and cycling through zero force measurements. In addition, an extensive range of grips and fixtures are available to support virtually any type of test.

The system is ideal for use in production, quality control, educational and research environments.

Features

- Simple to set up, operate and maintain
- 2 key press operation
- High accuracy load measurement (0.5% of reading)
- Data sampling rate 8 kHz
- 32 bit micro controller
- Saves 600 test results
- 10 programmable test setups
- Extension resolution < 0.1 micron
- Long crosshead travel 1000 mm (39.37 in) for ductile samples
- Multi lingual display options
- Multi unit display options
- Full PC integration with NEXYGEN MT software
- Wide selection of loadcells, grips, jigs and accessories
- Flash upgradeable

LR5K*Plus* Series Ordering Information

Model	Part No.	Description
LR5K*Plus*	01/3051	LR5K*Plus* with console
LR5K*Plus-E*	01/3073	LR5K*Plus* Extended column with console
LR5K*Plus-CC*	01/3075	LR5K*Plus* Pogo design* with console

* Note “Pogo Design” denotes machine designed to perform tests mounted above floor standing compression cage

Specifications

Force Capacity	
LR5K*Plus*	5 kN (1124 lbf)
LR5K*Plus*-E	5 kN (1124 lbf)
Crosshead Speed	0.01 to 1020 mm/min (0.0004 to 40.16 in/min)
Speed Accuracy	< 0.2%
Travel	
LR5K*Plus*	975 mm (38.39 in)
LR5K*Plus*-E	1460 mm (57.48 in)
Load Resolution	< 0.005% of loadcell used (Maximum)
Extension Resolution	< 0.1 micron
Data Sampling Rate	8 kHz
Extensometer Inputs	Digital and Analogue Extensometer
Data Outputs	Digital - RS232, Analogue 10V dc max (Optional)
Load Measuring System	Exceeds the requirements of BS EN ISO 7500-1, ASTM E4, DIN 51221.
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	105 kg (231 lb)
Width Between Columns	400 mm (15.75 in)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

LR5K*Plus* Series Accessories

Loadcells		**Availability**	**Part No.**	**Notes**
XLC-0005-A1	5 N (1.12 lbf)	Optional	01/2946	
XLC-0010-A1	10 N (2.25 lbf)	Optional	01/2360	
XLC-0020-A1	20 N (4.5 lbf)	Optional	01/2950	
XLC-0050-A1	50 N (11.25 lbf)	Optional	01/2361	
XLC-0100-A1	100 N (22.5 lbf)	Optional	01/2480	
XLC-0250-A1	250 N (56.25 lbf)	Optional	01/3048	
XLC-0500-A1	500 N (112.5 lbf)	Optional	01/2362	
XLC-1000-A1	1000 N (225 lbf)	Optional	01/2419	
XLC-2500-A1	2500 N (562.5 lbf)	Optional	01/2363	
XLC-5000-A1	5000 N (1124 lbf)	Optional	01/2364	

Interface Cables	**Availability**	**Part No.**	**Notes**
RS232 Cable, 9 Pin	Standard	09/0639	Cable length 2 m (78.7 in)
RS232 Adapter, 9 Pin to 25 Pin	Optional	ADT/0140/00	For PC Interface
Cable, Control Console (External)	Standard	09/0710	

Application Software	**Availability**	**Part No.**	**Notes**
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	**Availability**	**Part No.**	**Notes**
Operators' Manual	Standard	01/3083	
Hex Key, 8 mm (0.31 in)	Standard	92/0401	
Spanner Wrench, 42 mm (1.65 in)	Standard	SPT/0244/00	
Grip Pin, 5/8 in Eye End	Standard	PIT/0169/00	Secures grip to eye end on machine
Loadcell Mounting Adapter M12	Standard	ADT/0148/10	

LR10K*Plus* Series

10 kN Advanced Universal Testing System

The LR10K*Plus* Series advanced, twin column, materials testing machine incorporates an extensive range of features making it ideal for performing complex testing applications up to 10 kN (2248 lbf).

The machine is microprocessor controlled and incorporates world proven 32 bit technology for highly accurate load measurement and rapid data acquisition. The integral user interface consists of a side mounted control console with large, positive action membrane switches, allowing complex tests to be performed at the touch of a button. A large LCD display shows test setup information, an extensive choice of user selectable languages and multiple units.

The stand alone system is capable of storing up to 600 test results from a choice of ten programmable test setups, or may be connected via its RS232 output to a personal computer running NEXYGEN™ MT software, providing almost unlimited testing capability, and results processing features.

The high stiffness frame incorporates a crosshead guidance system to prevent side loading of the sample under test. The crosshead is driven by twin lead screws and a high precision servo motor and DC servo system to achieve a wide range of speeds throughout the full load range.

A series of highly accurate, interchangeable loadcells are available for tension, compression and cycling through zero force measurements. In addition, an extensive range of grips and fixtures is available to support virtually any type of test. The system is ideal for use in production, quality control, educational and research environments.

Features

- Simple to set up, operate and maintain
- 2 key press operation
- High accuracy load measurement
- Data sampling rate 8 kHz
- 32 bit micro controller
- Saves 600 test results
- 10 programmable test set-ups
- Extension resolution < 0.1 micron
- Long crosshead travel 975 mm (38.39 in)
- Multi lingual display options
- Multi unit display options
- Full PC integration with NEXYGEN MT software
- Wide selection of load cells, grips, jigs and accessories
- Flash upgradeable

LR10K*Plus* Series Ordering Information

Model	Part No.	Description
LR10K*Plus*	01/3052	LR10K*Plus* with console
LR10K*Plus*	01/3078	LR10K*Plus* Extended column with console
LR10K*Plus*	01/3080	LR10K*Plus* Pogo design* with console

* Note “Pogo Design” denotes machine designed to perform tests mounted above floor standing compression cage

Specifications

Force Range	
LR10K*Plus*	10 kN (2248 lbf)
LR10K*Plus*-E	10 kN (2248 lbf)
Crosshead Speed	0.01 to 510 mm/min (0.0004 to 20.08 in/min)
Speed Accuracy	< 0.2%
Travel	
LR10K*Plus*	950 mm (37.40 in)
LR10K*Plus*-E	1465 mm (57.68 in)
Load Resolution	< 0.005% of loadcell used (Maximum)
Extension Resolution	< 0.1 micron
Data Sampling Rate	8 kHz
Extensometer Inputs	Digital and Analogue Extensometer
Data Outputs	Digital - RS232, Analogue 10V dc max (Optional)
Load Measuring System	Exceeds the requirements of BS EN ISO 7500-1, ASTM E4, DIN 51221.
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	105 kg (231 lb)
Width Between Columns	400 mm (15.75 in)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

LR10KP*lus* Series Accessories

Loadcells		**Availability**	**Part No.**	**Notes**
XLC-0005-A1	5 N (1.12 lbf)	Optional	01/2946	
XLC-0010-A1	10 N (2.25 lbf)	Optional	01/2360	
XLC-0020-A1	20 N (4.5 lbf)	Optional	01/2950	
XLC-0050-A1	50 N (11.25 lbf)	Optional	01/2361	
XLC-0100-A1	100 N (22.5 lbf)	Optional	01/2480	
XLC-0250-A1	250 N (56.25 lbf)	Optional	01/3048	
XLC-0500-A1	500 N (112.5 lbf)	Optional	01/2362	
XLC-1000-A1	1000 N (225 lbf)	Optional	01/2419	
XLC-2500-A1	2500 N (562.5 lbf)	Optional	01/2363	
XLC-5000-A1	5000 N (1124 lbf)	Optional	01/2364	
XLC-10K-A1	10 kN (2248 lbf)	Optional	01/2365	

Interface Cables	**Availability**	**Part No.**	**Notes**
RS232 Cable, 9 Pin	Standard	09/0639	Cable length 2 m (78.7 in)
RS232 Adapter, 9 Pin to 25 Pin	Optional	ADT/0140/00	For PC Interface
Cable, Control Console (External)	Standard	09/0710	

Application Software	**Availability**	**Part No.**	**Notes**
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	**Availability**	**Part No.**	**Notes**
Operators' Manual	Standard	01/3083	
Hex Key, 5 mm (0.20 in)	Standard	92/0293	
Spanner Wrench, 42 mm (1.65 in)	Standard	SPT/0244/00	
Grip Pin, 5/8 in Eye End	Standard	PIT/0169/00	Secures grip to eye end on machine
Loadcell Mounting Adapter M12	Standard	ADT/0148/00	

EZ20 Series

20 kN Advanced Universal Testing System

The EZ20 materials testing system combines high performance, flexibility and exceptional ease of use. It is ideal for testing applications up to 20 kN (4496 lbf) in tension and direct compression.

The EZ20 features a twin column, twin lead screw frame, and incorporates a crosshead guidance system to prevent side loading of the sample under test. A high resolution encoder is used to measure sample extension and also to provide high accuracy speed control. The crosshead is driven by a high precision servo motor and DC servo system to achieve a wide range of speeds throughout the full load range.

The EZ20 features a multi-position control console with membrane multi function keypad and easy to read LCD display. The machine may be programmed to perform up to 10 different tests and the statistics for each test are automatically calculated. Up to 600 results may be stored from any of the test setups. Tests may also be performed using state of the art control and analysis software NEXYGEN™ MT, via the integral RS232 interface.

A series of highly accurate, interchangeable load cells and extensometers are available for tension, compression and cycling through zero force measurements. In addition, an extensive range of grips, jigs and accessories are available to help you meets your testing objectives.

Features

- 10 programmable test setups
- 4 line backlit LCD
- On line statistics
- 32 bit micro controller
- Saves 600 test results
- 2 key press operation
- Data sampling rate 8 kHz
- Flash upgradeable
- Easy set safety limits
- Extension resolution < 0.1 micron

EZ20 Series Ordering Information

Model	Part No.	Capacity	Description
EZ20	01/2889	20 kN (4496 lbf)	EZ20 with console
EZ20-CC	01/2949	20 kN (4496 lbf)	EZ20 Pogo design* with console

* Note “Pogo Design” denotes machine designed to perform tests mounted above floor standing compression cage

Specifications

Force Range	20kN (4496 lbf)
Crosshead Speed	
Up to 20 kN (4500 lbf)	0.1 to 500mm/min (0.01 to 19.68 in/min)
Up to 10 kN (2200 lbf)	0.1 to 1020mm/min (0.01 to 40.16 in/min)
Speed Accuracy	< 0.2% at steady state
Travel	870 mm (34.25 in)
Load Resolution	< 0.005% of loadcell used (Maximum)
Extension Resolution	< 0.1 micron
Data Sampling Rate	8 kHz
Extensometer Inputs	Digital and Analogue Extensometer
Data Outputs	Digital - RS232, Analogue 10V dc max (Optional)
Load Measuring System	Exceeds the requirements of BS EN ISO 7500-1, ASTM E4, DIN 51221.
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230 Vac ± 10% 50 - 60 Hz
Weight	150 kg (330 lb)
Width Between Columns	400 mm (15.75 in)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

EZ20 Series Accessories

Loadcells		**Availability**	**Part No.**	**Notes**
XLC-0005-A1	5 N (1.12 lbf)	Optional	01/2946	
XLC-0010-A1	10 N (2.25 lbf)	Optional	01/2360	
XLC-0020-A1	20 N (4.5 lbf)	Optional	01/2950	
XLC-0050-A1	50 N (11.25 lbf)	Optional	01/2361	
XLC-0100-A1	100 N (22.5 lbf)	Optional	01/2480	
XLC-0250-A1	250 N (56.25 lbf)	Optional	01/3048	
XLC-0500-A1	500 N (112.5 lbf)	Optional	01/2362	
XLC-1000-A1	1000 N (225 lbf)	Optional	01/2419	
XLC-2500-A1	2500 N (562.5 lbf)	Optional	01/2363	
XLC-5000-A1	5000 N (1124 lbf)	Optional	01/2364	
XLC-10K-A1	10 kN (2248 lbf)	Optional	01/2365	
XLC-20K-A1	20 kN (4496 lbf)	Optional	01/2417	

Interface Cables	**Availability**	**Part No.**	**Notes**
RS232 Cable, 9 Pin	Standard	09/0639	Cable length 2 m (78.7 in)
RS232 Adapter, 9 Pin to 25 Pin	Optional	ADT/0140/00	For PC Interface
Cable, Control Console (External)	Standard	09/0710	

Application Software	**Availability**	**Part No.**	**Notes**
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	**Availability**	**Part No.**	**Notes**
Operators' Manual	Standard	01/2839	
Hex Key, 5 mm (0.2 in)	Standard	92/0401	
Spanner Wrench, 42 mm (1.65 in)	Standard	SPT/0244/00	
Anchor Pin, 5/8 in	Standard	PIN/0258/00	To be fitted to base of machine
Grip Pin, 5/8 in Eye End	Standard	PIT/0169/00	Secures grip to eye end on machine
Grip Pin, 1⁄ in Eye End	Standard	PIN/0061/00	Secures grip to eye end on machine
Loadcell Mounting Adapter, M12	Standard	ADT/0150/00	
Loadcell Mounting Adapter, M20	Standard	ADT/0151/00	
Splinter Shield	Optional	01/3095	With electrical interlock

LR30K Series

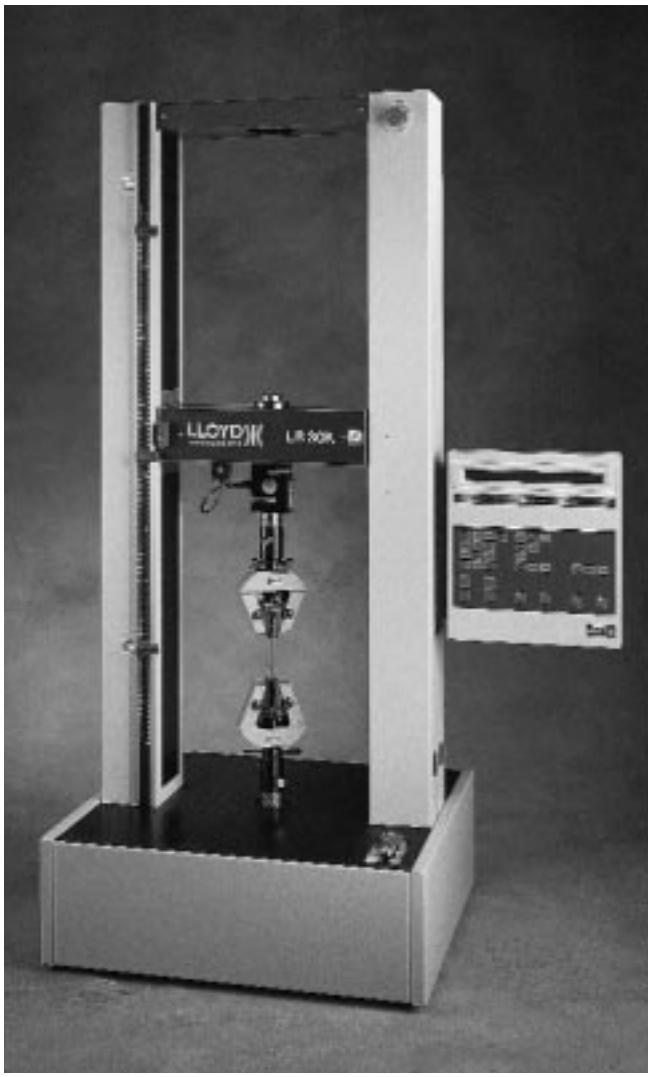
30 kN Universal Testing System

The LR30K is a bench mounted, twin column materials testing system providing a complete solution for testing applications up to 30 kN (6744 lbf).

