

## load cells

The choice of the load cell and the clamps is of the utmost importance for a correct performance of the test according to the strength of the samples and to the reference standard.

Our Strength Testers can fit load cells with different range and precision, for example, on code 2515 the operator can fit load cell 50.000 N to test kevlar belts, and then replace it with a load cell 20 N to test elastomers with low breaking load (ex. 30 cN). Working within 10% of the load cell capacity, the precision of the strength reading can be improved ten times.

LOAD CELL (N)	ACCURACY X1 (cN)	MAXIMUM CAPACITY X1	ACCURACY X10 (cN)	MAXIMUM CAPACITY X10 (N)
20	0,1	full range of load cell	not available	not available
100	1		0,1	10
1.000	10		1	100
5.000	100		10	500
10.000	100		10	1.000
50.000	1.000		100	5.000

Load cells can be replaced in a fast (a couple of minutes) and easy way, since they need to be calibrated only the first time they are used, while they are automatically identified by the strength tester at the subsequent changes. For all companies operating ISO 9001, Mesdan offers a service of calibration of the Strength Tester which can be requested by customer when purchasing the instrument, and subsequently through a contract of periodical verification.

## grips



Mechanical grips for yarns



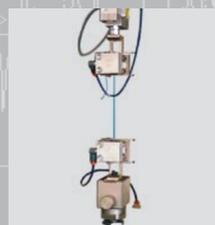
Mechanical grips for yarns Scott type



Grips for hanks (LEA test)



Pneumatic grips for yarns Scott type



Pneumatic grips for delicate yarns (up to 10 N)



Mechanical grips for fabrics' tensile and Grab test



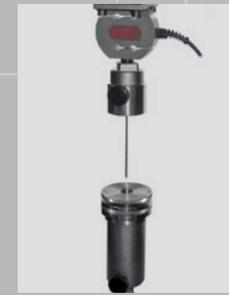
Pneumatic grips for fabrics' tensile and Grab test



Attachment for fabrics' perforation



Ribbons high tenacity clamps



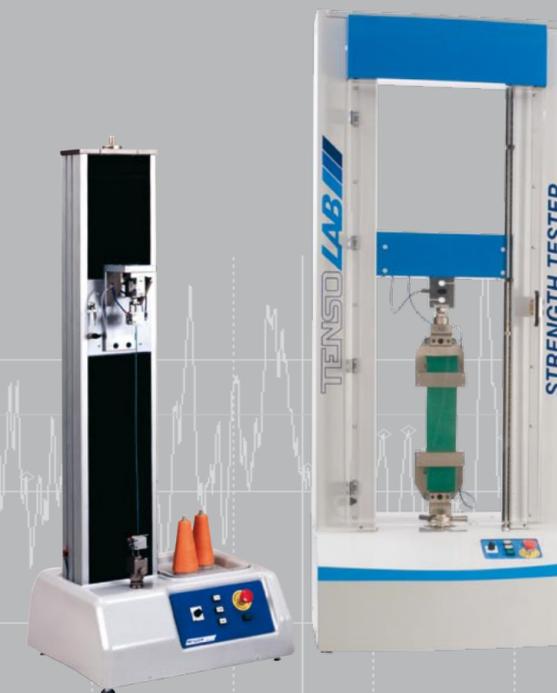
Tool for perforation test of non-wovens Persoz type

Our Strength Testers fit a huge range of mechanical and pneumatic clamps to test yarns and fabrics in accordance with the current standards (some of the available clamps are shown in the side picture).

All clamps are interchangeable, and designed to be mounted in an easy and fast way.

The unique design and the robust construction guarantee an effective clamping of the sample to test without altering its characteristics, even in case of slippery samples, or at the maximum capacity.

Especially, pneumatic clamps are suitable to test samples with a strength up to 3000 N since they eliminate the risk of damaging the sample during the clamping with the subsequent invalidation of the test itself (in case of slippery fabrics with resistance around 3000 N, we suggest the use of mechanical clamps which avoid the slippage between clamps).



## semi-automatic STRENGTH TESTERS

# TENSO LAB

TensoLab Strength Testers are conceived and produced drawing on Mesdan experience in high precision mechanics, which guarantees high quality and innovative solutions since 1952.

Indeed, Mesdan is world leader in the production of mechanical and pneumatic devices for joining yarns, and has a tradition in the production of strength testers and other testing equipment lasting more than ten years.

A vanguard electronics supporting an outstanding software developed in close co-operation with the endusers allows testing the strength of different textile materials

- with precision and care
- with simplicity and productivity
- with flexibility and in compliance with the international standards
- with the highest repeatability of the results

A diffused network of representatives and service centres spread all over the world offers a qualified consulting service helping customers to choose the configuration of the instrument and guaranteeing a skilled and prompt after-sale service.



# DOUBLE COLUMN Tensolab

10.000 N code 2516  
50.000 N code 2515

**Double column Strength Testers:** movement resulting from two ball bearing screws; structure strengthened by guiding columns which prevent any strain or buckling when the structure is under loading.

Particularly suitable to test samples whose strength value is higher than 3000 N (i.e., technical yarns and fabrics, ropes, ribbons and geotextiles).

**Code 2516** with maximum capacity up to 10.000 N and a wide range of pneumatic and mechanical clamps.

**Code 2515** with maximum capacity up to 50.000 N and a wide range of pneumatic and mechanical clamps.

Both Strength Testers are controlled by a software which runs all their functioning phases.

Thanks to the specific modular software, it is possible to perform a full range of textile tests including traction, compression, tearing, seam slippage, hysteresis loop in compliance with the international standards.



