



## ELECTRO-HYDRAULIC SERVO CONTROL UNIVERSAL TESTING MACHINE 1000kN

Standard: BS EN 10002-1, ISO 7500-1, ASTM A370

### Tensile & Compression

This NL 6000 Series UTM used for the mechanics property test such as the tensile, bending, compression and etc to various metallic and non-metallic materials. The testers have been developed according to BS EN 10002-1, ISO 7500-1 & ASTM A370 "Metal Tensile Test Method" with the adoption of the electro-hydraulic servo control and electronic measurement. It can automatically process the test result for statistical purpose and print default or user-defined test report.

NL 6000 Series UTM use the micro-computer automatic data collection and processing, real time display of the test data and curves. It has the functions such as unlimited storage of test result in the computer, printing the test results and curves, processing the batch test result report, managing the database and so on. It also has the network interface. It can automatically seek the multiple technical parameters such as elastic module E upper yield strength ReH, lower yield strength REL, stipulated non-proportional elongation intensity  $R_r$ , tensile strength  $R_m$ , stipulated total elongation intensity  $R_t$ , yield point percentage elongation and etc.

NL 6000 Series UTM have the features such as the high precision, advantage performance, high reliability, convenient operation and etc.

### OPERATION DISPLAY

Computer Screen Display unit with the following functions

- \*Test force display
- \*Break detection
- \*Full auto test range switching function
- \*Auto return function
- \*Peak / Break value display function
- \*Test conditions

### SAFETY FEATURES

The system include with the followings safety features

- \*Emergency stop switch
- \*Overload limit
- \*Ram-stroke limit
- \*Hydraulic pump motor over-current & over heating protection
- \*Leak / over current protection
- \*Automatic stop control
- \*Safety Guard

### CONTROL & DATA PROCESSING SOFTWARE

- \*User friendly & easily due to clear and brief operation – operation interface
- \*Automatically save the test conditions & results
- \*User define test curves including : Stress / Strain, Force / Elongation, Strength / Time to suit various requirement
- \*Individual or combine display test curves on the same screen to compare with other several data at the same time
- \*Compatible with Microsoft Excel by import or export function
- \*Base of testing with digital sample break detection, auto ranging, auto calibration, quick tare & auto return facilities
- \*Exceeds all International Standards for accuracy, ASTM, DIN, ISO, JIS, EN, GB...etc
- \*Tension, Compression, Shear, Cycling & Creep Test facilities
- \*User define Real Time Display Including Load, Stress, Elongation, Strain, Speed or Time
- \*Advanced protection features with software setting or / & hardware switch upper & lower limit setting
- \*Operation fully control by computer
- \*USB communication system & ethernet
- \*Grips & fixtures for tension, compression, flexural, shear & products testing available
- \*Fully user define report including Report Sheet, Label, Chart & Bitmap or JPG
- \*Report sheet consist of Load, Elongation, Yield, Break, Stress Modulus, Strain, Tear Strength, Peel Strength etc
- \*Force display unit : kN,N,tons, & mN
- \*Stress display unit : GPa,Mpa,Pa,psi,N/sq.mm,Kg/sq.mm & Tons/sq.inch
- \*User define Yield Strength, Young Modulus, Offset Setting, Graph Offset, Export & Import test data, ...etc

### Unique Feature :

- \*Over size prestressed 4 column with twin screw**
- \*High toughness fragment safety guard with transparence sliding door**
- \*High precision load cell ram**
- \*Built-in shock absorbing system on base mounting**
- \*Console Control Unit**

## 1000kN Specification

### Technical Specifications :

Model Number	NL 6000 X / 013N
Max Test Capacity	1000 kN
Accuracy Level	Class 1
Relative Error of Indicated Value	±1%
Effective Measurement Range	1% - 100 % F S (Full Range without binning)
Deformation Measurement Range	1% - 100 % F S
Relative Error of Deformation Indication	±1%
Relative Error of Displacement Indication	±1%
Displacement Measurement Resolution	0.001 mm
Compression Clearance	600 mm
Tensile Clearance	700 mm
Piston Stroke	200 mm
Relative Error of Stress Rate Control	±2%