The machine is microprocessor controlled and is operated from the integral control console which has large, positive action membrane switches to allow tests to be quickly and easily performed. A large LCD display shows the test and setup information in English, French, German, Spanish, Italian, Danish or Japanese.

The high stiffness frame incorporates a crosshead guidance system to prevent side loading of the sample under test. A high resolution encoder is used to measure sample extension as well as providing high accuracy speed control. The crosshead is driven by a high precision servo motor and DC servo system to achieve a wide range of speeds throughout the full load range.

The LR30K performance can be further enhanced with our NEXYGEN™ MT state of the art materials test and data analysis software. The system is ideal for use in production, quality control, educational and research environments.



Features

- Simple to set up, operate and maintain
- High accuracy load measurement (0.5% of reading)
- Rapid data acquisition
- Extension resolution better than 0.1 micron
- Exceeds national and international standards
- Long crosshead travel 870 mm (34.25 in) for ductile samples
- Multi lingual display options
- Multi unit display options
- Full PC integration
- Wide selection of loadcells, grips, jigs and accessories

LR30K Series Ordering Information

Model	Part No.	Capacity	Description
LR30K	01/2534	30 kN (6744 lbf)	LR30K with console
LR30K-E	01/2459	30 kN (6744 lbf)	LR30K Extended column with console
LR30KCC	01/2788	30 kN (6744 lbf)	LR30K Pogo design* with console

* Note “Pogo Design” denotes machine designed to perform tests mounted above floor standing compression cage

Specifications

Force Range	30 kN (6744 lbf)
Crosshead Speed	0.02 to 510 mm/min (0.001 to 20.08 in/min)
Speed Accuracy	< 0.2% at steady state
Travel	
LR30K	870 mm (34.25 in)
LR30K-E	1350 mm (53.15 in)
Load Resolution	< 0.005% of loadcell used (Maximum)
Extension Resolution	< 0.1 micron
Data Sampling Rate	100 Hz
Extensometer Inputs	
Standard	0 - 10V dc analogue
Optional	0 - 1V dc analogue input and strain gauge (Requires amplifier kit P/N 01/1966)
Data Outputs	Digital - RS232, Analogue - 10V dc max
Load Measuring System	Exceeds the requirements of BS EN ISO 7500 1999, Class 0.5, ASTM E4, DIN 51221.
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	125 kg (275 lb)
Width Between Columns	400 mm (15.75 in)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

LR30K Series Accessories

Loadcells		**Availability**	**Part No.**	**Notes**
XLC-0005-A1	5 N (1.12 lbf)	Optional	01/2946	
XLC-0010-A1	10 N (2.25 lbf)	Optional	01/2360	
XLC-0020-A1	20 N (4.5 lbf)	Optional	01/2950	
XLC-0050-A1	50 N (11.25 lbf)	Optional	01/2361	
XLC-0100-A1	100 N (22.5 lbf)	Optional	01/2480	
XLC-0250-A1	250 N (56.25 lbf)	Optional	01/3048	
XLC-0500-A1	500 N (112.5 lbf)	Optional	01/2362	
XLC-1000-A1	1000 N (225 lbf)	Optional	01/2419	
XLC-2500-A1	2500 N (562.5 lbf)	Optional	01/2363	
XLC-5000-A1	5000 N (1124 lbf)	Optional	01/2364	
XLC-10K-A1	10 kN (2248 lbf)	Optional	01/2365	
XLC-20K-A1	20 kN (4496 lbf)	Optional	01/2417	
XLC-30K-A1	30 kN (6744 lbf)	Optional	01/2366	

Interface Cables	**Availability**	**Part No.**	**Notes**
RS232 Cable, 9 Pin	Standard	09/0311	Cable length 2 m (78.7 in)
RS232 Adapter, 9 Pin to 25 Pin	Optional	ADT/0140/00	For PC Interface

Application Software	**Availability**	**Part No.**	**Notes**
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	**Availability**	**Part No.**	**Notes**
Operators' Manual	Standard	01/1934	
Hex Key, 5mm (0.2 in)	Standard	92/0293	
Spanner Wrench, 42mm (1.65 in)	Standard	SPT/0244/00	
Anchor Pin, 5/8 in	Standard	PIN/0233/00	To be fitted to base of machine
Anchor Pin, 1″in	Standard	PIN/0234/00	To be fitted to base of machine
Grip Pin, 5/8 in Eye End	Standard	PIT/0169/00	Secures grip to eye end on machine
Grip Pin, 1″in Eye End	Standard	PIN/0061/00	Secures grip to eye end on machine
Loadcell Mounting Adapter, M12	Standard	ADT/0150/00	
Loadcell Mounting Adapter, M20	Standard	ADT/0151/00	
Strain Gauge Amplifier	Optional	01/1966	For use with STGA extensometers
Splinter Shield	Optional	01/1972	With electrical interlock

EZ50 Series

50 kN Advanced Universal Testing System

The EZ50 materials testing system combines high performance, flexibility and exceptional ease of use. It is ideal for testing applications up to 50 kN (11240 lbf) in tension and direct compression.

The EZ50 features a twin column, twin lead screw frame, and incorporates a crosshead guidance system to prevent side loading of the sample under test. A high resolution encoder is used to measure sample extension and also to provide high accuracy speed control. The crosshead is driven by a high precision servo motor and DC servo system to achieve a wide range of speeds throughout the full load range.

The EZ50 features a multi-position control console with membrane multi function keypad and easy to read LCD display. The machine may be programmed to perform up to 10 different tests and the statistics for each test are automatically calculated. Up to 600 results may be stored from any of the test setups. Tests may also be performed using state of the art control and analysis software NEXYGEN™ MT, via the integral RS232 interface.

A series of highly accurate, interchangeable load cells and extensometers are available for tension, compression and cycling through zero force measurements. In addition, an extensive range of grips, jigs and accessories are available to help you meet your testing objectives.

Features

- 10 programmable test setups
- 4 line backlit LCD
- Online statistics
- 32 bit micro controller
- Saves 600 test results
- 2 key press operation
- Data sampling rate 8 kHz
- Flash upgradable
- Easy set safety limits
- Extension resolution < 0.1 micron

EZ50 Series Ordering Information

Model	Part No.	Description
EZ50	01/2830	EZ50 with console
EZ50-CC	01/3058	EZ50 Pogo design* with console

* Note “Pogo Design” denotes machine designed to perform tests mounted above floor standing compression cage

Specifications

Force Range	50 kN (11240 lbf)
Crosshead Speed	0.1 to 250 mm/min (0.004 to 9.84 in/min)
Speed Accuracy	< 0.2% at steady state
Travel	855 mm (33.66 in)
Load Resolution	< 0.005% of loadcell used (Maximum)
Extension Resolution	< 0.1 micron
Data Sampling Rate	8 kHz
Extensometer Inputs	Digital and Analogue Extensometer
Data Outputs	Digital - RS232, Analogue - 10V dc max (Optional)
Load Measuring System	Exceeds the requirements of BS EN ISO 7500 1999, Class 0.5, ASTM E4, DIN 51221.
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	150 kg (330 lb)
Width Between Columns	400 mm (15.75 in)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

EZ50 Series Accessories

Loadcells		Availability	Part No.	Notes
XLC-0005-A1	5 N (1.12 lbf)	Optional	01/2946	
XLC-0010-A1	10 N (2.25 lbf)	Optional	01/2360	
XLC-0020-A1	20 N (4.5 lbf)	Optional	01/2950	
XLC-0050-A1	50 N (11.25 lbf)	Optional	01/2361	
XLC-0100-A1	100 N (22.5 lbf)	Optional	01/2480	
XLC-0250-A1	250 N (56.25 lbf)	Optional	01/3048	
XLC-0500-A1	500 N (112.5 lbf)	Optional	01/2362	
XLC-1000-A1	1000 N (225 lbf)	Optional	01/2419	
XLC-2500-A1	2500 N (562.5 lbf)	Optional	01/2363	
XLC-5000-A1	5000 N (1124 lbf)	Optional	01/2364	
XLC-10K-A1	10 kN (2248 lbf)	Optional	01/2365	
XLC-20K-A1	20 kN (4496 lbf)	Optional	01/2417	
XLC-30K-A1	30 kN (6744 lbf)	Optional	01/2366	
XLC-50K-A1	50 kN (11240 lbf)	Optional	01/2367	

Interface Cables	Availability	Part No.	Notes
RS232 Cable, 9 Pin	Standard	09/0639	Cable length 2 m (78.7 in)
RS232 Adapter, 9 Pin to 25 Pin	Optional	ADT/0140/00	For PC Interface
Cable, Control Console (External)	Standard	09/0710	

Application Software	Availability	Part No.	Notes
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	Availability	Part No.	Notes
Operators' Manual	Standard	01/2839	
Hex Key, 5mm (0.2 in)	Standard	92/0401	
Spanner Wrench, 42mm (1.65 in)	Standard	SPT/0244/00	
Anchor Pin, 5/8 in	Standard	PIN/0258/00	To be fitted to base of machine
Anchor Pin, 1⁄ in	Standard	PIN/0257/00	To be fitted to base of machine
Grip Pin, 5/8 in Eye End	Standard	PIT/0169/00	Secures grip to eye end on machine
Grip Pin, 1⁄ in Eye End	Standard	PIN/0061/00	Secures grip to eye end on machine
Loadcell Mounting Adapter, M12	Standard	ADT/0150/00	
Loadcell Mounting Adapter, M20	Standard	ADT/0151/00	
Splinter Shield	Optional	01/3095	With electrical interlock

LR50K Series

50 kN Universal Testing System

The LR50K is a bench mounted, twin column materials testing system providing a complete solution for testing applications up to 50 kN (11240 lbf).

The machine is microprocessor controlled and is operated from the integral control console which has large, positive action membrane switches to allow tests to be quickly and easily performed. A large LCD display shows the test and setup information in English, French, German, Spanish, Italian, Danish or Japanese.

The high stiffness frame incorporates a crosshead guidance system to prevent side loading of the sample under test. A high resolution encoder is used to measure sample extension as well as providing high accuracy speed control. The crosshead is driven by a high precision servo motor and DC servo system to achieve a wide range of speeds throughout the full load range.

The LR50K performance can be further enhanced with our NEXYGEN™ MT materials test and data analysis software. The system is ideal for use in production, quality control, educational and research environments.

Features

- Simple to set up, operate and maintain
- High accuracy load measurement (0.5% of reading)
- Rapid data acquisition
- Extension resolution < 0.1 micron
- Exceeds national and international standards
- Multi lingual display options
- Multi unit display options
- Full PC integration
- Wide selection of loadcells, grips, jigs and accessories

LR50K Series Ordering Information

Model	Part No.	Capacity	Description
LR50K	01/2535	50 kN (11240 lbf)	LR50K with console
LR50K-E	01/2869	50 kN (11240 lbf)	LR50K Extended column with console
LR50K-CC	01/2700	50 kN (11240 lbf)	LR50K Pogo design* with console

* Note “Pogo Design” denotes machine designed to perform tests mounted above floor standing compression cage

Specifications

Force Range	50 kN (11240 lbf)
Crosshead Speed	0.01 to 510 mm/min (0.0004 to 20.08 in/min)
Speed Accuracy	< 0.2% at steady state
Travel	
LR50K	855 mm (33.66 in)
LR50K-E	1400 mm (55.12 in)
Load Resolution	< 0.005% of loadcell used (Maximum)
Extension Resolution	< 0.1 micron
Data Sampling Rate	100 Hz
Extensometer Inputs	
Standard	0 - 10 V dc analogue
Optional	0 - 1V dc analogue input and strain gauge (Requires Amplifier Kit P/N 01/1966)
Data Outputs	Digital - RS232, Analogue - 10V dc max (Optional)
Load Measuring System	Exceeds the requirements of BS EN ISO 7500 1999, Class 0.5, ASTM E4, DIN 51221.
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	200 kg (440 lb)
Width Between Columns	400 mm (15.75 in)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

LR50K Series Accessories

Loadcells		**Availability**	**Part No.**	**Notes**
XLC-0005-A1	5 N (1.12 lbf)	Optional	01/2946	
XLC-0010-A1	10 N (2.25 lbf)	Optional	01/2360	
XLC-0020-A1	20 N (4.5 lbf)	Optional	01/2950	
XLC-0050-A1	50 N (11.25 lbf)	Optional	01/2361	
XLC-0100-A1	100 N (22.5 lbf)	Optional	01/2480	
XLC-0250-A1	250 N (56.25 lbf)	Optional	01/3048	
XLC-0500-A1	500 N (112.5 lbf)	Optional	01/2362	
XLC-1000-A1	1000 N (225 lbf)	Optional	01/2419	
XLC-2500-A1	2500 N (562.5 lbf)	Optional	01/2363	
XLC-5000-A1	5000 N (1124 lbf)	Optional	01/2364	
XLC-10K-A1	10 kN (2248 lbf)	Optional	01/2365	
XLC-20K-A1	20 kN (4496 lbf)	Optional	01/2417	
XLC-30K-A1	30 kN (6744 lbf)	Optional	01/2366	
XLC-50K-A1	50 kN (11240 lbf)	Optional	01/2367	

Interface Cables	**Availability**	**Part No.**	**Notes**
RS232 Cable, 9 Pin	Standard	09/0311	Cable length 2 m (78.7 in)
RS232 Adapter, 9 Pin to 25 Pin	Optional	ADT/0140/00	For PC Interface

Application Software	**Availability**	**Part No.**	**Notes**
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	**Availability**	**Part No.**	**Notes**
Operators' Manual	Standard	01/1934	
Hex Key, 5 mm (0.2 in)	Standard	92/0293	
Spanner Wrench, 42 mm (1.65 in)	Standard	SPT/0244/00	
Anchor Pin, 5/8 in	Standard	PIN/0258/00	To be fitted to base of machine
Anchor Pin, 1⁄ in	Standard	PIN/0257/00	To be fitted to base of machine
Grip Pin, 5/8 in Eye End	Standard	PIT/0169/00	Secures grip to eye end on machine
Grip Pin, 1⁄ in Eye End	Standard	PIN/0061/00	Secures grip to eye end on machine
Loadcell Mounting Adapter, M12	Standard	ADT/0150/00	
Loadcell Mounting Adapter, M20	Standard	ADT/0151/00	
Splinter Shield	Optional	01/1972	With electrical interlock

LS100 Series

100 kN Universal Testing System

This twin column, bench mounted system provides a complete solution for testing applications up to 100 kN (22480 lbf).

Tension and compression testing with cycling to load and extension limits are standard features. Load and extension are displayed on a highly legible LCD display, selectable in a variety of units. Multi lingual instructions are displayed in a sequential menu driven format, allowing setup and operation to be achieved rapidly and efficiently. A dedicated microprocessor controlled, closed loop servo drive ensures accurate speed, load rate and constant load.

A working test space between columns of 400 mm (15.75 in) combined with a total crosshead displacement of 840 mm (33.07 in) can accommodate a wide variety of samples and materials for accurate and consistent testing.

The LS100 performance can be further enhanced with our NEXYGEN™ MT state of the art materials test and data analysis software. The system is ideal for use in production, quality control, educational and research environments.

