AUTOMATIC STRENGTH TESTER

AUTODYN

MESDAN
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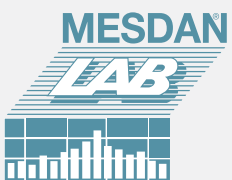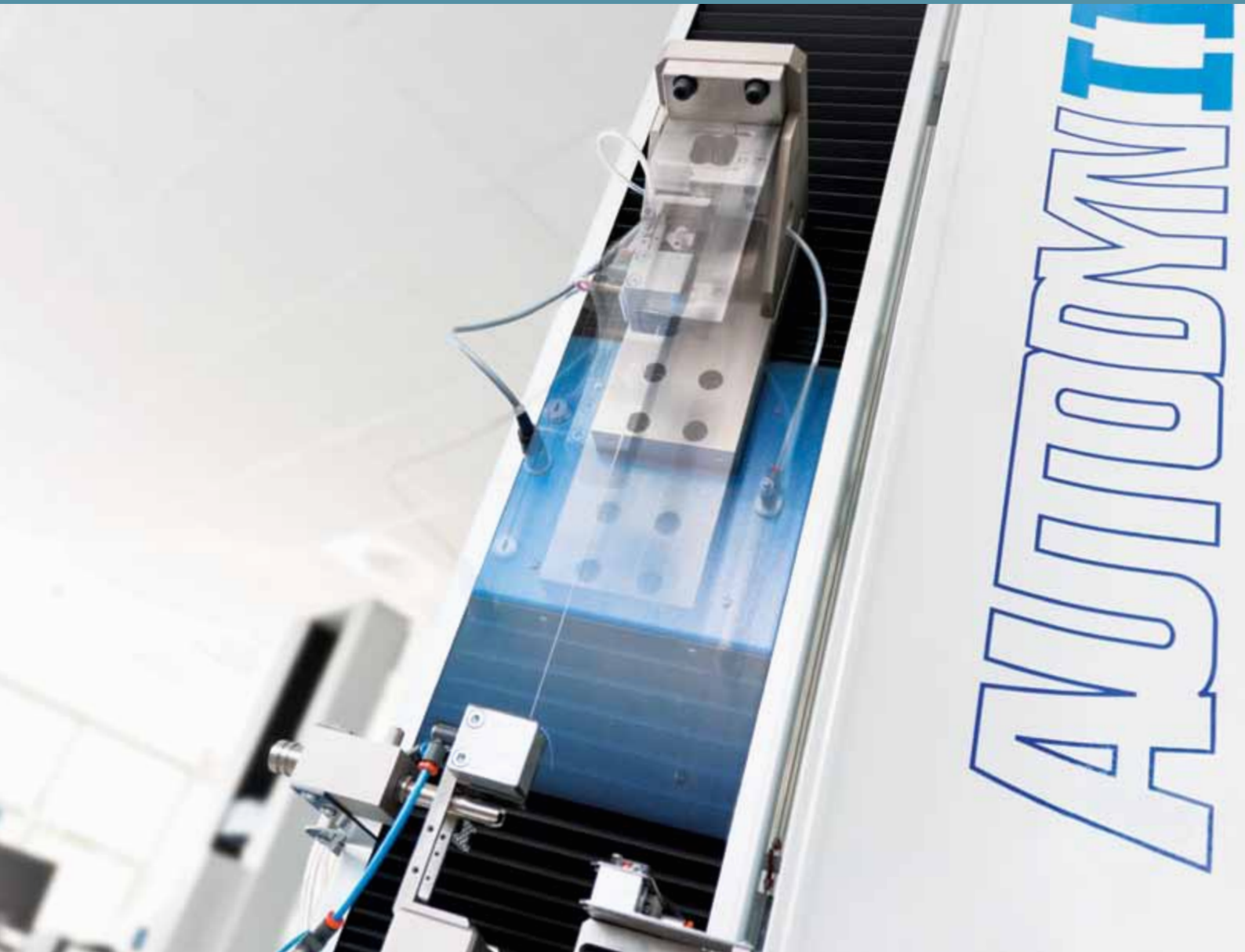
AUTODYN

