ADF- Automatic Yarn Strength Tester

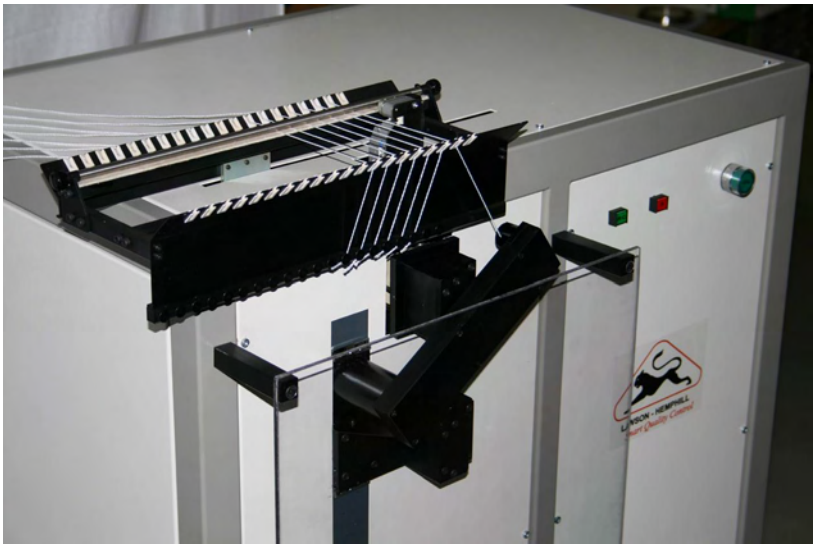
LAWSON - HEMPHILL
Smart Quality Control

The model **ADF-Automated Yarn Strength tester** is a robust, single end yarn tester designed to exceed the most stringent testing requirements for measuring yarn strength. The **ADF-Automated Yarn Strength tester** is capable of providing a variety of calculations including tensile strength, elongation, tenacity, work and modulus of an extensive range of yarns.

The unit is a fully automatic yarn tester and can continuously measure up to 20 bobbins of different types of yarns. Test result and data storage is made possible through the instruments serial port to a PC to collect test information. Advanced software provides multiple plots, force/elongation histogram, linear regression and average force curve of a bobbin.

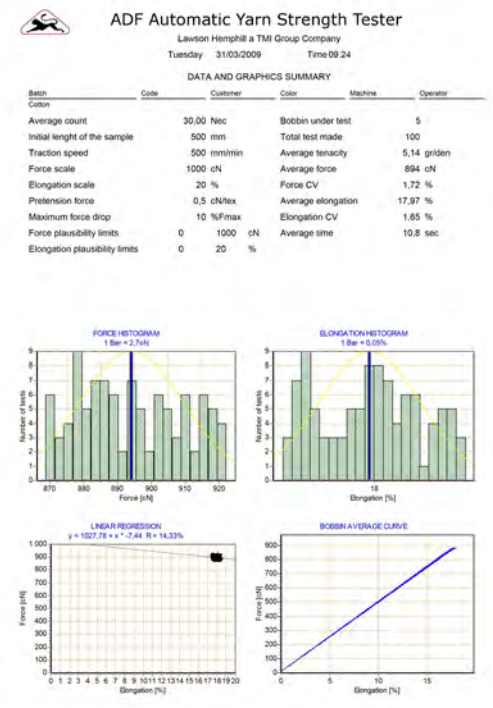
Meets Standards: ASTM 2256, BS 1932/1, DIN 53834/1, UNI EN ISO 2062

AUTOMATIC YARN STRENGTH TESTER



◀ *During a test, the mobile clamp quickly positions the yarn in place for a measurement. The sample is then pulled to failure and the wasted yarn is vacuumed away. The test results and data are automatically stored. The mobile clamp then returns to the staring position to begin a new test. This operation automatically continues for a pre-set number of tests or until the entire bobbin is tested.*

TEST RESULTS



ADF Automatic Yarn Strength Tester

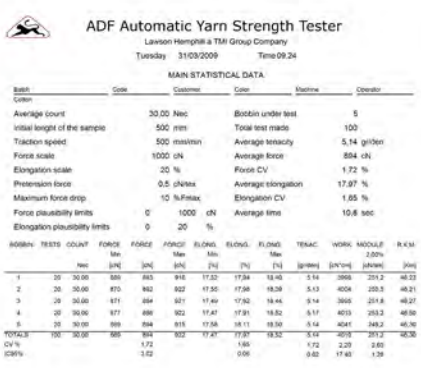
Lawson Hemphill a TMI Group Company

Tuesday 31/03/2009 Time 09.24

DATA AND GRAPHICS SUMMARY

Batch	Code	Customer	Color	Machine	Operator
Cotton					
Average count	30,00 Nec		Bobbin under test	5	
Initial lenght of the sample	500 mm		Total test made	100	
Traction speed	500 mm/min		Average tenacity	5,14 gr/den	
Force scale	1000 cN		Average force	894 cN	
Elongation scale	20 %		Force CV	1,72 %	
Pretension force	0,5 cN/tex		Average elongation	17,97 %	
Maximum force drop	10 %Fmax		Elongation CV	1,65 %	
Force plausibility limits	0	1000 cN	Average time	10,8 sec	
Elongation plausibility limits	0	20 %			