Features

- Simple to set up, operate and maintain
- Exceeds national and international standards
- Constant load
- High resolution throughout extension range
- Large testing area
- Multi lingual display options
- Multi unit display options
- Rapid, menu driven test setup
- Full PC integration
- Wide selection of loadcells, grips, jigs and accessories
- Extension resolution < 0.1 micron

LS100 Series Ordering Information

Model	Part No.	Description
LS100	01/2890	Twin column, Bench mounted Materials Testing System

Specifications

Force Range	100 kN (22480 lbf)
Crosshead Speed	
Up to 50 kN (1124 lbf)	0.01 to 255 mm/min (0.0004 to 10.04 in/min)
Up to 100 kN (2248 lbf)	0.01 to 100 mm/min (0.0004 to 3.94 in/min)
Speed Accuracy	< 0.2% at steady state
Travel	840 mm (33 in)
Load Resolution	< 0.01% of loadcell used (Maximum)
Extension Resolution	< 0.1 micron
Data Sampling Rate	100 Hz
Extensometer Inputs	
Standard	0 - 10V dc analogue
Optional	0 - 1V dc analogue input and strain gauge (Requires Amplifier Kit P/N 01/1966)
Data Outputs	Digital - RS232, Analogue - 10V dc max
Load Measuring System	Exceeds the requirements of BS EN ISO 7500 1999, Class 0.5, ASTM E4, DIN 51221.
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	230 kg (440 lb)
Width Between Columns	400 mm (15.75 in)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

LS100 Series Accessories

Loadcells		**Availability**	**Part No.**	**Notes**
XLC-0005-A1	5 N (1.12 lbf)	Optional	01/2946	
XLC-0010-A1	10 N (2.25 lbf)	Optional	01/2360	
XLC-0020-A1	20 N (4.5 lbf)	Optional	01/2950	
XLC-0050-A1	50 N (11.25 lbf)	Optional	01/2361	
XLC-0100-A1	100 N (22.5 lbf)	Optional	01/2480	
XLC-0250-A1	250 N (56.25 lbf)	Optional	01/3048	
XLC-0500-A1	500 N (112.5 lbf)	Optional	01/2362	
XLC-1000-A1	1000 N (225 lbf)	Optional	01/2419	
XLC-2500-A1	2500 N (562.5 lbf)	Optional	01/2363	
XLC-5000-A1	5000 N (1124 lbf)	Optional	01/2364	
XLC-10K-A1	10 kN (2248 lbf)	Optional	01/2365	
XLC-20K-A1	20 kN (4496 lbf)	Optional	01/2417	
XLC-30K-A1	30 kN (6744 lbf)	Optional	01/2366	
XLC-50K-A1	50 kN (11240 lbf)	Optional	01/2367	
XLC-100K-A1	100 kN (22480 lbf)	Optional	01/2896	

Interface Cables	**Availability**	**Part No.**	**Notes**
RS232 Cable, 9 pin	Standard	09/0311	Cable length 2 m (78.7 in)
RS232 Adapter, 9 pin to 25 Pin	Optional	ADT/0140/00	For PC Interface

Application Software	**Availability**	**Part No.**	**Notes**
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	**Availability**	**Part No.**	**Notes**
Operators' Manual	Standard	01/1934	
Hex Key, 5mm (0.2 in)	Standard	92/0293	
Spanner Wrench, 42mm (1.65 in)	Standard	SPT/0244/00	
Spanner Wrench, 70mm (2.76 in)	Standard	SPT/0243/00	
Anchor Pin, 5/8 in	Standard	PIN/0415/00	To be fitted to base of machine
Anchor Pin, 1⁄ in	Standard	PIN/0412/00	To be fitted to base of machine
Grip Pin, 5/8 in Eye End	Standard	PIT/0169/00	Secures grip to eye end on machine
Grip Pin, 1⁄ in Eye End	Standard	PIN/0061/00	Secures grip to eye end on machine
Loadcell Mounting Adapter, M12	Standard	ADT/0150/00	
Loadcell Mounting Adapter, M20	Standard	ADT/0151/00	
Loadcell Mounting Adaptor, M24	Standard	ADT/0258/00	
Splinter Shield	Optional	01/1972	With electrical interlock

LR100K Series

100 kN Universal Testing System

The LR100K twin column materials testing system provides a complete solution for testing applications up to 100 kN (22480 lbf).

Tension and compression testing with cycling to load and extension limits are standard features. Load and extension are displayed on a highly legible LCD display, selectable in a variety of units. Multi-lingual instructions are displayed in a sequential menu driven format, allowing setup and operation to be achieved rapidly and efficiently. A working test space between columns of 620 mm (24.41 in) combined with a total crosshead displacement of 1200 mm (47.24 in) can accommodate a wide variety of samples and materials for accurate and consistent testing.

The LR100K can be further enhanced with our NEXYGEN™ MT materials test and data analysis software. The system is ideal for use in production, quality control, educational and research environments.

Features

- Simple to set up, operate and maintain
- High accuracy load measurement (0.5% of reading)
- Rapid data acquisition
- Extension resolution better than 0.1 micron
- Exceeds national and international standards
- Constant load
- Large testing area
- Multi lingual display options
- Multi unit display options
- Full PC integration
- Wide selection of load cells, grips, jigs and accessories
- Pre loaded leadscrews

LR100K Series Ordering Information

Model	Part No.	Description
LR100K	01/2177	Twin column, Floor mounted Materials Testing System

Specifications

Force Range	100 kN (22480 lbf)
Crosshead Speed	0.01 to 510 mm/min (0.0004 to 20.08 in/min)
Speed Accuracy	< 0.2% at steady state
Travel	1150 mm (45.28 in)
Load Resolution	< 0.005% of loadcell used (Maximum)
Extension Resolution	< 0.1 micron
Data Sampling Rate	100 Hz
Extensometer Inputs	
Standard	0 - 10V dc analogue
Standard	0 - 1V dc analogue input and strain gauge
Data Outputs	Digital - RS232, Analogue - 10V dc max
Load Measuring System	Exceeds the requirements of BS EN ISO 7500 1999, Class 0.5, ASTM E4, DIN 51221.
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	900 kg (1984 lb)
Width Between Columns	620 mm (24.41 in)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

LR100K Series Accessories

Loadcells		Availability	Part No.	Notes
HLC-0050-A1	50 N (11.25 lbf)	Optional	01/2936	
HLC-0100-A1	100 N (22.5 lbf)	Optional	01/2413	
HLC-1000-A1	1000 N (225 lbf)	Optional	01/2412	
HLC-5000-A1	5000 N (1124 lbf)	Optional	01/2944	
HLC-10K-A1	10 kN (2248 lbf)	Optional	01/2411	
HLC-30K-A1	30 kN (6744 lbf)	Optional	01/2978	
HLC-100K-A1	100 kN (22480 lbf)	Optional	01/2457	Loadcell permanently fixed to the machine

Interface Cables	Availability	Part No.	Notes
RS232 Cable, 9 Pin	Standard	09/0311	Cable length 2 m (78.7 in)
RS232 Adapter, 9 Pin to 25 Pin	Optional	ADT/0140/00	For PC Interface

Application Software	Availability	Part No.	Notes
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	Availability	Part No.	Notes
Operators' Manual	Standard	01/1934	
Hex Key, 5 mm (0.2 in)	Standard	92/0293	
Spanner Wrench, 42 mm (1.65 in)	Standard	SPT/0244/00	
Spanner Wrench, 70 mm (2.76 in)	Standard	SPT/0243/00	
Anchor Pin, 5/8 in	Standard	ADT/0118/00	To be fitted to base of machine
Anchor Pin, 1⁄ in	Standard	ADT/0117/00	To be fitted to base of machine
Grip Pin, 5/8 in Eye End	Standard	PIT/0169/00	Secures grip to eye end on machine
Grip Pin, 1⁄ in Eye End	Standard	PIN/0061/00	Secures grip to eye end on machine
Loadcell Alignment Tube	Standard	TBE/0019/00	Used to align loadcell
Compression Boss	Standard	BOT/0385/00	Adapter to mount compression platen to machine base
Splinter Shield	Optional	01/2995	Without electrical interlock
Splinter Shield	Optional	01/3109	With electrical interlock

LR150K Series

150 kN Universal Testing System

The LR150K twin column materials testing system provides a complete solution for testing applications up to 150 kN (33721 lbf).

Tension and compression testing with cycling to load and extension limits are standard features. Load and extension are displayed on a highly legible LCD display, selectable in a variety of units. Multi lingual instructions are displayed in a sequential menu driven format, allowing setup and operation to be achieved rapidly and efficiently. A working test space between columns of 620 mm (24.41 in) combined with a total crosshead displacement of 1100 mm (43.31 in) can accommodate a wide variety of samples and materials for accurate and consistent testing.

The LR150K can be further enhanced with our NEXYGEN™ MT materials test and data analysis software. The system is ideal for use in production, quality control, educational and research environments.

Features

- Simple to set up, operate and maintain
- High accuracy load measurement (0.5% of reading)
- Rapid data acquisition
- Extension resolution better than 0.1 micron
- Exceeds national and international standards
- Constant load
- Large testing area
- Multi lingual display options
- Multi unit display options
- Full PC integration
- Wide selection of load cells, grips, jigs and accessories
- Pre loaded leadscrews

LR150K Series Ordering Information

Model	Part No.	Description
LR150K	01/2262	Twin column, Floor mounted Materials Testing System

Specifications

Force Range	150 kN (33721 lbf)
Crosshead Speed	0.01 to 255 mm/min (0.0004 to 10.04 in/min)
Speed Accuracy	< 0.1% at steady state
Travel	1050 mm (41.34 in)
Load Resolution	< 0.005% of loadcell used (Maximum)
Extension Resolution	< 0.1 micron
Data Sampling Rate	100Hz
Extensometer Inputs	
Standard	0 - 10V dc analogue
Standard	0 - 1V dc analogue input and strain gauge
Data Outputs	Digital - RS232, Analogue - 10V dc max
Load Measuring System	Exceeds the requirements of BS EN ISO 7500 1999, Class 0.5, ASTM E4, DIN 51221.
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	1000 kg (2204 lb)
Width Between Columns	620 mm (24.41 in)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

LR150K Series Accessories

Loadcells		Availability	Part No.	Notes
HLC-0050-A1	50 N (11.25 lbf)	Optional	01/2936	
HLC-0100-A1	100 N (22.5 lbf)	Optional	01/2413	
HLC-1000-A1	1000 N (225 lbf)	Optional	01/2412	
HLC-5000-A1	5000 N (1124 lbf)	Optional	01/2944	
HLC-10K-A1	10 kN (2248 lbf)	Optional	01/2411	
HLC-30K-A1	30 kN (6744 lbf)	Optional	01/2978	
HLC-150K-A1	150 kN (33721 lbf)	Optional	01/2458	Loadcell permanently fixed to the machine

Interface Cables	Availability	Part No.	Notes
RS232 Cable, 9 Pin	Standard	09/0311	Cable length 2 m (78.7 in)
RS232 Adapter, 9 Pin to 25 Pin	Optional	ADT/0140/00	For PC Interface

Application Software	Availability	Part No.	Notes
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	Availability	Part No.	Notes
Operators' Manual	Standard	01/1934	
Hex Key, 5 mm (0.2 in)	Standard	92/0293	
Spanner Wrench, 42 mm (1.65 in)	Standard	SPT/0244/00	
Spanner Wrench, 70 mm (2.76 in)	Standard	SPT/0243/00	
Eye End, 50 mm (1.97 in)	Standard	EET/0080/00	
Grip Pin, 50 mm Eye End	Standard	PIN/0343/00	Secures grip to eye end on machine
Grip Pin, 5/8 in Eye End	Standard	PIT/0169/00	Secures grip to eye end on machine
Grip Pin, 1⁄ in Eye End	Standard	PIN/0061/00	Secures grip to eye end on machine
Adapter, 5/8 in	Standard	ADT/0118/00	To be fitted to base of machine
Adapter, 1⁄ in	Standard	ADT/0117/00	To be fitted to base of machine
Loadcell Alignment Tube	Standard	TBE/0019/00	Used to align loadcell
Compression Boss	Standard	BOT/0385/00	Adapter to mount compression platen to machine base
Splinter Shield	Optional	01/2995	Without electrical interlock
Splinter Shield	Optional	01/3109	With electrical interlock

LR300K Series

300 kN Universal Testing System

The LR300K twin column materials testing system provides a complete solution for testing applications up to 300 kN (67442 lbf).

Tension and compression testing with cycling to load and extension limits are standard features. Load and extension are displayed on a highly legible LCD display, selectable in a variety of units. Multi lingual instructions are displayed in a sequential menu driven format, allowing setup and operation to be achieved rapidly and efficiently. A dedicated microprocessor controlled, closed loop servo drive ensures accurate speed, load rate and constant load. A working test space between columns of 620 mm (24.41 in) combined with a total crosshead displacement of 1200 mm (47.24 in) can accommodate a wide variety of samples and materials for accurate and consistent testing.

The LR300K can be further enhanced with our NEXYGEN™ MT materials test and data analysis software. The system is ideal for use in production, quality control, educational and research environments.

Features

- Simple to set up, operate and maintain
- High accuracy load measurement (0.5% of reading)
- Rapid data acquisition
- Extension resolution better than 0.1 micron
- Capable of full load at full speed
- Exceeds national and international standards
- Constant load
- Large working area
- Multi lingual display options
- Multi unit display options
- Full PC integration
- Wide selection of load cells, grips, jigs & accessories
- Pre loaded leadscrews

LR300K Series Ordering Information

Model	Part No.	Description
LR300K	01/2338	Twin column, Floor mounted Materials Testing System

Specifications

Force Range	300 kN (67442 lbf)
Crosshead Speed	0.01 to 255 mm/min (0.0004 to 10.04 in/min)
Speed Accuracy	< 0.1% at steady state
Travel	1250 mm (49.21 in)
Load Resolution	< 0.005% of loadcell used (Maximum)
Extension Resolution	< 0.1 micron
Data Sampling Rate	100 Hz
Extensometer Inputs	
Standard	0 - 10V dc analogue
Standard	0 - 1V dc analogue input and Strain Gauge
Data Outputs	Digital - RS232, Analogue - 10V dc max
Load Measuring System	Exceeds the requirements of BS EN ISO 7500 1999, Class 0.5, ASTM E4, DIN 51221.
Analysis Software	NEXYGEN MT Data Analysis Software and Ondio™ Applications Builder Software (Optional)
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	1200 kg (2645 lb)
Width Between Columns	620 mm (24.41 in)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

LR300K Series Accessories

Loadcells		Availability	Part No.	Notes
HLC-0050-A1	50 N (11.25 lbf)	Optional	01/2936	
HLC-0100-A1	100 N (22.5 lbf)	Optional	01/2413	
HLC-1000-A1	1000 N (225 lbf)	Optional	01/2412	
HLC-5000-A1	5000 N (1124 lbf)	Optional	01/2944	
HLC-10K-A1	10 kN (2248 lbf)	Optional	01/2411	
HLC-30K-A1	30 kN (6744 lbf)	Optional	01/2978	
HLC-300K-A1	300 kN (67442 lbf)	Optional	01/2392	Loadcell permanently fixed to the machine

Interface Cables	Availability	Part No.	Notes
RS232 Cable, 9 Pin	Standard	09/0311	Cable length 2 m (78.7 in)
RS232 Adapter, 9 Pin to 25 Pin	Optional	ADT/0140/00	For PC Interface

Application Software	Availability	Part No.	Notes
NEXYGEN MT Software	Optional	40/0658	
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	

Miscellaneous	Availability	Part No.	Notes
Operators' Manual	Standard	01/1934	
Hex Key, 5 mm (0.2 in)	Standard	92/0406	
Spanner Wrench, 42 mm (1.65 in)	Standard	SPT/0244/00	
Spanner Wrench, 70 mm (2.76 in)	Standard	SPT/0243/00	
Eye End, 50 mm (1.97 in)	Standard	EET/0083/00	
Grip Pin, 50 mm Eye End	Standard	PIN/0365/00	Secures grip to eye end on machine
Grip Pin, 5/8 in Eye End	Standard	PIT/0169/00	Secures grip to eye end on machine
Grip Pin, 1⁄ in Eye End	Standard	PIN/0061/00	Secures grip to eye end on machine
Adapter, 5/8 in	Standard	ADT/0168/00	To be fitted to base of machine
Adapter, 1⁄ in	Standard	ADT/0169/00	To be fitted to base of machine
Loadcell Alignment Tube	Standard	TBE/0027/00	Used to align loadcell
Compression Boss	Standard	BOT/0396/00	Adapter to mount compression platen to machine base

SP Series

Servo Pneumatic Dynamic Testing Machine

The SP Series servo pneumatic testing machine offers highly efficient, rapid and reliable testing . It is ideally suited to laboratory, production or clinical environments where efforts to restrict noise and contamination levels are paramount. Ideal for investigating the fatigue properties of a sample when applying cyclic loading, the system is capable of performing rigorous fatigue tests at up to 40 Hz at 2 kN (450 lbf), 10 Hz at 10 kN (2248 lbf).