More details are available in the "Technical Features" table.

software

The control software of our Strength Testers has been designed, and constantly updated, in close co-operation with the most important textile laboratories and endusers, hence it is

- effective
- easy to operate
- open towards the most common application software
- in compliance with the current textile standards
- it runs with the most recent operative systems, and can be installed on a IBM PC or compatible, which follows some minimum hardware requirements.

The software is composed of three main sections: control program (of machine functions), data storage program, program to run the different application modules.

The operator can perform generic tests which can be set as desired at all parameters, or perform guided tests choosing the module related to a specific standard allowing selection of only the parameters referred to in that standard, and making reports and graphs in accordance to the same.

# our line

# SINGLE COLUMN Tensolab

3.000 N code 2512 A

**Single column Strength Tester:** movement resulting from a ball bearing screw; it is controlled by a software which runs all the functioning phases.

**Code 2512A** thanks to the specific modular software, allows performing tests on traction, compression, tearing, seam slippage and hysteresis loop in compliance with the international standards.

It can use different load cells easy to change with maximum range 3000 N, and a huge range of pneumatic and mechanical clamps.



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

Currently, the available modules are in excess of 30 and allow performance of traction tests on yarns, hanks, fabrics, non-wovens, geotextiles, ropes; compression and perforation tests; strength and seam slippage tests; tearing tests, hysteresis loop tests in compliance with ISO, ASTM, BS, DIN, IWS, UNI and M&S standards.

The hysteresis module stands out for its flexibility, the operator can set the number of cycles giving limits for strength and/or elongation with pauses under loading or unloading and decide how and when sample data.

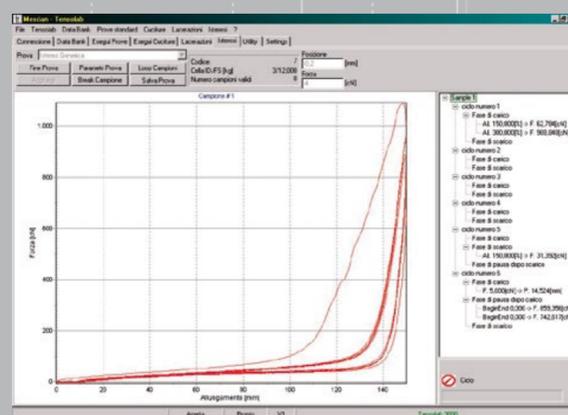
The set cycle can be stored in a Data Bank ready to be recalled and used.

All values can be printed, or directly exported in a Excel sheet for a further elaboration and for statistical calculations. Thanks to this method, the operator can set the test of hysteresis according to the internal procedure of his company, and/or perform tests according to the international stan-

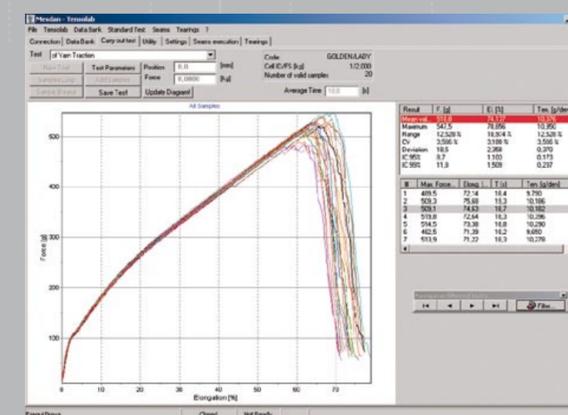
# technical features

**NOTE** <sup>(1)</sup> Maximum capacity : 5000 N  
<sup>(2)</sup> Maximum extension, load cell & clamps excluded (800 mm of usable test space)

	SINGLE COLUMN		
	2512 A	2516	2515
Maximum capacity	3.000 N	10.000 N	50.000 N
Available load cells / accuracy of strength reading	20 N / 0,1 cN 100 N / 1 cN 1.000 N / 10 cN 5.000 N / 100 cN <sup>(1)</sup>	20 N / 0,1 cN 100 N / 1 cN 1.000 N / 10 cN 5.000 N / 100 cN 10.000 N / 100 cN	20 N / 0,1 cN 100 N / 1 cN 1.000 N / 10 cN 5.000 N / 100 cN 10.000 N / 100 cN 50.000 N / 1000 cN
Load caell accuracy	0,05		
Movement method	CRE (Constant Rate of Extension)		
Ball bearing screw	yes		
Maximum extension <sup>(2)</sup>	1000 mm	1200 mm	1200 mm
Testing speed	from 10 to 1000 mm/min	from 250 to 500 mm/min	from 0,5 to 500 mm/min
Speed return	10000 mm / min		
Inner distance between columns	400 mm		
Pc dependent	Pc not included in the supply		
Software	For Windows environment with many available modules complying with the international standards - Not available for 2512B/D		
Accessories - Optionals	Load cells, pneumatic and mechanical clamps complying with all international standards, foot switch for pneumatic clamps, PC and printer		
Temperature during functioning	from 10°C to 35 °C		
Storage temperature	from -20°C to 60 °C		
Work humidity	from 10% to 90% - without condensing		
Power supply	110 / 220 V - 50 / 60 Hz		
Dimensions	61 x 60 x 134 cm	90 x 60 x 190 cm	
Weight	83 Kg	260 Kg	280 Kg



Example of Hysteresis test



Example of Traction test

dards. The program works in several languages, and many fields of the Data Bank can be personalized by the enduser according to his specific needs