Relative Error of Displacement	±1%
Rate Control	
Strain Rate Control Adjustment Range	0.00025 / 0.0025
Relative Error of Strain Rate Control	±2%
Force, Deformation, & Displacement	0.3% - 100% F S
Retention Control	
Relative Error of Force, Deformation & Displacement Retention Control	≤1%
Girder Lifting Speed	320 mm / min
Max. Test Speed	100 mm / min
Effective Distance Between 2 Column	455 mm
Round Specimen Clamping Diameter	Ø14 - Ø45 mm
Flat Specimen Clamping Thickness	Max. 40 mm Thick
Upper & Lower Compression Plate Size	Ø225 mm
Dimension (Frame)	810 x 700 x 2350 mm (LxWxH)
Dimension ( Control Console)	790 x 730 x 1600 mm (LxWxH)
Power	380~415V, 3ph,4kW,8.1A, 50/60 Hz
Weight (Control Console)	300 kg
Weight ( Frame)	2650 kg

**Unit Standard Accessories :**

NL 6000 X / 013 - P001	Flat Specimen Jaw Set (0~40mm)	1set
NL 6000 X / 013 - P002	Round Specimen Jaw Set A (14~32 mm Ø)	1set
NL 6000 X / 013 - P003	Round Specimen Jaw Set B (32~45 mm Ø)	1set
NL 6000 X / 013 - P004	Compression Platen Set (225 mm Dia.)	1set
NL 6000 X / 013 - P005	Bending Test Device with Mandrel	1set
NL 6000 X / 013 - P006	Footing Stopper Bar c/w Wall Plug (2 Bars & 4 Plug)	1set
NL YYU-25/100	Electronic Extensometer 100mm. gauge length with 25 mm deformation	1unit
NL CP-200	Computer Printer	1unit
NL SVP-2.2	<b>Servopack</b> Computer Printer Console Control Unit with Built-in Computer and Pre-Installed with TestMaster Software	1unit
NL 6000 X / TSL	2 Steps Ladder	1unit

\*1 Copy of Manual Instruction



**External Auto Grip**



**Front Grip**

**STANDARD ACCESSORIES**



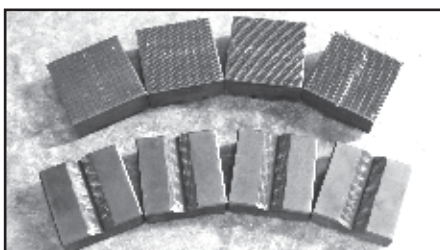
**Compression Plated Set**



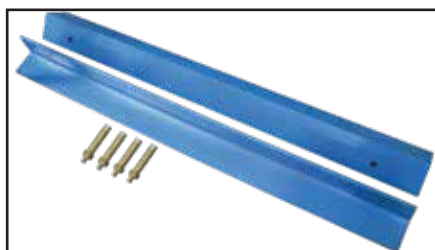
**Bending Jig**



**2 Steps Ladder**



**V-Shaped & Flat Jaws**

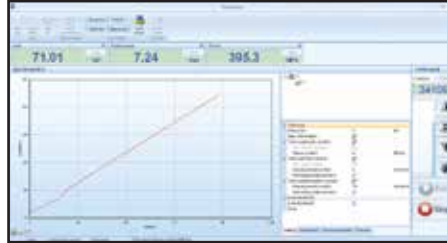


**Stopper Bar**

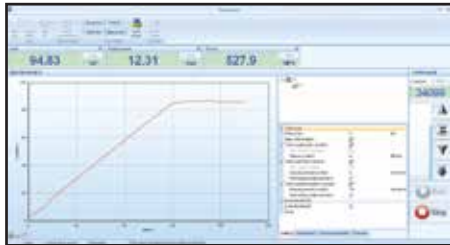
Stopper Bar

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**TEST REPORT SOFTWARE**



**Elastic Graph**



**Yield Graph**



**Strengthen Graph**



**NL YYU - 25/100**



**NL CP - 200**