The machine consists of a sliding, fully adjustable crosshead which is clamped by pinch bolts to twin chromed solid steel columns. The crosshead is set prior to testing and can accommodate samples of varying dimensions. A servo pneumatic actuator is mounted to the crosshead, with a specially designed loadcell which can be fixed to either the base or the crosshead. The sample is secured between the solid base and actuator rod by a comprehensive range of grips, jigs and fixtures.

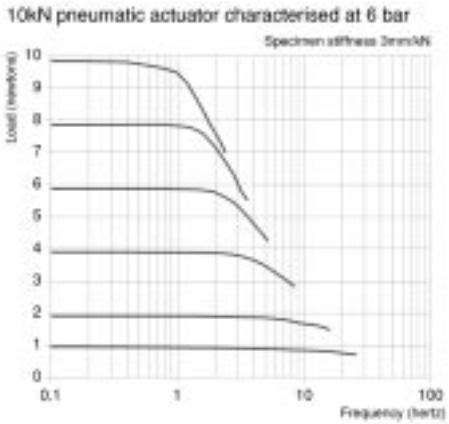
The system is controlled by a personal computer (not included), using specialist Microsoft® Windows® compatible testing software. It also contains its own embedded RISC processor and digital controller ensuring dynamic tests continue to run even in the absence of a computer.

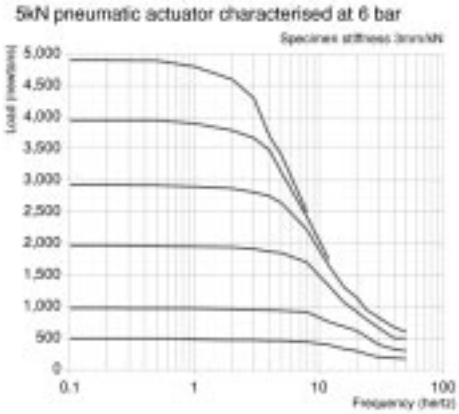
By using durable components and ensuring test routines run quietly and smoothly, maintenance is kept to a minimum. Integral safety features include an adjustable safety collar to prevent the crosshead from falling when slackened, large base mounted emergency cut-off switch and an optional splinter shield is available. The machine uses its compressed air supply to dissipate heat generated during prolonged testing.

Features

- Efficient, responsive servo grade pneumatic actuator, runs from filtered workshop or bottled air supply
- 10 kN frame with twin solid steel, chromed columns designed for tension, compression and flexure tests
- Fatigue rated loadcell with side load and torque resistance
- Integral loadcell amplifier with high signal to noise ratio
- Integral displacement transducer working directly on rear end of actuator rod
- Digital controller with an embedded RISC processor providing operational stability
- Safety features including crosshead stopping collar, optional splinter shield and emergency isolator switch
- Extensive range of grips and fixtures
- Full computer integration with Windows® compatible control and data acquisition software

Performance Graphs





SP Series Ordering Information

Model	Part No.	Capacity	Stroke	Description
SP2	01/3022	2 kN (450 lbf)	50 mm (1.97 in)	Servo Pneumatic Bench Top System
SP2	01/3023	2 kN (450 lbf)	100 mm (3.94 in)	Servo Pneumatic Bench Top System
SP5	01/3024	5 kN (1124 lbf)	50 mm (1.97 in)	Servo Pneumatic Bench Top System
SP5	01/3025	5 kN (1124 lbf)	100 mm (3.94 in)	Servo Pneumatic Bench Top System
SP10	01/3026	10 kN (2248 lbf)	50 mm (1.97 in)	Servo Pneumatic Bench Top System
SP10	01/3027	10 kN (2248 lbf)	100 mm (3.94 in)	Servo Pneumatic Bench Top System

Specifications

Standard Force Range	
SP2	2 kN (450 lbf)
SP5	5 kN (1124 lbf)
SP10	10 kN (2248 lbf)
Stroke	
Optional	50 mm (1.97 in)
Optional	100 mm (3.94 in)
Pneumatic Supply	Between 5 and 10 bar (400 l/min - 14 CU FT/min, min free air discharge)
Machine Height	1272 mm (50.08 in)
Maximum Working Width	405 mm (15.94 in)
Maximum Working Length	650 mm (25.59 in)
Dynamic Frequency	From static up to 40 Hz (Depending on stroke and load used)
Data Outputs	Digital - RS232
Testing Standards	Meets all common fatigue testing standards within constraints of machine capacity
Application Software	NEXYGEN™ MT Data Analysis Software (For static testing only) Windows® Dynamic Testing Software
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	235 kg (518 lb)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

SP Series Accessories

Application Software	Availability	Part No.	Notes
Windows® Dynamic Testing Software	Standard	40/0742	
NEXYGEN MT Software	Optional	40/0658	For static testing only
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	For static testing only

Miscellaneous	Availability	Part No.	Notes
Operators' Manual	Standard	01/3112	Supplied with machine
Adapter, M12 to 5/8 in	Standard	PIN/0438/00	For fitting grips to machine
Adapter, M12 to 1⁄2 in	Standard	ADT/0273/00	For fitting grips to machine
Safety Shield	Optional	01/3040	Without electrical interlock
Woods Melt Pot	Optional	01/3070	

SH-B Series

Servo Hydraulic Dynamic Testing Machine

The SH-B series Servo Hydraulic Testing machine offers highly efficient, rapid and reliable testing. The system is capable of performing rigorous fatigue tests at up to 70 Hz at full load.

The machine is bench mounted and consists of a sliding, fully adjustable crosshead which is clamped by pinch bolts to twin chromed solid steel columns. The crosshead is set prior to testing and can accommodate samples of varying dimensions. A dynamically rated actuator is mounted to the crosshead, available in various force capacities and stroke for optimum dynamic response. A specially designed loadcell is fixed to either the base or the crosshead for added testing versatility. The sample is secured between the solid base and actuator rod by a comprehensive range of grips, jigs and fixtures.

The system is controlled by a personal computer (not included), using specialist Microsoft® Windows® compatible testing software, and also contains its own embedded RISC processor and digital controller ensuring tests run smoothly even in the event of computer failure or disconnection. Integral safety features include an adjustable safety collar to prevent the crosshead from slipping when adjusted, large base mounted emergency cut-off switch and an optional splinter shield is available.

Features

- Efficient, responsive servo grade hydraulic actuator, specified for optimum dynamic response
- 25 kN frame with twin solid steel, chromed columns designed for tension, compression and flexure tests
- High speed testing, up to 70 Hz as standard
- Fatigue rated loadcell with side load and torque resistance
- Integral loadcell amplifier with high signal to noise ratio
- Integral displacement transducer working directly on rear end of actuator rod
- Digital controller with an embedded RISC processor providing operational stability
- Safety features including crosshead stopping collar, optional splinter shield and emergency isolator switch
- Extensive range of grips and fixtures
- Full computer integration with Windows® compatible control and data acquisition software

Hydraulic power pack

Specifications

Standard Force Range	
SH-B5	5 kN (1124 lbf)
SH-B10	10 kN (2248 lbf)
SH-B25	25 kN (5620 lbf)
Stroke	
Optional	25 mm (0.98 in)
Optional	50 mm (1.97 in)
Optional	100 mm (3.94 in)
Hydraulic Supply	210 bar
Machine Height	1272 mm (50.08 in)
Maximum Working Width	405 mm (15.94 in)
Maximum Working Length	650 mm (25.59 in)
Dynamic Frequency	From static up to 70 Hz (standard) depending on capacity of the hydraulic pump
Data Outputs	Digital - RS232
Testing Standards	Meets all common fatigue testing standards within constraints of machine capacity
Application Software	NEXYGEN™ MT Data Analysis Software (For static testing only)
	Windows® Dynamic Testing Software
Supply Voltage	115/230 V ac ± 10% 50 - 60 Hz
Weight	235 Kg (518 lb)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

SH-B Series Ordering Information

Model	Part No.	Capacity	Stroke	Description
SH-B5	01/3013	5 kN (1124 lbf)	25 mm (0.98 in)	Servo Hydraulic Bench Top System
SH-B5	01/3014	5 kN (1124 lbf)	50 mm (1.97 in)	Servo Hydraulic Bench Top System
SH-B5	01/3015	5 kN (1124 lbf)	100 mm (3.94 in)	Servo Hydraulic Bench Top System
SH-B10	01/3016	10 kN (2248 lbf)	25 mm (0.98 in)	Servo Hydraulic Bench Top System
SH-B10	01/3017	10 kN (2248 lbf)	50 mm (1.97 in)	Servo Hydraulic Bench Top System
SH-B10	01/3018	10 kN (2248 lbf)	100 mm (3.94 in)	Servo Hydraulic Bench Top System
SH-B25	01/3019	25 kN (5620 lbf)	25 mm (0.98 in)	Servo Hydraulic Bench Top System
SH-B25	01/3020	25 kN (5620 lbf)	50 mm (1.97 in)	Servo Hydraulic Bench Top System
SH-B25	01/3021	25 kN (5620 lbf)	100 mm (3.94 in)	Servo Hydraulic Bench Top System

Hydraulic Power Pack Ordering Information

Part Number	Power Usage	Volume	Delivery System
01/3028	3 kW	8 l/min (2.1 gal/min)	Fixed
01/3066	5.5 kW	14 l/min (3.7 gal/min)	Fixed
01/3029	7.5 kW	20 l/min (5.3 gal/min)	Fixed
01/3030	11 kW	30 l/min (7.9 gal/min)	Fixed
01/3031	15 kW	40 l/min (10.6 gal/min)	Fixed
01/3067	7.5 kW	20 l/min (5.3 gal/min)	Variable
01/3068	11 kW	30 l/min (7.9 gal/min)	Variable
01/3069	15 kW	40 l/min (10.6 gal/min)	Variable

Servo Valve Ordering Information

Part Number	Description
01/3032	5 l/min (1.3 gal/min) Hydraulic Servo Valve
01/3033	10 l/min (2.6 gal/min) Hydraulic Servo Valve
01/3034	20 l/min (5.3 gal/min) Hydraulic Servo Valve
01/3035	40 l/min (10.6 gal/min) Hydraulic Servo Valve

SH-B Series Accessories

Application Software	Availability	Part No.	Notes
Windows® Dynamic Testing Software	Standard	40/0742	
NEXYGEN MT Software	Optional	40/0658	For static testing only
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	For static testing only

Miscellaneous	Availability	Part No.	Notes
Operators' Manual	Standard	01/3113	Supplied with machine
Adapter, M12 to 5/8 in	Standard	PIN/0438/00	For fitting grips to machine
Adapter, M12 to 1⁄ in	Standard	ADT/0273/00	For fitting grips to machine
Safety Shield	Optional	01/3040	Without electrical interlock
Woods Melt Pot	Optional	01/3070	

SH-F Series

Floor Mounted Servo Hydraulic Dynamic Testing Machine

The SH-F series Servo Hydraulic Floor Mounted Testing machine offers highly efficient, rapid and reliable testing. The system is capable of performing rigorous fatigue tests at up to 70 Hz at full load.

The machine consists of a sliding, fully adjustable crosshead which is clamped by pinch bolts to twin chromed solid steel columns. Optional side lifting rams are available for automatic crosshead adjustment. The crosshead is set prior to testing and can accommodate samples of varying dimensions. A dynamically rated actuator is mounted to the cross head, available in various force capacities and stroke for optimum dynamic response. A specially designed, highly accurate loadcell is fixed to the crosshead. The sample is secured between the solid base and actuator rod by a comprehensive range of grips, jigs and fixtures.

The system is controlled by a personal computer (not included), using specialist Microsoft® Windows® compatible testing software, and also contains its own embedded RISC processor and digital controller ensuring tests run smoothly even in the event of computer failure or disconnection. Integral safety features include an adjustable safety collar to prevent the crosshead from slipping when adjusted, emergency cut-off switch and an optional splinter shield.

- Testing Artificial Limbs

Features

- Efficient, responsive servo grade hydraulic actuator, specified for optimum dynamic response
- 100kN frame with twin solid steel, chromed columns designed for tension, compression and flexure tests
- High speed testing, up to 70 Hz as standard
- Fatigue rated loadcell with side load and torque resistance
- Integral loadcell amplifier with high signal to noise ratio
- Integral displacement transducer working directly on rear end of actuator rod
- Digital controller with an embedded RISC processor providing operational stability
- Safety features including crosshead stopping collar, optional splinter shield and emergency isolator switch
- Extensive range of grips and fixtures
- Full computer integration with Windows® compatible control and data acquisition software

Specifications

Standard Force Range	
SH-F25	25 kN (5620 lbf)
SH-F50	50 kN (11240 lbf)
SH-F100	100 kN (22480 lbf)
Stroke	
Optional	25 mm (0.98 in)
Optional	50 mm (1.97 in)
Optional	100 mm (3.94 in)
Hydraulic Supply	210 bar
Machine Height	2250 mm (88.58 in)
Maximum Working Width	500 mm (19.68 in)
Maximum Working Length	900 mm (35.43 in)
Dynamic Frequency	From static up to 70 Hz (standard) depending on capacity of the hydraulic pump
Data Outputs	Digital - RS232
Testing Standards	Meets all common fatigue testing standards within constraints of machine capacity
Application Software	NEXYGEN™ MT Data Analysis Software (For static testing only)
	Windows® Dynamic Testing Software
Supply Voltage	115/230V ac ± 10% 50 - 60 Hz
Weight	1200 kg (2645 lb)
Operating Temp	5° to 35°C (40°F to 95°F)
Warranty	1 Year

SH-F Series Ordering Information

Model	Part No.	Capacity	Stroke	Description
SH-F25	01/3004	25 kN (5620 lbf)	25 mm (0.98 in)	Servo Hydraulic Floor Mounted System
SH-F25	01/3005	25 kN (5620 lbf)	50 mm (1.97 in)	Servo Hydraulic Floor Mounted System
SH-F25	01/3006	25 kN (5620 lbf)	100 mm (3.94 in)	Servo Hydraulic Floor Mounted System
SH-F50	01/3007	50 kN (11240 lbf)	25 mm (0.98 in)	Servo Hydraulic Floor Mounted System
SH-F50	01/3008	50 kN (11240 lbf)	50 mm (1.97 in)	Servo Hydraulic Floor Mounted System
SH-F50	01/3009	50 kN (11240 lbf)	100 mm (3.94 in)	Servo Hydraulic Floor Mounted System
SH-F100	01/3010	100 kN (22480 lbf)	25 mm (0.98 in)	Servo Hydraulic Floor Mounted System
SH-F100	01/3011	100 kN (22480 lbf)	50 mm (1.97 in)	Servo Hydraulic Floor Mounted System
SH-F100	01/3012	100 kN (22480 lbf)	100 mm (3.94 in)	Servo Hydraulic Floor Mounted System

Hydraulic Power Pack Ordering Information

Part Number	Power Usage	Volume	Delivery System
01/3028	3 kW	8 l/min (2.1 gal/min)	Fixed
01/3066	5.5 kW	14 l/min (3.7 gal/min)	Fixed
01/3029	7.5 kW	20 l/min (5.3 gal/min)	Fixed
01/3030	11 kW	30 l/min (7.9 gal/min)	Fixed
01/3031	15 kW	40 l/min (10.6 gal/min)	Fixed
01/3067	7.5 kW	20 l/min (5.3 gal/min)	Variable
01/3068	11 kW	30 l/min (7.9 gal/min)	Variable
01/3069	15 kW	40 l/min (10.6 gal/min)	Variable

Servo Valve Ordering Information

Part Number	Description
01/3032	5 l/min (1.3 gal/min) Hydraulic Servo Valve
01/3033	10 l/min (2.6 gal/min) Hydraulic Servo Valve
01/3034	20 l/min (5.3 gal/min) Hydraulic Servo Valve
01/3035	40 l/min (10.6 gal/min) Hydraulic Servo Valve

SH-F Series Accessories

Application Software	Availability	Part No.	Notes
Windows® Dynamic Testing Software	Standard	40/0742	
NEXYGEN MT Software	Optional	40/0658	For static testing only
NEXYGEN MT/ONDIO Software Suite	Optional	40/0695	For static testing only

Miscellaneous	Availability	Part No.	Notes
Operators' Manual	Standard	01/3114	Supplied with machine
Adapter, M12 to 5/8 in	Standard	PIN/0438/00	For fitting grips to machine
Adapter, M12 to 1⁄ in	Standard	ADT/0273/00	For fitting grips to machine
Safety Shield	Optional	01/3041	Without electrical interlock
Woods Melt Pot	Optional	01/3070	
Hydraulic Side Lifting Rams	Optional	01/3036	For moving crosshead position

Loadcell and Lower Crosshead Eye Ends Chart

A cross reference chart indicating Adapters required to fit grips to different sized eye ends.