▲ Data and graphics summary chart



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MAIN STATISTICAL DATA

Batch	Code	Customer	Color	Machine	Operator
Cotton					
Average count	30,00 Nec		Bobbin under test	5	
Initial lenght of the sample	500 mm		Total test made	100	
Traction speed	500 mm/min		Average tenacity	5,14 gr/den	
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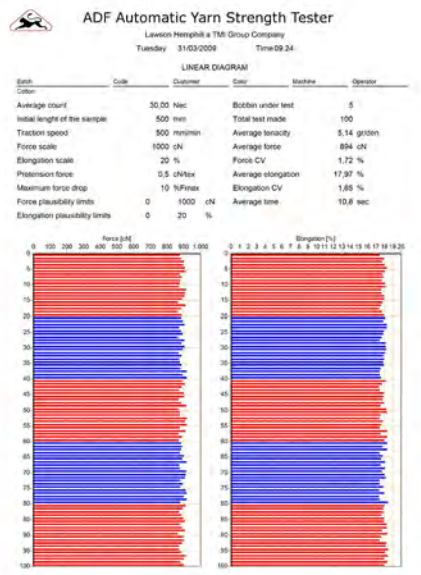
Maximum force drop	10 %Fmax		Elongation CV	1,65 %	
Force plausibility limits	0	1000 cN	Average time	10,8 sec	
Elongation plausibility limits	0	20 %			

BOBBIN	TESTS	COUNT	FORCE Min [cN]	FORCE [cN]	FORCE Max [cN]	ELONG. Min. [%]	ELONG. [%]	ELONG. Max [%]	TENAC. [gr/den]	WORK [cN*cm]	MODULE 2,00% [cN/cm]	R.K.M. [km]
		Nec										
1	20	30,00	886	893	918	17,32	17,94	18,48	5,14	3966	251,2	48,23
2	20	30,00	870	892	907	17,50	17,98	18,39	5,13	4004	255,5	48,21
3	20	30,00	871	894	921	17,49	17,92	18,44	5,14	3995	251,8	48,27
4	20	30,00	877	896	922	17,47	17,91	18,52	5,17	4013	253,3	48,59
5	20	30,00	899	894	915	17,58	18,11	18,59	5,14	4041	249,2	48,76
TOTAL	100	30,00	886	894	922	17,47	17,97	18,52	5,14	4013	251,2	48,36
CV %				1,72			1,65		1,72	2,20	2,60	
C95%				0,62			0,06		0,62	17,40	1,39	

▲ Report showing available ADF test results and statistics for 20 tests



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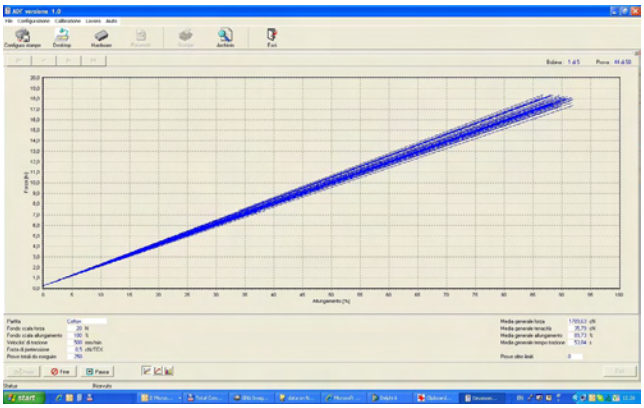
LINEAR DIAGRAM