Automatic Strength Tester

Description

Automatic Strength Tester, up to 24 positions, for testing the tensile strength of yarns. It can also test yarns, hanks and fabrics in semi-automatic mode.
AUTODYN is controlled by a flexible and easy to operate software, complying with the current International Textile Standards.
Versatile, accurate and reliable, thanks to a complete range of interchangeable clamps and load cells.
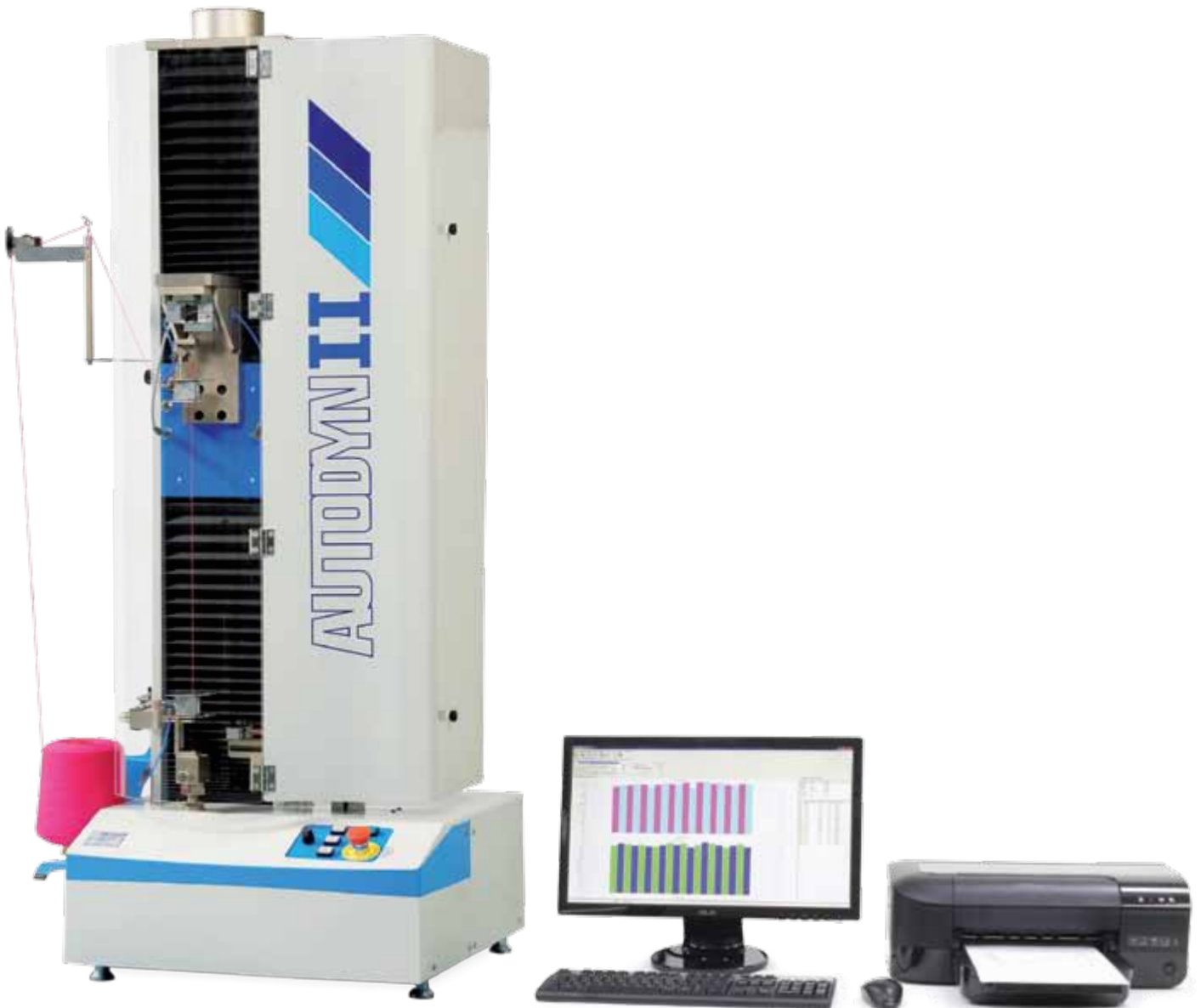
Modular testing features