Position	5/8 inch Eye End	1⁄ inch Eye End	50 mm Eye End
5 N - 500 N Loadcell	Eye End EET/0088/00 Locking Rings (2) NTT/0139/00	Not Applicable	Not Applicable
1 kN - 10 kN Loadcell	Eye End PIN/0322/00 Locking Rings (2) NTT/0151/00	Adaptor Sleeve ADT/0030/00	Not Applicable Adaptor Sleeve
20 kN - 50 kN Loadcell	Eye End ADT/0153/00 Locking Rings (2) NTT/0150/00	Eye End ADT/0152/00 Locking Rings (2) NTT/0150/00	Not Applicable
100 kN Loadcell	Eye End ADT/0246/00 Locking Rings (2) NTT/0151/00	Eye End ADT/0244/00 Locking Rings (2) NTT/0178/00	Not Applicable
300 kN Loadcell	Eye End ADT/0118/00 Locking Rings (2) NTT/0144/00	Eye End ADT/0117/00 Locking Rings (2) NTT/0144/00	Eye End EET/0080/00 Locking Rings (2) NTT/0144/00
LR5K and LR10K Lower Fitting	Non Removable 5/8 inch fixing Locking Rings (2) NTT/0151/00	Adaptor Sleeve ADT/0030/00	Not Applicable
LRX*Plus* Lower Fitting	Eye End PIN/0322/00 Locking Rings (2) NTT/0151/00	Adaptor Sleeve ADT/0030/00	Not Applicable
EZ20 and EZ50 Lower Fitting	Eye End PIN/0258/00 Locking Rings (2) NTT/0151/00	Eye End PIN/0257/00 Locking Rings (2) NTT/0151/00	Not Applicable
LR30K Lower Fitting	Eye End PIN/0233/00 Locking Rings (2) NTT/0151/00	Eye End PIN/0234/00 Locking Rings (2) NTT/0151/00	Not Applicable
LR50K Lower Crosshead	Eye End PIN/0258/00 Locking Rings (2) NTT/0151/00	Eye End PIN/0257/00 Locking Rings (2) NTT/0151/00	Not Applicable
LS100 Lower Crosshead	Eye End PIN/0415/00 Locking Rings (2) NTT/0151/00	Eye End PIN/0412/00 Locking Rings (2) NTT/0178/00	Not Applicable
LR300K Lower Crosshead	Eye End ADT/0168/00 Locking Rings (2) NTT/0157/00	Eye End ADT/0169/00 Locking Rings (2) NTT/0157/00	Eye End EET/0083/00 Locking Rings (2) NTT/0157/00

Load Cells

LRX Series 5 N - 2500 N

A full bridge strain gauged loadcell complete with 4 pin plug adaptor for use with the LRX Series of machines. For *Plus* Series use XLC loadcells. The loadcell value and sensitivity factor shown on the loadcell label has to be entered on the LRX keypad before the loadcell can be used. The loadcells meet BS EN ISO 7500: 1999 and ASTM E4 for a ±0.5% accuracy loadcell. These standards state that the loadcell can be verified down to 2% of its load range at 0.5% accuracy of reading but can read down to zero load.

5N - 250N loadcells

500N - 2500N loadcells

Max Load (N)	Max Load (lbf)	Load Resolution (N)	Eye End Diameter (in)	Part No
5N	1.12 lbf	0.0004 N	5/8 in	01/2968
10 N	2.25 lbf	0.0004 N	5/8 in	01/2322
20N	4.5 lbf	0.0008 N	5/8 in	01/2600
50N	11.25 lbf	0.002 N	5/8 in	01/2321
100N	22.5 lbf	0.004 N	5/8 in	01/2320
250N	56.25 lbf	0.02 N	5/8 in	01/2992
500N	112.5 lbf	0.02 N	5/8 in	01/2164
1000N	225 lbf	0.04 N	5/8 in	01/2163
2500N	562.5 lbf	0.1 N	5/8 in	01/2131

XLC Series 5 N - 100 kN

A full bridge strain gauged loadcell complete with 15 pin plug for use with LR, EZ and *Plus* Series machines. The loadcell value and sensitivity factors are stored in a memory device inside the loadcell plug so the loadcell is self-identifying. The loadcells meet BS EN ISO 7500 part 1 and ASTM E4 for a ±0.5% accuracy loadcell. These standards state that the loadcell can be verified down to 2% of its load range at 0.5% accuracy of reading but can read down to zero load.

5N - 500N loadcells

1000N - 50kN loadcells

100kN loadcell

Max Load (N)	Max Load (lbf)	Load Resolution (N)	Eye End Diameter (in)	Part No
5 N	1.12 lbf	0.0001 N	5/8 in	01/2946
10 N	2.25 lbf	0.0001 N	5/8 in	01/2360
20 N	4.5 lbf	0.001 N	5/8 in	01/2950
50 N	11.25 lbf	0.001 N	5/8 in	01/2361
100 N	22.5 lbf	0.001 N	5/8 in	01/2480
250 N	56.25 lbf	0.001 N	5/8 in	01/3048
500 N	112.5 lbf	0.01 N	5/8 in	01/2362
1000 N	225 lbf	0.01 N	5/8 in	01/2419
2500 N	562.5 lbf	0.1 N	5/8 in	01/2363
5000 N	1124 lbf	0.1 N	5/8 in	01/2364
10 kN	2248 lbf	0.1 N	5/8 in	01/2365
20 kN	4496 lbf	1.0 N	5/8 in & 1⁄ in	01/2417
30 kN	6744 lbf	1.0 N	5/8 in & 1⁄ in	01/2366
50 kN	11240 lbf	1.0 N	5/8 in & 1⁄ in	01/2367
100 kN	22480 lbf	1.0 N	5/8 in & 1⁄ in	01/2896

HLC Series 50 N - 300 kN

A full bridge strain gauged loadcell complete with 15 pin plug and all necessary mounting adaptors for use with LR100K - LR300K Series machines. The loadcell value and sensitivity factors are stored in a memory device inside the loadcell plug so the loadcell is self-identifying. The loadcells meet BS EN ISO 7500 part 1 and ASTM E4 for a 0.5% accuracy loadcell. These standards state that the loadcell can be verified down to 2% of its load range but can read down to zero load.

100kN - 300kN loadcell

Max Load (N)	Max Load (lbf)	Load Resolution (N)	Eye End Diameter (in)	Part No
50 N	11.25 lbf	0.001 N	5/8 in	01/2936
100 N	22.5 lbf	0.001 N	5/8 in	01/2413
1000 N	225 lbf	0.01 N	5/8 in	01/2412
5 kN	1124 lbf	0.1 N	5/8 in	01/2944
10 kN	2248 lbf	0.1 N	5/8 in	01/2411
30 kN	6744 lbf	1.0 N	5/8 in & 1⁄ in	01/2978
50kN	11240 lbf	1.0 N	5/8 in & 1⁄ in	01/3101
100 kN*	22480 lbf	1.0 N	5/8 in & 1⁄ in	01/2457
150 kN*	33721 lbf	1.0 N	5/8 in & 1⁄ in	01/2458
300 kN*	67442 lbf	1.0 N	M50	01/2392

*100, 150 and 300kN loadcells are fixed to the machine.
For testing from 50N - 30kN an XLC loadcell is fitted to the bottom of this loadcell using an adapter.

Splinter Shields

Optional splinter shields are available to protect the user when testing brittle samples which are liable to fragment. The shields help prevent sample splinters leaving the test area when performing a test.

Shields for twin column machines, are fully hinged, and can be easily opened allowing full access to the test area from the front or back of the machine. The machine automatically detects whether the doors are open or closed, ensuring the shield is always securely closed before it will perform a test.

Single column splinter shields are available to a range of specifications, depending on the required testing application. There are two main types:

- Sliding splinter shields, move in the vertical axis of the machine column and can be easily lowered to safely enclose test area, once sample is positioned.
- Hinged splinted shields are available in a range of sizes and can be fitted to enclose either the test area or the entire machine.

Splinter Shield Ordering Information

Splinter shield to fit:	Part No	Notes
LRX* LRX*Plus**	07/2058/F	Lower shield suitable for fixtures/samples up to 125 mm (4.92 in) diameter - without electrical interlock
LRX*Plus**	01/3064	Lower shield suitable for fixtures/samples up to 125 mm (4.92 in) diameter - with electrical interlock
EZ20 EZ50	01/3095	With electrical interlock
LR30K LR50K LS100	01/1972	With electrical interlock
LR100K LR150K	01/2995	Without electrical interlock
LR100K LR150K	01/3109	With electrical interlock
Servo Hydraulic/Pneumatic Bench Machine	01/3013	Without electrical interlock
Servo Hydraulic Floor Machine	01/3110	Without electrical interlock

* Larger shields are available to suit specific applications.

Grips and Fixtures

An extensive range of grips and fixtures for many different testing applications is available. Information on our range is contained in a separate grips catalogue, available on request.

Compression Cages

A complete range of compression cages is available to fit both single and twin column ‘Pogo’ machines. Used to test large or awkwardly shaped samples which do not fit within the standard working area.

Compression cages can be manufactured in an extensive range of shapes and sizes, depending on individual applications and required specification.

Capacity

Up to 50 kN (11240 lbf) max.

Compression cages can be supplied for use with the following ‘Pogo Design’ materials testing machines (lower guide bearing included):

LF*Plus*	1 kN (225 lbf) maximum force
LRX	2.5 kN (562.5 lbf) maximum force
LRX*Plus*	5 kN (1124 lbf) maximum force
LR5K*Plus*	5 kN (1124 lbf) maximum force
LR10K*Plus*	10 kN (2248 lbf) maximum force
EZ20	20 kN (4496 lbf) maximum force
LR30K	30 kN (6744 lbf) maximum force
EZ50	50 kN (11240 lbf) maximum force

Cage size: 1300 mm (51.18 in) high x 1600 mm (62.99 in) wide x 1000 mm (39.37 in) deep

Compression Cage Applications

Used for general purpose compression testing of large or awkwardly shaped materials and products such as:

- Packing crates
- Large diameter pipes
- Mattresses
- Car seats

Packaging

Complete with connecting rod. Upper and lower compression platens are provided as an option.

Specifying a Compression Cage

As all Compression Cages are custom made, due to varying sample types and size, you will need to discuss the following points when specifying a compression cage with your local distributor:

- Which materials testing machine is to be used with the compression cage?
- What is the sample type and size?
- What is the required internal cage dimensions?
- What is the maximum load?
- What stroke/vertical travel is required?
- What is the size and type of upper platen required? (flat/round/dome)
- A choice of polycarbonate safety shield or open mesh doors?

Please contact AMETEK to discuss your requirements.

Extensometers

Non-Contacting LASERSCAN 200

The Laserscan 200 is a versatile, non-contacting laser extensometer. A bright red scanning beam illuminates the sample and gauge markers, making it easy to set up and align. The Laserscan 200 includes four gain settings allowing it to be used over a wide range of gauge lengths without adjustment to its calibration or position. It incorporates a digital display, which is used to facilitate calibration and provides a continuous readout. The instrument has an analogue output (0-10V) which allows it to be interfaced with all LLOYD INSTRUMENTS' and most other materials testing machines.

Two reflective markers denote the gauge length of the sample. The Laserscan senses the leading edges of these markers and is unaffected by their shape, making accurate setting of the gauge length a very simple procedure. An 80Hz laser beam sweeps the axial length of the specimen, illuminating and detecting the position of the gauge markers. As the sample is stressed the markers separate and any movement is measured. The Laserscan 200 is supplied with an adjustable stand to allow accurate positioning for different length test specimens.

Applications

The Laserscan 200 allows accurate strain measurement of a wide range of materials with varying ductility including plastics, film, rubber and textiles.

The Laserscan 200 eliminates any problems associated with contacting extensometers making it particularly suitable for elastomeric samples where the pressure of knife edges on a contacting extensometer could induce local stresses and weaken the sample. Specialist punches for applying reflective tape targets can be ordered separately.

Laserscan 200 Ordering Information

Model	Part No.	Description
For Use with LR Series and LS100 Machines Only:		
LASERSCAN LR	01/2932	Laserscan, 240V
LASERSCAN L1	01/2940	Laserscan, 115V
For Use with EZ & LRPlus Series Machines Only:		
LASERSCAN EZ	01/2913	Laserscan, 240V
LASERSCAN E1	01/2939	Laserscan, 115V

Laserscan 200 Accessories

	Availability	Part No.
Extensometer Bracket for Thermal Cabinet	Optional	07/1708
Punch to apply 2 mm Targets (TTOXP/2)	Optional	01/1159
Punch to apply 4 mm Targets (TTOXP/4)	Optional	01/1156
Grey Reflective Tape	Optional	50/0336
Free Standing Stand	Standard	07/1719

Specifications

Gauge Length	10 - 2000 mm (0.39 - 78.74 in)
Elongation Range	10 - 2000 mm (0.39 - 78.74 in)
Accuracy	±0.5% of working length
Measurement Principle	Ratio Non-Contacting
Signal to Noise Ratio	72 db
Scan Frequency	80 Hz (nominal)
Analogue Output	0 - 10V
Supply Voltage	220/240V ac and 110/120V ac
Power Requirements	100 W Maximum

EXL750 Long Travel Extensometer

The EXL750 extensometer is specifically aimed at the plastic and rubber industries to provide accurate readings of strain and extension over a large extension range. The unit, incorporating two clamping arms and precision potentiometers, produces a DC voltage proportional to the distance between the arms. This generates accurate readings of percentage strain, and allows additional parameters such as yield point and break points to be calculated when used in conjunction with LLOYD INSTRUMENT NEXYGEN™ MT software. The EXL750 conforms to BS5214 Grade D, ISO9513 Class 2.