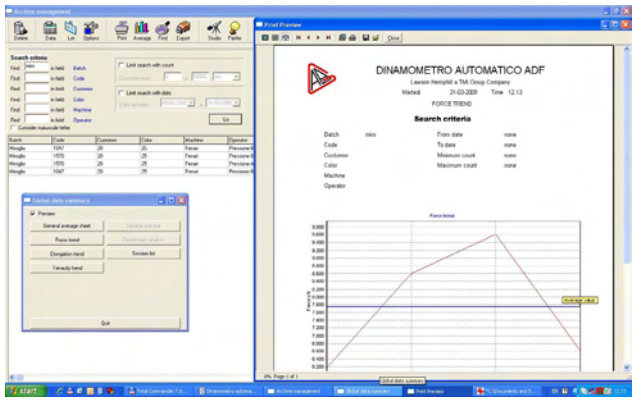
Batch	Code	Customer	Color	Machine	Operator
Cotton					
Average count	30,00 Nec		Bobbin under test	5	
Initial lenght of the sample	500 mm		Total test made	100	
Traction speed	500 mm/min		Average tenacity	5,14 gr/den	
Force scale	1000 cN		Average force	894 cN	
Elongation scale	20 %		Force CV	1,72 %	
Pretension force	0,5 cN/tex		Average elongation	17,97 %	
Maximum force drop	10 %Fmax		Elongation CV	1,65 %	
Force plausibility limits	0	1000 cN	Average time	10,8 sec	
Elongation plausibility limits	0	20 %			

▲ Linear diagram with 100 samples tested

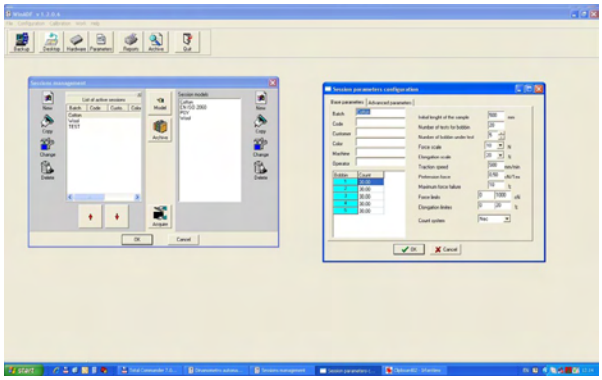
SOFTWARE



▲ Multiple curve plot of force/elongation measurement



▲ Trend analysis curve for force, elongation and tenacity



◀ Set up screen allows the selection of critical data collection parameters before test sequence

SOFTWARE SPECIFICATIONS

Compatibility	Windows XP and Vista
Automated Testing Features	Automatically test up to 20 different bobbins with different sample settings (Count, Speed, Pre-tension, etc.)
Print Features	Programmable scheduling of print options to include changeable graph font and colors, include company letterhead and logo, automatic or manual print of the selected pages at the end of the test.
Test results in schedule	Minimum, average and maximum force; minimum, average and maximum elongation; tenacity; work; modulus; R.K.M.; time; count. Statistical calculation of CV% and confidence interval to 95 or 99%. All calculated on single bobbin and on totals. Single values of Force, Elongation, Modulus, Work and Time.
Graphs	Linear Diagram, Elongation Histogram, linear regression, average curve or series of average curve of the bobbins, data and graphs summary
Database	Ability to recall a series of tests, recall by sample ID or bobbins. Combine results and graphs into one report. Analysis of results against previous data or previous plots and standards.
Report Configuration	Allow operator to configure up to 10 different yarn results for a variety of instruments into one general laboratory report.
Verify calibration	Calibration routine of the system and load cell directly in the instrument software, ability to recall previous calibration information for review
Language	Supports English and Italian Languages, other languages available.

SPECIFICATIONS

ADFW	Automatic Yarn strength tester complete with one cell load, one set of clamps with faces, 20 positions creel - max. diameter 250 mm (9.8 in)
Measure method	C.R.E.- Constant Rate of Extension
Available Load Cells	20N, 50N, 200N, 500N
Speeds	20-5000 mm/min. (.78-197 in/min.)
Specimen length	100-500 mm (3.9- 19.6 in)
Bobbins	Can test up to 20
Power supply	110V/60 Hz or 220 V/50Hz
Power consumption	1000 Watt
Air requirements	6 Bar, 90 PSI, 3,5 l/min.
Dimensions	79 x 50 x 156 cm (31 x 19.7 x 61.4 in)
Weight	209 Kg. (460 lbs)

ACCESSORIES AND SPARE PARTS

ADF20N	Cell load 20N
ADF50N	Cell load 50N
ADF200	Cell load 200N
ADF500	Cell load 500N
ADFAT	Clamps high tenacity
ADFBT	Clamps low tenacity
ADFALL	Aluminium faces
ADFGOM	Rubber cover faces
ADFPLA	Plastic cover faces
ADFPE	Calibration weight

Contact us today for more information on the ADF or any Lawson Hemphill product,

Please call us at 1-508-679-5364, or

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Smart Quality Control

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