Thanks to its modular features, AUTODYN can automatically perform traction tests on 24 different yarns or it can work, in the semiautomatic modality, on industrial yarns, hanks and fabrics.

Available models:

AUTODYN II code 2514 - AUTODYN 300 code 2513:
one position automatic strength tester for testing one single bobbin of yarn

AUTODYN II PLUS code 2514A - AUTODYN 300 PLUS code 2513A:
24 position automatic strength tester for testing up to 24 different yarn bobbins using the exclusive bobbin changing device "Auto cop changer". Multiple testing can be carried out either between bobbins of a same lot and yarn count or by grouping bobbins of different lots and/or with different yarn counts.

AUTODYN PLUS 36position is available on request

Mobile vertical creel **code 3102** is required when operating AUTODYN PLUS**,** available on request.

Thanks to the extreme modularity of the system, AUTODYN can be upgraded into AUTODYN II PLUS
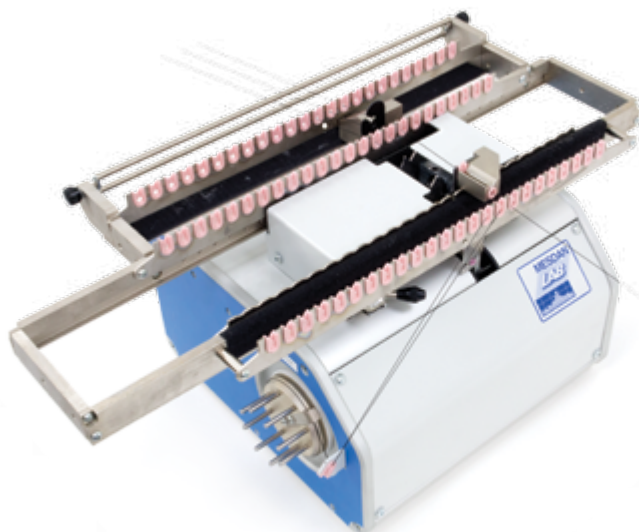
AUTOMATICALLY AUTODYN carries out

· Tensile tests on yarn bobbins

· Hysteresis tests on elastic yarns

SEMI AUTOMATICALLY AUTODYN can perform

· Traction, compression, tearing and adhesion tests on fabrics*

· Seam slippage tests

· Tensile tests on industrial, tyre-cord and kevlar yarns*

· Tensile tests on yarn hanks (LEA TEST)*

* pay attention to AUTODYN II maximum capacity!

Auto Cop Changer

Mobile vertical creel

Available models		Main features		
	code	positions	speed (mm/min.)	capacity (kN)
AUTODYN II	2514	1	10-5000	1
AUTODYN II PLUS	2514A	24	10-5000	1
AUTODYN 300	2513	1	10-1000	3
AUTODYN 300 PLUS	2513A	24	10-1000	3

Auto Cop Changer is included in AUTODYN PLUS versions

PC minimum requirements

AUTODYN must be connected to a PC with the following minimum requirements:
· 2.8 Gb Pentium IV
· 256 Mb Ram
· Windows operating system
· RS 232 serial port
· 1 USB port/1 parallel port

Supplied complete with

· Software
· Connection cables
· Compressed air filter with pressure regulator
· Yarn waste box
· Foot switch for pneumatic clamps