EXH750 Long Travel Extensometer

The EXH750 extensometer is suitable for use with rigid, semi-rigid and ductile materials. The extensometer is supplied with a universal voltage external power supply unit, a loom and connector to fit a range of machines, and a mounting stand, which easily bolts onto the left hand column of the machine. The EXH750 conforms to BS5214 Grade C, ISO9513 Class 1.

EXH750 & EXL750 Ordering Information

Model	Part No.	Description
EXH750 LR	01/2474	Long Travel High Resolution Dual Encoder Extensometer for LR Series and LS100 Machines
EXH750 EZ	01/2915	Long Travel High Resolution Dual Encoder Extensometer for EZ and LR*Plus* Series Machines

Model	Part No.	Description
EXL750 LR	01/2247	Long Travel Dual Potentiometer Extensometer for LR Series and LS100 Machines
EXL750 EZ	01/2914	Long Travel Dual Potentiometer Extensometer for EZ and LR*Plus* Series Machines

EXL750 Accessories

	Availability	Part No.	Notes
EXT STAND A	Optional	01/2314	EXL750 extensometer stand for LRX and LRX5K Machines
EXT STAND B	Optional	01/2313	EXL750 Extensometer stand for LR5K to LR50K, LS100 and EZ Series Machines
EXT STAND C	Optional	01/2261	EXL750 Extensometer stand for LR100K to LR300K Series Machines

Specifications

	EXH750	EXL750
Measurement Principle	Dual Encoder with D/A Converter	Dual Potentiometer (10V = 750 mm, 30 in)
Mounting Stand	Supplied (Bolts to Machine)	Order Separately
Resolution	2.5 microns	250 microns
Accuracy	1%	2%
Selectable Gauge Lengths	10 mm 0.39 in	10 mm 0.39 in
	25 mm 0.98 in	20 mm 0.79 in
	50 mm 1.97 in	25 mm 0.98 in
	80 mm 3.15 in	50 mm 1.97 in
Weight	8 Kg	8 Kg
Power Requirements	100 W Maximum	100 W Maximum
Supply Voltage	115/230 Vac ± 10%	115/230V ac ± 10%
	50 - 60 Hz	50 - 60 Hz
Measuring Range	750 mm 29.53 in	750 mm 29.53 in
Maximum Sample Cross Section	50 mm 1.97 in	50 mm 1.97 in

STGA High Resolution Strain Gauge Extensometers

A general purpose, precision extensometer, designed for testing a wide range of materials including metals, plastics, composites and ceramics. The STGA operates in tension, compression and cyclic testing modes. Its dual flexure design permits higher frequency operation, while eliminating sensitivity to vibrations. The extensometer is supplied with an attachment kit to allow quick, one hand mounting to the sample.

Features

- Tests specimen through failure
- Suitable for axial tension, compression and cyclic testing
- Overtravel safety stop eliminates risk of damage
- Interchangeable components : arms, spacers and steel knife edges
- Meets standards ASTM E83 Class B-1, ISO9513, Class 0.5

STGA Accessories

	Availability	Part No.
Amplifier Kit for LRX Series Machines	Optional	01/2252
Amplifier Kit for LR* and LS100 Series Machines	Optional	01/1966

*Note: Strain Gauge Amplifier is required when using STGA Extensometers. LR100K to LR300K machines are factory fitted with amplifier as standard.

Specifications

Measurement Principle	Full bridge strain gauge
Accuracy	0.5%
Maximum Clamp Opening	25 mm (0.98 in)
Temperature Range	-40°C to +100°C
Excitation	10 VDC typical
Output	2 to 4m V/V nominal

STGA Ordering Information

For Use With LR Series and LS100 Machines

Model	Part No.	Description
STGA/10/10	01/2793	High Res' Strain Gauge: 10 mm, 0.39 in gauge length, 10% max elongation for LR and LS100 machines
STGA/25/10	01/2794	High Res' Strain Gauge: 25 mm, 0.98 in gauge length, 10% max elongation for LR and LS100 machines
STGA/25/25	01/2795	High Res' Strain Gauge: 25 mm, 0.98 in gauge length, 25% max elongation for LR and LS100 machines
STGA/25/50	01/2796	High Res' Strain Gauge: 25 mm, 0.98 in gauge length, 50% max elongation for LR and LS100 machines
STGA/25/100	01/2797	High Res' Strain Gauge: 25 mm, 0.98 in gauge length, 100% max elongation for LR and LS100 machines
STGA/50/25	01/2798	High Res' Strain Gauge: 50 mm, 1.97 in gauge length, 25% max elongation for LR and LS100 machines
STGA/50/50	01/2799	High Res' Strain Gauge: 50 mm, 1.97 in gauge length, 50% max elongation for LR and LS100 machines
STGA/50/100	01/2800	High Res' Strain Gauge: 50 mm, 1.97 in gauge length, 100% max elongation for LR and LS100 machines
STGA/80/10	01/2801	High Res' Strain Gauge: 80 mm, 3.15 in gauge length, 10% max elongation for LR and LS100 machines
STGA/80/25	01/2802	High Res' Strain Gauge: 80 mm, 3.15 in gauge length, 25% max elongation for LR and LS100 machines

For Use With EZ Series and LR*Plus* Machines

Model	Part No.	Description
STGA/10/10	01/2917	High Res' Strain Gauge: 10 mm, 0.39 in gauge length, 10% max elongation for EZ and LR*Plus* machines
STGA/25/10	01/2918	High Res' Strain Gauge: 25 mm, 0.98 in gauge length, 10% max elongation for EZ and LR*Plus* machines
STGA/25/25	01/2919	High Res' Strain Gauge: 25 mm, 0.98 in gauge length, 25% max elongation for EZ and LR*Plus* machines
STGA/25/50	01/2920	High Res' Strain Gauge: 25 mm, 0.98 in gauge length, 50% max elongation for EZ and LR*Plus* machines
STGA/25/100	01/2921	High Res' Strain Gauge: 25 mm, 0.98 in gauge length, 100% max elongation for EZ and LR*Plus* machines
STGA/50/25	01/2922	High Res' Strain Gauge: 50 mm, 1.97 in gauge length, 25% max elongation for EZ and LR*Plus* machines
STGA/50/50	01/2923	High Res' Strain Gauge: 50 mm, 1.97 in gauge length, 50% max elongation for EZ and LR*Plus* machines
STGA/50/100	01/2924	High Res' Strain Gauge: 50 mm, 1.97 in gauge length, 100% max elongation for EZ and LR*Plus* machines
STGA/80/10	01/2925	High Res' Strain Gauge: 80 mm, 3.15 in gauge length, 10% max elongation for EZ and LR*Plus* machines
STGA/80/25	01/2926	High Res' Strain Gauge: 80 mm, 3.15 in gauge length, 25% max elongation for EZ and LR*Plus* machines

Other configurations may be available on request.

STGB Bi-Axial Extensometers

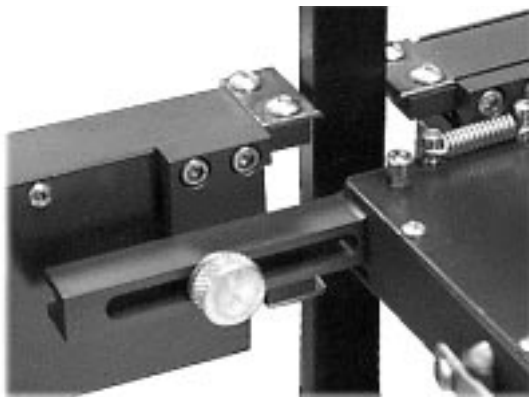
This multi-purpose bi-axial extensometer provides simultaneous averaged axial strain measurements with average lateral strain. Ideally suited for testing anisotropic materials such as advanced composites, or equally for more general applications, determining Poisson's Ratio and 'r' values.

Features

- High accuracy with minimal crosstalk between channels
- Multiple sets of dual flexures and mechanical stops allow testing through failure
- Unique knife edge mounting and parallel travel permits use on round or flat samples with unprecedented accuracy and ease
- Suitable for wide range of sample sizes from 2.5 mm to 25 mm (0.98 to 0.98 in) width or diameter

Specifications

Maximum Movement (STGB 0.5E)	0.5 mm	0.02 in
Maximum Movement (STGB 1.0E)	1.0 mm	0.04 in
Gauge Length	25 mm	0.98 in
Sample Width	0 to 25 mm	0 to 0.98 in
Maximum Clamp Opening	25 mm	0.98 in
Accuracy	0.5% both axes	
Extensometer Type	Full bridge strain gauge both axes	
Temperature Range	-40°C +100°C	
Output	2 to 4m V/V depends on model	
Linearity	0.15%	
Crosstalk	Less than 0.5%	
Excitation	10V dc	



STGB Ordering Information

Model	Part No.	Description
STGB/0.5	01/2806	Bi-Axial Extensometer, 0.5 mm 0.02 in elongation
STGB/1.0	01/2807	Bi-Axial Extensometer, 1.0 mm 0.04 in elongation
NEXYGEN16KIT	01/2947	NEXYGEN 16-bit Analogue and Digital Interface Card Kit (ISA CARD)
NEXYGEN16KIT	01/3057	NEXYGEN 16-bit Analogue and Digital Interface Card Kit (PCI CARD)

Note: NEXYGEN16KIT analogue and digital interface card kit is required when using STGT Extensometers with NEXYGEN Software.

STGT Transverse Extensometers

A general purpose self supporting extensometer, capable of measuring samples of up to 1 in width or diameter. Commonly used to determine Poisson's Ratio and 'r' values. It is well suited for testing a wide range of materials including metals, plastics, composites and ceramics.

Features

- Wide range of sample sizes
- Self supporting on sample
- Rugged dual flexure design withstands severe usage
- May be used for dynamic cyclic testing as well as static
- Easily replaceable hardened tool steel knife edges

Specifications

Maximum Movement (STGT 0.5E)	0.5 mm	0.02 in
Maximum Movement (STGT 1.0E)	1.0 mm	0.04 in
Maximum Movement (STGT 2.5E)	2.5 mm	0.1 in
Sample Width	0 to 25 mm	0 to 0.98 in
Accuracy	0.5%	
Extensometer Type	Full bridge strain gauge	
Temperature Range	-40°C +100°C	
Output	2 to 4m V/V depends on model	
Linearity	0.15%	

STGT Ordering Information

Model	Part No.	Description
STGT/0.5	01/2803	Transverse Extensometer, 0.5 mm 0.02 in elongation
STGT/1.0	01/2804	Transverse Extensometer, 1.0 mm 0.04 in elongation
STGT/2.5	01/2805	Transverse Extensometer, 2.5 mm 0.1 in elongation
NEXYGEN16KIT	01/2947	16-bit Analogue and Digital Interface Card Kit (ISA CARD)
NEXYGEN16KIT	01/3057	16-bit Analogue and Digital Interface Card Kit (PCI CARD)

Note: NEXYGEN16KIT analogue and digital interface card kit is required when using STGT Extensometers with NEXYGEN Software.

Thermal Cabinets and High Temperature Furnaces

Designed for testing samples under pre-defined temperature conditions, a range of thermal cabinets is available, providing a temperature range from -70°C to +300°C within a large general purpose test area.

A high speed centrifugal fan provides rapid air movement within each cabinet allowing rapid temperature cycling with minimal temperature gradients. Visual inspection is made easy thanks to a large triple glazed observation panel. For added versatility the thermal cabinets are mounted on wheels which run on an independent base unit for backwards and forwards movement.This enables normal ambient tests to be carried out by simply sliding the cabinet free from the machine's crosshead.

The chamber interior is constructed from fully seam welded high grade polished stainless steel and is completely separated from the exterior panels by a thermal break. This minimises conducted heat transfer. The hinged door incorporates a high temperature replaceable silicone rubber gasket which provides a vapour seal against the chamber liner.

A 75 mm (2.95 in) diameter port is fitted in a central position in the working area of both the top and bottom panels. in addition, the cabinet is provided with a 20 mm (0.79 in) diameter cable entry and pressure equalisation port. On models fitted with a cooling option, the spent cooling gas is vented by an exhaust outlet at the rear of the cabinet, which is connected to a suitable hose for dispersion to atmosphere.

TC540 Thermal Chamber

High precision heating thermal chamber, supplied complete with loadcell rods and a base assembly to fit twin column, bench mounted LR Series machines.

TC550 Thermal Chamber

High precision heating and cooling thermal chamber supplied complete with loadcell rods and a base assembly to fit any twin column bench mounted machines. The chamber makes use of liquid nitrogen for cooling, which is stored in an optional Dewar Flask.

Specifications

	TC540	TC550
Temperature Range	+40°C to +300°C	-70°C to +300°C
Temperature Accuracy	0.5°C	0.5°C
Heating Rate	10°C/min	10°C/min
Cooling Medium	N/A	Liquid Nitrogen
Internal Height	600 mm (23.62 in)	600 mm (23.62 in)
Internal Width	290 mm (11.42 in)	290 mm (11.42 in)
Internal Depth	280 mm (11.02 in)	280 mm (11.02 in)
Base Assembly	For bench mounted LR Series	For bench mounted LR Series
Supply Voltage	240V ac	240V ac

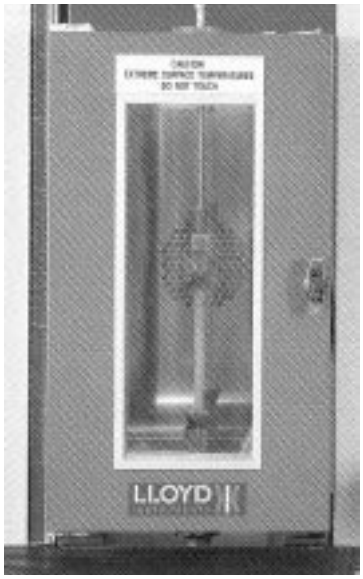
TC540 and TC550 Ordering Information

Model	Part No.	Description
TC540	01/1668	Heating thermal chamber for twin column LR, LR*Plus*, EZ Series, and LS100 machines
TC550	01/1669	Heating and cooling thermal chamber for twin column LR, LR*Plus*, EZ Series, and LS100 Series machines
DF1	01/1820	30 litre dewar flask for liquid nitrogen storage

Note: When ordering, please specify to which machine the thermal cabinet is to be fitted. Not suitable for single column machines.

TC550 CO2 Thermal Chamber

High precision heating and cooling thermal chamber supplied complete with loadcell rods and a base assembly to fit twin column bench mounted machines. This chamber requires liquid carbon dioxide for cooling.



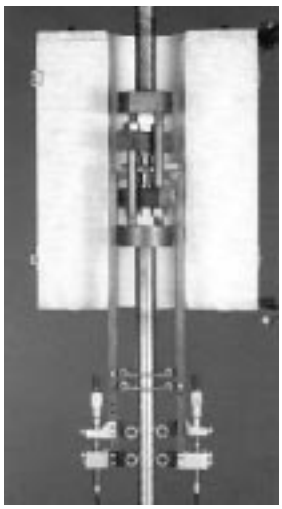
Specifications

Temperature Range	-40°C to +300°C
Temperature Accuracy	0.5°C
Heating Rate	10°C/min
Cooling Medium	Liquid carbon dioxide
Internal Height	600 mm (23.62 in)
Internal Width	290 mm (11.42 in)
Internal Depth	280 mm (11.02 in)
Base Assembly	For bench mounted LR Series machines
Supply Voltage	240V ac

TCF950 High Temperature Furnace

High temperature split furnace with a temperature range from 50°C - 950°C for use with LR Series machines. The furnace consists of an outer cylindrical polished steel case with Monolux 500 end plates. The electrical heating elements are wound in three zones which may be independently balanced to linearise the temperature over the full length of the furnace.

A separate microprocessor controlled temperature regulator with trizone stability adjustment enables the furnace temperature to be set between 50° and 950°C with an accuracy of ±1°C at the alumina sheathed platinum v 13%Rh platinum thermocouple. A base plate and column fixed to the machine support the furnace and articulated mounting brackets, allowing full access to the test space. Nimonic pull bars extend from the lower anchor pin and the load cell eye end into the controlled space and support specimen adaptors for screw threaded metal specimens up to 19 mm (0.75 in) thread diameter.



Interior of furnace showing optional dual averaging extensometer. Contact AMETEK for further details

Specifications

Temperature Range	+50°C to +950°C (122°F to 1742°F)
Temperature Accuracy	0.5°C (32.9°F)
Heating Rate	10°C/min (50°F/min)
Internal Height	300 mm (11.81 in)
Internal Diameter	100 mm (3.94 in)
Mounting Bracket	For LR Series machines
Supply Voltage	240V ac

TC550 and TC950 Ordering Information

Model	Part No.	Description
TC550	01/1669	Heating and cooling thermal chamber for all twin column machines
TCF950	Contact AMETEK	High temperature Furnace for all twin column machines
TCF950/ROD	Contact AMETEK	High temperature Furnace Rods for use with TCF950

Note: When ordering, please specify to which machine the furnace is to be fitted.
The TCF950 and TCF950/ROD are made to customer requirements. Please contact AMETEK to discuss your requirements.

NEXYGEN™ FM Software

Data Analysis and Applications Software for the LF*Plus* Universal Testing Systems

NEXYGEN FM software is an extremely easy to use materials testing software package designed to integrate directly with LLOYD INSTRUMENTS™ LF*Plus* testing machines.

The software is intuitive and allows the user to collect and analyse load and extension data from a common set of pre-configured test setups. It features seamless OLE2 integration with Microsoft® Word® and Excel®, enabling the user to create detailed and comprehensive reports using common and familiar packages. Developed with the user in mind, NEXYGEN FM software is ideal for even the most inexperienced operator, minimising training and allowing you to get up and running easily and quickly!

Simplified Test Setup

- Test setup screens enable the user to specify and select attributes for a particular test, supported by a series of intelligent prompts, combo boxes, pull down menus and other help functions.
- By selecting either a tensile, compression or cycling test, the configurator screen (see screen c) automatically presents the user with configurable parameters relevant to that test only, thereby eliminating possible confusion. Having completed this simple procedure, the test can begin.
- If the same type of test is required for many samples, a 'template feature' can also be used to simplify the creation of new test files, thereby speeding up testing further.

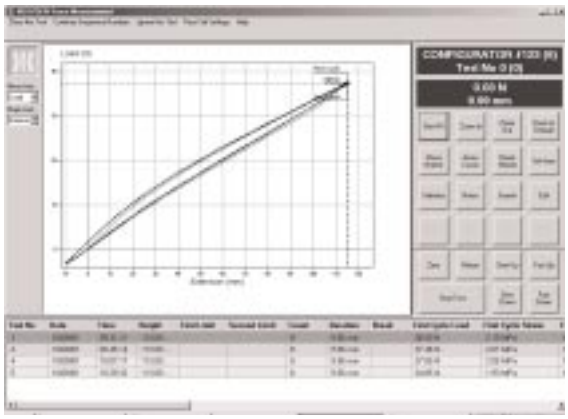
Software control console

The console is situated on the test results screen and serves as an interface to the desired test instrument. The user can control the test machine operations remotely from the computer and collect and analyse measurement results.

Simplified Presentation of Results

- NEXYGEN FM presents results in a graphical and tabular format shown together on the same screen for easier viewing and analysis (see screen b).
- A double-click on any line in a batch of results will display the associated graph.
- Results can be colour coded for immediate Pass/Fail recognition.
- Graphical features: A graph can be specified with user defined or default axes, stress/strain curves and the modulus can be displayed. By overlaying one test with another, graphical comparisons can also be made.

(a) NEXYGEN™ FM Start up Screen



(b) NEXYGEN™ FM Main Screen

(c) NEXYGEN™ FM Configurator Screen

(d) NEXYGEN™ FM Configuration Screen

- Notes can be added to the batch table to highlight specific points.
- The software supports mathematical calculations including common statistical operands
- An Auto-Save function ensures results are automatically saved after each test.
- NEXYGEN FM can be configured to automatically print reports using a Microsoft Word template as well as using Word to create reports and Excel to export data.

Upgrades for Advanced Testing
- For users wishing to undertake more specialised or customised testing, NEXYGEN FM can easily be upgraded to NEXYGEN MT and Ondio™ software.
- Sophisticated tests may still be performed using the simplified front end of NEXYGEN FM. All data is automatically saved and parameters cannot be changed by the operator.

Standard Batch Tests
- Pull to Break
- Pull to Limit
- Pull/Compress with Yields
- Compress to Rupture
- Compress to Limit
- Cycling
- A variety of Gauge Tests

System Requirements (Minimum)
Pentium 2® Processor, 400MHz
128MB RAM
CD Rom Drive
250MB Hard Disk Space
1 Free COM Port, with 16550 UART
Monitor, with resolution 1024 x 768 or higher

- For routine force measurement and general purpose materials testing applications
- Interfaces directly with LLOYD INSTRUMENTS LF*Plus* materials testing systems and CHATILLON TCD test frames
- For CHATILLON digital force gauge users, the software can also interface directly to the force gauge to provide expanded gauge functionality.
- Very easy to set up and operate
- Seamless OLE2 integration with common Microsoft® programs Word® and Excel®:

- Produce automatic reports using Microsoft Word
- Create Word templates allowing results and statistics to be automatically inserted

- Logical intuitive software with intelligent prompts and help menus ideal for the unskilled or inexperienced user
- Navigation is simple using familiar cut, copy & paste, 'drag & drop' techniques
- Template feature available for multiple tests saving on setup time
- Clear presentation of results in graphical and tabular formats
- Results colour coded for immediate Pass/Fail recognition Auto Save function
- Supports mathematical calculations including common statistical operands ie. maximum, minimum, mean, median, coefficient of variance and standard deviation
- User selectable units for batch results and graphs can be converted at anytime.
- Post test analysis including post test modulus or static values, post test yield points
- Upgrade to NEXYGEN MT data analysis software or Ondio applications builder software - simplified front end of NEXYGEN FM can be used for operation by unskilled users
- Full traceability of results, specimens and test parameters
- Advanced data compression optimises accuracy and file size
- ISO 9001 TickIT accredited

NEXYGEN FM Ordering Information

Order No.	Description
40/0738	NEXYGEN™ FM application software, single seat license
40/0738/5	NEXYGEN FM application software, five seat license
40/0738/10	NEXYGEN FM application software, ten seat license

NEXYGEN™ MT Application Software

Material Testing Software

NEXYGEN MT software provides a virtual testing laboratory. The software offers a full compliment of testing categories with multiple test types within each category complying with industry and international testing standards. Setups remain easy and users can fully configure a test using a menu driven approach that guides them in a logical, intuitive, step-by-step manner. Like the other NEXYGEN packages, NEXYGEN MT software presents test results in tabular and graphical formats.

Test Setup

- Customise data formats and setup preferences for tables, graphics, colors, fonts etc.
- Move columns and rows and rename headings to correspond with your nomenclature.
- Control test system operations from a graphical interface that corresponds with the test machine in use.
- Configure the test using a standard test setup template, which is pre-formatted for each test type.
- Specify and select from a menu, the attributes that are important for a particular test.
- “Extra Results” can be established before the test is performed. This information can be displayed as text, (yes/no) or numerical values.
- “Auto recognition” of Mitutoyo Digimatic gauges.
- “Test Quick Starter” allows the user to start and complete a test with only one click of the mouse or by depressing the space bar.
- Automatically print results in a pre-configured report format after each test.

Results Presentation

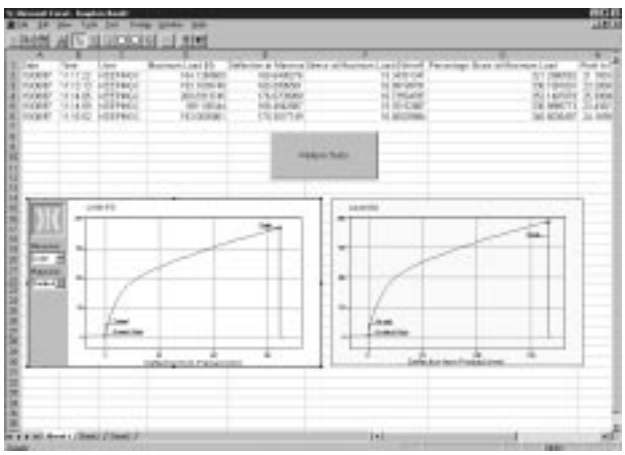
- Provides graphical presentation of test results, making use of markers to denote specific points such as preload and breakpoint.
- Magnify any portion of the graph to obtain more detailed information.
- Select and reposition the trace within its axes or transfer the trace from its origination onto a report.
- Overlay the trace from one test onto another for comparison purposes.
- Establish a trace as your “reference” against which all other tests for a batch can be compared.
- Columns containing numerical data can be configured for Pass/Fail. If data is recorded outside a configured limit, the row is highlighted for easy identification.
- “Show Pass/Fail” option allows the user to enable or disable the feature.
- Xbar/Range and Histogram functions for advanced statistical analysis.
- Display Xbar/Range charts for batch tables containing pass/fail limits.
- Change the way NEXYGEN MT software displays results information. Alternatively, display information in a histogram format.

Windows® Integration

- Create reports easily using Microsoft Word®, Excel® or Access®.
- Design Word templates so that NEXYGEN MT software populates the template to create customised reports.
- Report generation can be prompted by the user or by the software based on an event.
- Seamless OLE2 integration with Microsoft® programs enables rapid, easy exporting of information and data exchange across to other applications.

Upgrades for Advanced Testing

- Fully customise your NEXYGEN tests using Ondio™ application builder software.



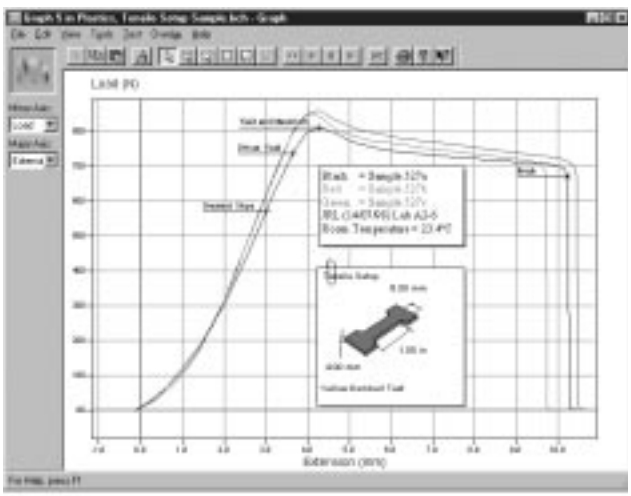
Nexygen through Excel Interface

Features

- Multi-tasking operation is simple to setup and operate
- Interfaces directly to your LLOYD INSTRUMENTS universal test machine
- Library of tests and testing categories
- Seamless OLE2 integration with Word®, Excel®, Access®, PowerPoint® and Outlook®
- Graphical and tabular results with customised presentation
  - Zoom/magnify traces
  - Auto scale to fit page
  - Markers for exact positioning of points
  - Colour overlays for direct comparison of results
- "Quick Starter" starts test with one key press and indicates "Pass/Fail"
- Querying of tabular results
- Mathematical calculations including common statistical operands
  - Mean
  - Range
  - Standard Deviation
  - Capability Index (Cp) and (Cpk)
  - Xbar/Range and Histograms
- SPC functionality without SPC knowledge
- Customise with Ondio Application Builder software
- ISO 9001 TickIT accredited

System Requirements (Minimum)

- Pentium 2® Processor, 400MHz
- 128MB RAM
- 250MB Hard Disk Space
- 1 Free COM Port, with 16550 UART
- CD ROM Drive (For Installation)
- Monitor, with resolution 1204 x 768 or higher



Nexygen Trace with Coloured Overlays

Batch Test Categories

- General Purpose
- Adhesives Testing
- Bricks Testing
- Components Testing
- Films Testing
- Foam Testing
- Food Testing
- Metals Testing
- Plastics Testing
- Rubber Testing
- Springs Testing
- Textiles Testing

Standard Batch Test

- Pull to break
- Pull to force limit
- Pull with yields
- Compress to rupture
- Compress to force limit
- Compress with yields
- Cycling
- Creep
- Relaxation
- Tearing and peeling
- Flexural (3- and 4-point bend)
- Snap on, snap off
- Insertion and extraction
- Friction
- Hardness
- Adhesion

A variety of batch tests are included in each test category that comply with International Standards.

NEXYGEN MT Ordering Information

Order No.	Description
40/0658	NEXYGEN MT Application Software, Single License
40/0658/5	NEXYGEN MT Application Software, Five Seat License
40/0658/10	NEXYGEN MT Application Software, Ten Seat License

ONDIO™
Application Builder Software

Customise Your NEXYGEN™ MT Applications

NEXYGEN software packages have been engineered to offer solutions for the most common force measurement and materials testing applications. However, when users need to perform custom testing or simply want to modify their NEXYGEN test setup to perform additional functions not part of the standard setup, LLOYD INSTRUMENTS offers the Ondio application builder software.

Ondio software is based upon the VBScript programming language. It presents detailed attributes of the NEXYGEN MT package providing configurable parameters in three steps: Test Parameters, Primary Script and Secondary Script:

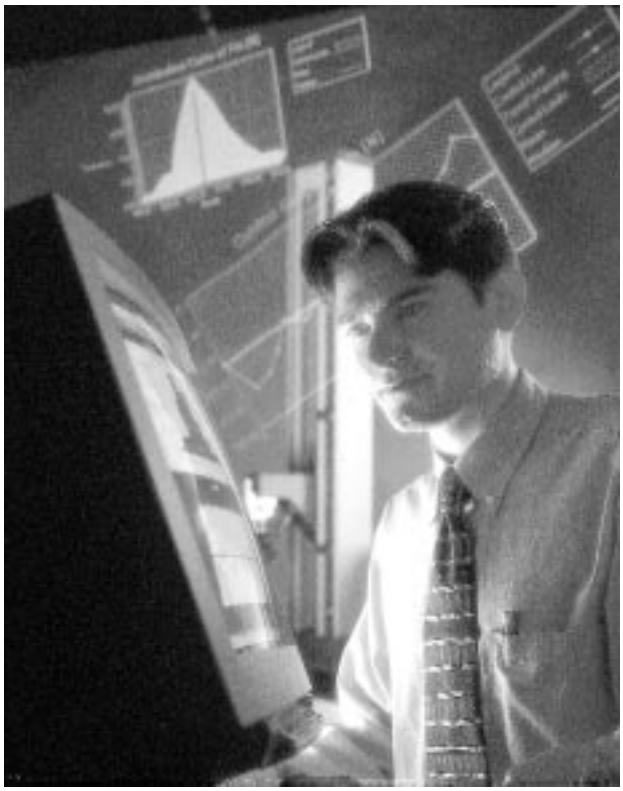
Step 1 – Establishing Your Test Parameters
Ondio software interfaces with the NEXYGEN test setup and provides additional attributes that can be used for the test. These attributes include:

- Direction (tension or compression)
- Preload
- Auto Measure Sample Height
- Known Height
- Area
- Break Detection
- Auto Zero
- Auto Return
- Extra Results

These attributes help to further define your NEXYGEN setup with very specific test parameters.