Accessories

Load cells
Four load cells available

	mode X1		mode in X10 *	
	Capacity (N)	Accuracy (cN)	Capacity (N)	Accuracy (cN)
1)	20	0.1	-	-
2)	100	1	10	0.1
3)	1000	10	100	1
4)	3000 **	100	300	10

Load cells manufactured by HBM - Hottinger Baldwin Messtechnik

**only for AUTODYN 300 and AUTODYN 300 PLUS

*the "x10" mode allows a 10 times increase of load cell accuracy within 10% of its capacity (for example, a 1000N cell will have two accuracy levels, 1cN from 0 to 100N range and 10cN from 100N to 1000N range)
For cells with 20N capacity such mode is deactivated.

Clamps

Wide range of mechanical and pneumatic clamps for testing yarns, hanks and fabrics.

Pneumatic clamps for yarns MINI up to 20N
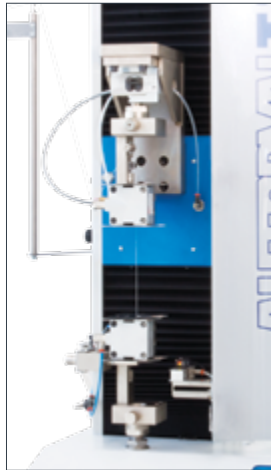
Pneumatic clamps for yarns MAXI up to 50N

Mechanical clamps for yarns

Clamps for yarns (high tenacity) with conical introducer

Mechanical clamps for high tenacity yarns Scott type 100-300

Mechanical clamps for hanks (LEA test)

Mechanical clamps for fabrics

Pneumatic clamps for fabrics

Zipper testing Tool kit

Example of interchangeable grips suitable for seam slippage and fabrics

Fabric clamps of different width available with interchangeable gripping surfaces (knurled, with rubber and grab type).

In addition to the clamps illustrated above, lots of other models are available on request.

When using the Autodyn in the semi-automatic mode the food switch is required to operate pneumatic clamps.

Calibration Reports & Calibration Service available on demand (either when placing the order or as period service).

Use UPS **code 2341.900** (100W) is recommended, available on request.

Mobile vertical creel **code 3102** is required when operating AUTODYN PLUS **code 2514A - code 2513A**, available on request.

PC and printer, available on request.

Software

The control software of our instrument is:
· easy to operate
· open towards the most common application software
· in compliance with international textile standards

The operator can perform generic tests by setting all the parameters or by selecting the routine corresponding to a specific International Standard. In this case the operator must set only the parameters called for by the Standard and the results are produced in conformity to the same. Presently, there are more than 30 modules available in the software allowing:
· traction tests on yarns, hanks, industrial yarns, fabrics and non-woven
· hysteresis loop tests
· fabrics tearing tests
· covering adhesion tests
· in compliance with ISO, ASTM, BS, DIN, IWS, UNI and M&S standards

An on-line guide gives the operator information on the chosen Standard.

All values can be either printed or directly exported into an Excel sheet in case the operator is interested in statistical results different from the ones requested by the International Standards which are automatically calculated by our software.

The set cycle and the result can be stored in a databank ready to be recalled. The software works in several languages, and the Data Bank can be personalized by the enduser according to his specific needs.

List of available numerical results

· Maximum strength peak measured in cN, N, daN, g, kg, lb
· Maximum elongation in mm or % referred to the maxi mum strength
· Tenacity: maximum strength related to the sample count (cN/tex, cN/Dtex, RKM). CLSP for hanks (lb x Ne)
· Work in joule: area below the strength/elongation curve
· Breaking time in sec. from test start until sample breakage

List of strength and elongation statistical results:

· Maximum value
· Minimum value
· Mean value
· Standard deviation
· Coefficient of variation CV%
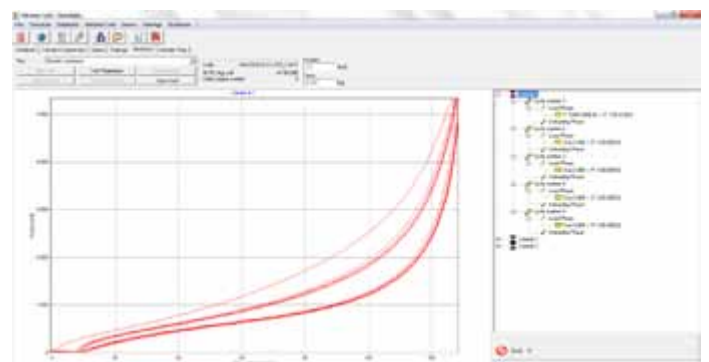· Interval of Confidence 95%

List of available graphs:

· Strength/elongation
· Strength histogram
· Elongation histogram
· Strength/elongation mean curve
· Strength distribution
· Elongation distribution

Elongation distribution graph

Strength distribution graph
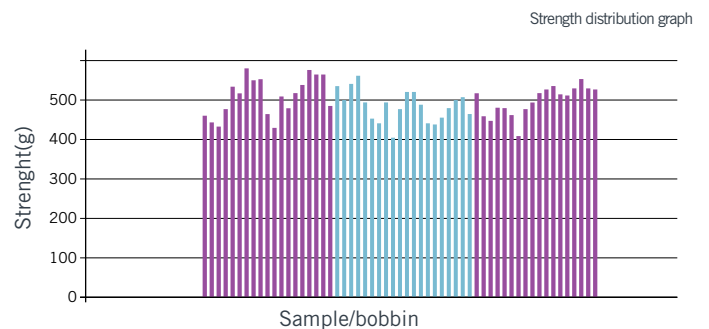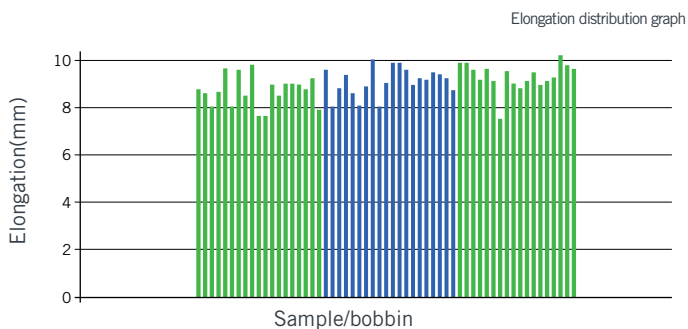
Example of Traction test
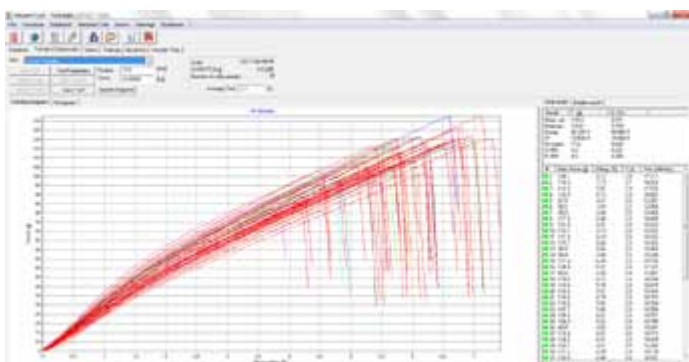
Example of Hysteresis cycle test

At the end of a test the operator can choose the report to be printed:
· report with statistical results referred to single test
· report with total statistical results
· report with graphical representation of the results

Mesdan S.P.A.
Via Masserino,6 Raffa di Puegnago Italy
Tel.0039 0365653111

Test of yarn Traction with MesdanLab Strength Tester

| Customer code | TEST code Prova | TEST Date | 21/03/21013 | 11:36 am |

Bobbin 1   Bobbin 2   Bobbin 3

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Test of yarn Traction with MesdanLab Strength Tester

| Customer code | TEST code Prova | TEST Date | 21/03/21013 | 11:36 am |

Sample Descrption		Sample Number	59
Parcel	Lot	Count	1 (tot)
Material			
Examiner			
Sample Length	500 (mm)	Load cell ID/FS (kg)	1/2
Clamp Speed	1000 (mm)	Pretension	0 (g)
Test Machine			