Step 2 – Define How Your Machine Operates at Startup and at the End of the Test
The primary script is used to define how your NEXYGEN application will operate at the start and the end of the test. It determines how the machine moves when readings are taken and what results are presented.

The advantage of using VBScript is that the language is intuitive and easy to learn. The STAGE command helps define how the machine will move and can be established based on extension or load. Ondio software recognises parameters in [brackets] and the units associated with the parameter. If the parameter is incorrect, Ondio software will identify the problem in your script to help in troubleshooting.



ONDIO
Ordering Information

Order No.	Description
40/0683	ONDIO Application Software, Single License

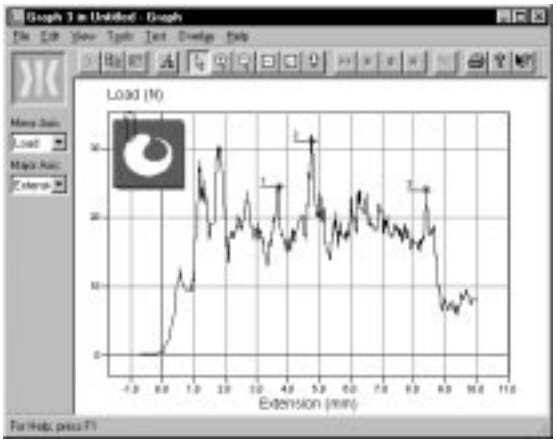
The RESULT command identifies the column heading to be used as the values for the specified result type. Results can be recorded based on the pre-defined load limits or extension or can be determined by calculations or combination of results such as the sample modulus.

Loop counters for cycling testing can be created, stage limits calculated and “Progress” routines established to determine how far a test has progressed in completing the entire test setup. In addition, preconditions can be created that prompt the user to take manual action prior to the test being allowed to commence. It is even possible to compensate for typical testing factors, such as a pause by the machine during a relaxation measurement.

Step 3 – What To Do With Your Results
Secondary scripting defines how your results will be used. The secondary script can be used to post “markers” at specific points on the trace to denote key characteristics. Markers can be defined based on load, extension, work and time. The secondary script includes a built in Modulus which can be used to determine the steepest gradient and draw a tangential line along the trace. Secondary script can be used to prompt a NEXYGEN test to react at the break point of a sample. For example, it is possible to specify to record the “LoadAtBreak”, ExtnAtBreak” and the “WorkAtBreak”.

Ondio software can also be used to expand the data acquisition functionality of a NEXYGEN application. Ondio software can operate with an interface card for reading analogue or digital signals. This allows users to:

- Continuously collect analogue data from an input channel
- Terminate a drive stage when either an analogue or digital signal falls below a user-defined threshold
- Automatically convert the input voltage to the required unit (e.g. extensometer output converted to extension)
- Change the state of a digital output (switch equipment On/Off)



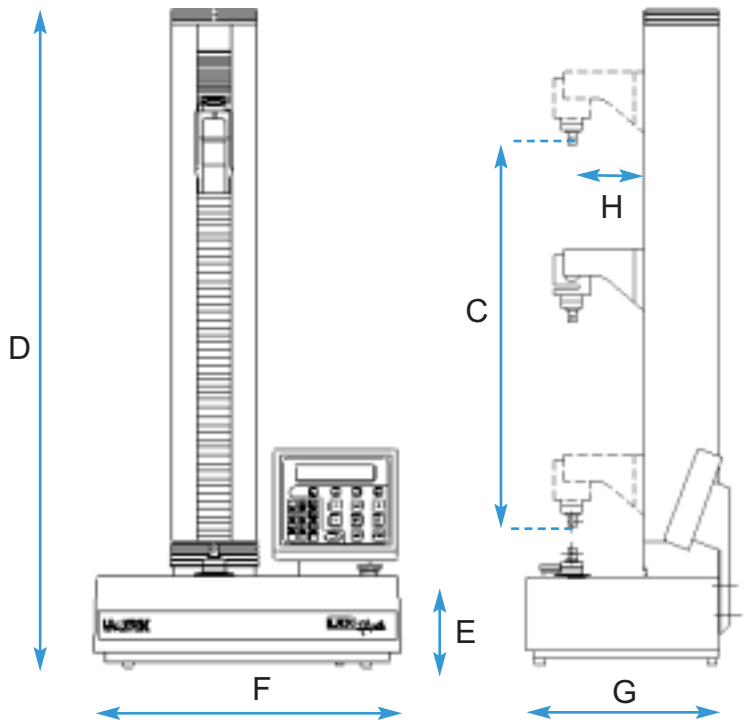
Features
- Expands your NEXYGEN MT applications
- Simple and intuitive using VBScripting language
  - English language syntax
  - Automatic syntax checking
  - Advanced results calculations
  - Preconditions
  - Automatic scaling of results
  - No previous programming experience necessary
- Ideal for complex testing involving:
  - Multiple stage testing
  - Cycle testing
  - Tests involving load rate and load hold stages
  - User-defined results calculations
- ISO 9001 TickIT Certified

System Requirements (Minimum)
- Pentium 2® Processor, 400MHz
- 128MB RAM
- 250MB Hard Disk Space
- 1 Free COM Port, with 16550 UART
- CD ROM Drive (For Installation)
- Monitor, with resolution 1204 x 768 or higher

Table of Machine Dimensions - Static Testing Systems

		Single Column Machines			Twin Column Machines		
		LF*Plus*	LRX	LRX*PLus*	LR5K*Plus*	LR10K*Plus*	EZ20
A	Working Width				404 mm 15.91 in	404 mm 15.91 in	404 mm 15.91 in
B	Column Depth				130 mm 5.12 in	130 mm 5.12 in	150 mm 5.91 in
C	Max Travel	500 mm 19.68 in	750 mm 29.53 in	735 mm 28.94 in	975 mm 38.39 in	950 mm 37.40 in	870 mm 34.25 in
D	Machine Height	913 mm 35.94 in	1258 mm 49.53 in	1260 mm 49.61 in	1565 mm 61.61 in	1565 mm 61.61 in	1565 mm 61.61 in
E	Base Height	240 mm 9.45 in	170 mm 6.69 in	170 mm 6.69 in	230 mm 9.06 in	230 mm 9.06 in	240 mm 9.45 in
F	Machine Width	500 mm 19.68 in	564 mm 22.20in	564 mm 22.20 in	845 mm 33.27 in	845 mm 33.27 in	893 mm 35.16 in
G	Machine Depth	400 mm 15.75 in	379 mm 14.92 in	390 mm 15.35 in	480 mm 18.90 in	480 mm 18.90 in	596 mm 23.46 in
H	Throat	175 mm 6.89 in	135 mm 5.31 in	135 mm 5.31 in			
	Machine Weight	46 kg 101 lb	54 kg 119 lb	50 kg 110 lb	105 kg 231 lb	105 kg 231 lb	150 kg 330 lb

Single Column Machines



LR30K	EZ50	LR50K	LS100	LR100K	LR150K	LR300K
404 mm 15.91 in	404 mm 15.91 in	404 mm 15.91 in	404 mm 15.91 in	620 mm 24.41 in	620 mm 24.41 in	620 mm 24.41 in
150 mm 5.91 in	150 mm 5.91 in	150 mm 5.91 in	150 mm 5.91 in	216 mm 8.51 in	216 mm 8.51 in	345 mm 13.58 in
870 mm 34.25 in	855 mm 33.66 in	855 mm 33.66 in	840 mm 33 in	1150 mm 45.28 in	1050 mm 41.34 in	1250 mm 49.21 in
1565 mm 61.61 in	1565 mm 61.61 in	1565 mm 61.61 in	1565 mm 61.61 in	2508 mm 98.74 in	2508 mm 98.74 in	2750 mm 108.27 in
240mm 9.45 in	240 mm 9.45 in	240 mm 9.45 in	240 mm 9.45 in	700 mm 27.56 in	700 mm 27.56 in	700 mm 27.56 in
1020 mm 40.16 in	893 mm 35.16 in	1020 mm 40.16 in	950 mm 37.40 in	1540 mm 60.63 in	1540 mm 60.63 in	1560 mm 61.42 in
596 mm 23.46 in	596 mm 23.46 in	700 mm 27.56 in	700 mm 27.56 in	733 mm 28.86 in	733 mm 28.86 in	860 mm 33.86 in
125 kg 275 lb	150 kg 330 lb	200 kg 440 lb	230 kg 440 lb	900 kg 1984 lb	1000 kg 2204 lb	1200 kg 2645 lb

Twin Column Machines

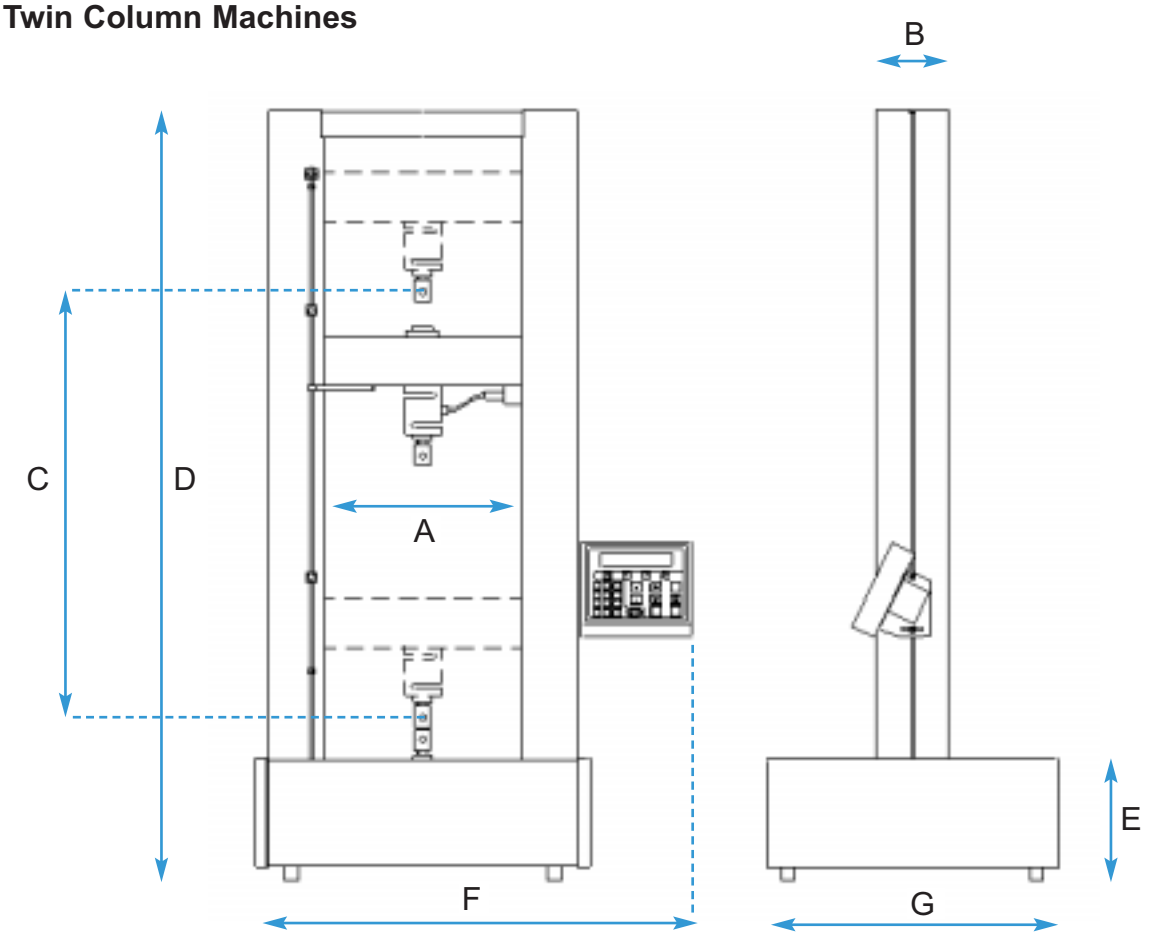
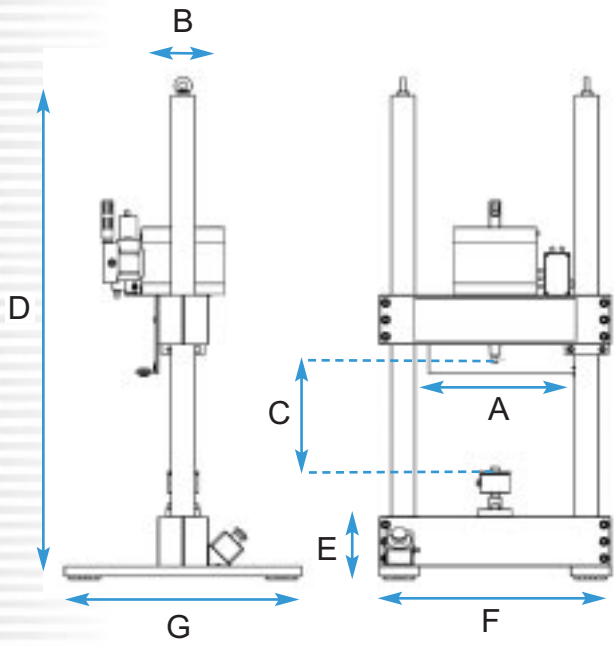


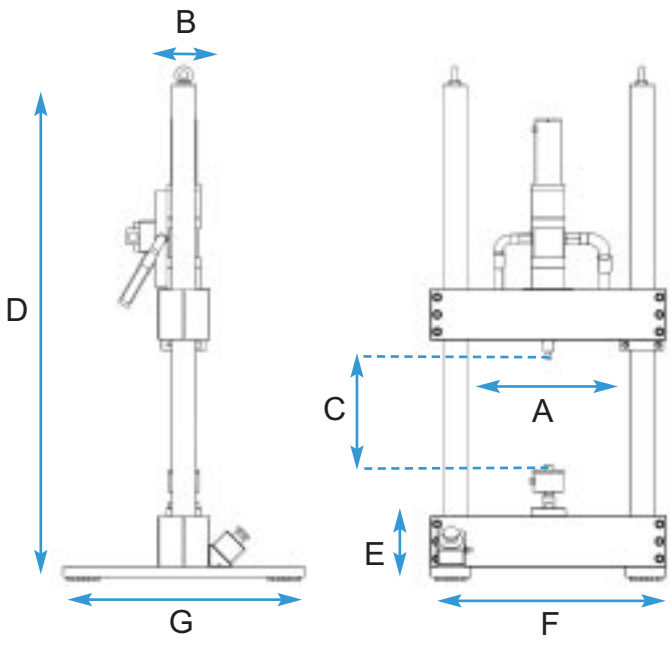
Table of Machine Dimensions - Servo Dynamic Systems

		Servo Pneumatic	Servo Hydraulic Bench	Servo Hydraulic Floor
A	Working Width	405 mm 15.94 in	405 mm 15.94 in	500 mm 19.68 in
B	Column Depth	60 mm 2.36 in	60 mm 2.36 in	100 mm 3.94 in
C	Max Travel	650 mm 25.59 in	650 mm 25.59 in	900 mm 35.43 in
D	Machine Height	1272 mm 50.08in	1272 mm 50.08 in	2250 mm 88.58 in
E	Base Height	150 mm 5.91 in	150 mm 5.91 in	920 mm 36.22 in
F	Machine Width	585 mm 23.03 in	585 mm 23.03 in	800 mm 31.50 in
G	Machine Depth	600 mm 23.62 in	600 mm 23.62 in	603 mm 23.74 in
	Machine Weight	235 kg 518 lb	235 kg 518 lb	1200 kg 2645 lb

Servo Pneumatic



Servo Hydraulic Bench



Servo Hydraulic Floor