Observations

Total statistical results   Statistical results of bobbin: 1

	Force (g)	Elongation (mm)	Tenacy (RKM)		Force (g)	Elongation (mm)	Tenacy (RKM)
Maximum	577,8 (8)	10,320 (57)	577,800 (8)	Maximum	577,8 (-1)	9,840 (-1)	577,800 (8)
Minimum	403,1 (29)	7,560 (48)	403,100 (48)	Minimum	408,4 (-1)	7,680 (-1)	408,400 (48)
Average	491,0	9,034	490,976	Average	500,6	8,697	500,560
Range	35,582 (%)	30,553 (%)	35,582 (%)	Range	33,842 (%)	24,836 (%)	33,842 (%)
CV	9,179 (%)	7,267 (%)	9,179 (%)	CV	10,623(%)	7,723 (%)	10,623 (%)
Deviation	45,1	0,656	45,069	Deviation	53,2	0,672	53,175
IC95%	11,5	0,168	11,500	IC95%	23,3	0,294	23,304
				IC99%	30,6	0,387	30,627

example of report with statistical results and graphical representation referred to 60 tests executed on 3 different yarn bobbins

AUTODYN

DESCRIPTION

Automatic Strength Tester for testing the tensile strength of yarns up to 24 positions automatically. It can also test yarns, hanks and fabrics in semi-automatic mode.
AUTODYN is controlled by a flexible and easy to operate software, complying with all the current International Textile Standards.
Versatile, accurate and reliable, thanks to a complete range of interchangeable clamps and load cells.

ACCESSORIES CLAMPS

· Pneumatic clamps for yarns MINI up to 20N and MAXI up to100N
· Clamps for yarns (high tenacity) with conical introducer
· Mechanical clamps for yarns
· Mechanical clamps for high tenacity yarns Scott type 100-300
· Mechanical clamps for hanks (LEA test)
· Pneumatic clamps for fabrics
· Mechanical clamps for fabrics
· Zipper testing Tool kit
· Interchangeable grips suitable for seam slippage and fabrics
· Fabric clamps of different width available with interchangeable gripping surfaces (knurled, with rubber and grab type).
· In addition to the clamps illustrated above, lots of other models are available on request.

REFERENCE STANDARDS

Built according to: ISO, ASTM, BS, DIN, IWS, UNI
Officially approved by Mark & Spencer

Photograph and description of present leaflet have to be considered as purely indicative and not binding
Rel. En 2014-05

TECHNICAL FEATURES

· Testing principle: CRE (Constant Rate of Extension)
· Functioning mode: automatic and semi-automatic
· Interchangeable load cells AUTODYN II; capacity: 20N, 100N, 1000N; linear deviation 0,05%
· Interchangeable load cells AUTODYN 300; capacity: 20N, 100N, 1000N, 3000N; linear deviation 0,05%
· Maximum extension: 1000 mm (clamps and load cell not included)
· Adjustable distance between clamps
· Mechanical and pneumatic clamps for yarns, hanks and fabrics
· Settable and automatic pretension
· Movement resulting from one ball bearing screw Brushless motor with epicyclic reducer
· Safety and protection: emergency button, automatic stop at the maximum capacity of the instrument, plexiglas protection cover, for the highest safety and protection of the operator
· Absorption power: 400VA
· Air consumption: 9 m3/h (approx., depending on the type of test)
· Noise level: ≤70 db
· Predisposed to be connected to the automatic; cop changing device (Auto Cop Changer) with 24 yarns capacity

DIMENSIONS / POWER SUPPLY

Weight: 85 Kg
Dimensions: (L) 610 x (W) 610 (H) 1340 mm.
Power supply: 110/220V-50/60Hz single phase
Air supply: 6 bar

Mesdan