

Art. No. S81838



M.C. TEC

Stand Alone



Universal Tester

For various tensile and pressure tests.

For:



✓ PAPER



✓ BOARD



✓ TISSUE



S818380001 Universal Tester 650mm
S818381136 modification pneumatic
S818381044 500N Load Cell
With pneumatic clamps



MOST IMPORTANT BENEFITS:

- ✓ Robust construction with two frictionless spindles
- ✓ Easy operation via touch screen
- ✓ Exchangeable load cell
- ✓ Fast return of the clamps after the test

Produced by

FRANK-PTI
QUALITY TESTING INSTRUMENTS

SUBSIDIARY OF  Dier-Hannover

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PRODUCT DESCRIPTION

The universal tester has been specially developed for different tensile and pressure tests on various materials (paper, board, tissue) and is outstanding in its ease of use and high levels of accuracy, even under heavy loads. The sample holder and the load cell can be exchanged according to requirements. The unit is operated via a rotatable touch screen, from which the different test methods can be selected, and which also displays values and curves. To prevent wear to the touch screen, the start and stop buttons are mounted separately on the unit. The universal tester is equipped with the standard FRANK-PTI connection.

TEST DESCRIPTION

The load cell and sample holder required for the selected test procedure are attached to the test unit, and the corresponding test program is selected from the touch screen. After a brief reference operation, the sample is tensioned and assigned a test series (MD/CD) via the touch screen. The test procedure is begun by pressing the start button. When the test is complete, the upper sample clamp travels automatically to the start position and the test strip can be removed. The test results are displayed numerically and graphically on the touch screen. If more than one MD and CD test is carried out, the results can be compared and displayed as a ratio.



Tensile test with manual clamps
Available with different clamping surfaces and coatings

TECHNICAL DATA

DEVICE / INSTRUMENT

- Robust construction with two frictionless spindles
- Operation via touch screen
- Test samples of measurements series dividable (MD/CD)
- Ration calculation (MD/CD) and display of statistics
- Exchangable load cell
- Measuring force up to 2.000N
- Fast return of the clamps after measurement
- Separate Start and Stop buttons
- FRANK-PTI standard connections
- Compatible with ProbeNet

APPLICABLE STANDARDS

DIN ISO 1924-3
ISO 1924-2
Tappi T494 | T 456
Finat 1-5
DIN 53504
DIN EN ISO 9073
*more Standards on request

MEASUREMENT

Units: (extract)	Max. force [N] LB tension length [km] Z-energy absorption capacity [J/m ²] S-width-related breaking force [N/m] S-width related breaking force [KN/m] Stretch at break [%] Iz-Index of energy absorption capacity [J/g] I-Index of breaking force [Nm/G] Elongation [mm] E-module [N{mm ²] and many more acc. to the chosen test method / standard
Conversion: Statistics:	possible via factor tool Min./Max./ Standard dev. / Var. coeff. etc.
Measuring accuracy: Force resolution: Test speed: Measuring force:	+ - 1 0,1 N 0,1-600mm/min 1-2kN one spindle (acc. load cell) 1-50kN double spindle (acc. Load cell)
Max. travel way S818380000	450mm 157+-3mm (depending on tool)
S818380001	650mm 615+-3mm (-tools)
S818380002	950mm 915+-3mm (-tools)
S818380005	1080mm 960 +-3mm (-tools)
Test space: S818380000 S818380001 S818380002 S818380003 S818380005	450mm - tools and adapter 650mm - tools and adapter 950mm - tools and adapter 980mm - tools and adapter 1080mm - tools and adapter 450mm width (double spindle)



Tensile tester with puncture test appliance



Wet tensile test acc. to FINCH

CONNECTION

Power:	100-240V / 50-60Hz
Power consumption:	<60W
Water:	-
Compressed air:	4-6bar
(only pneumatic version)	(quick coupling for hose 8mm)

DATA

RS232:	Data output
Ethernet:	Data output / MQTT
USB	Updates / service

DIMENSIONS

	L x H x W net
S818380000 450mm	510 x 1040 x 450 mm
S818380001 650mm	510 x 1240 x 450 mm
S818380002 950mm	510 x 1540 x 450 mm
S818380005 1080mm (doppelspindel)	510 x 1410 x 450 mm

Weight:	net
S818380000 450mm	63kg
S818380001 650mm	68kg
S818380002 950mm	72kg
S818380005 1080mm	200kg (double spindle)

ARTICLE / MODELS

S818380000	UPM work space 450 mm
S818380001	UPM work space 650 mm
S818380002	UPM work space 950 mm
S818380005	UPM work space 1080 mm (double spindle)

Machine modifications:

S818381136	Pneumatic version with hand switch
S818381137	Pneumatic version with foot switch
S818381148	Electropneumatic version without switches Clamp control via touch screen
S818381147	Electronically groping foot switch for electro-pneumatic version

Load cells:

S818381040	Load cell	10N
S818381041	Load cell	50N
S818381042	Load cell	100N
S818381043	Load cell	200N
S818381044	Load cell	500N
S818381045	Load cell	1kN
S818381046	Load cell	2kN

*more load cells on request

Recommended Accesories:

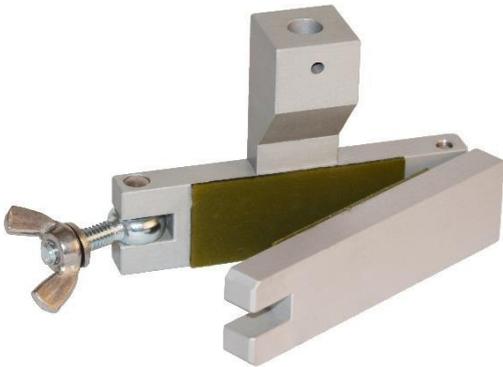
When configuring the tool and clamps we are happy to help you and provide these individually and according to your wishes

S406900001	ProbeNet Software incl. 1 license * We are happy to explain requirements on request
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Abstract of clamps

SCREWING CLAMP

up to 200 N



S818381006 screw type grip head 60mm 200N
(1 pair / 2 pcs)

SCREWING CLAMP

up to 1 kN



S818381021 screw type grip head 30mm 200N
(1 pair/ 2 pieces)

PNEUMATIC CLAMP

up to 7 kN



S818381011 pneumatic grip – without jaws 7kN
S818381012 blank jaws for pneumatic grip 40 x 60 mm

PNEUMATIC CLAMP

up to 2 kN



S818381014 pneumatic 60mm 200N blank jaws
Also available for up to 2 kN and different jaw toppings.

Different opening widths, jaw sizes, toppings

Mechanical and pneumatic jaws available on one and both sides.

Pneumatic grips need to fulfill special requirements to be compliant with the EG machinery directive, which influence the opening width, clamping speed and additional safety mechanisms.

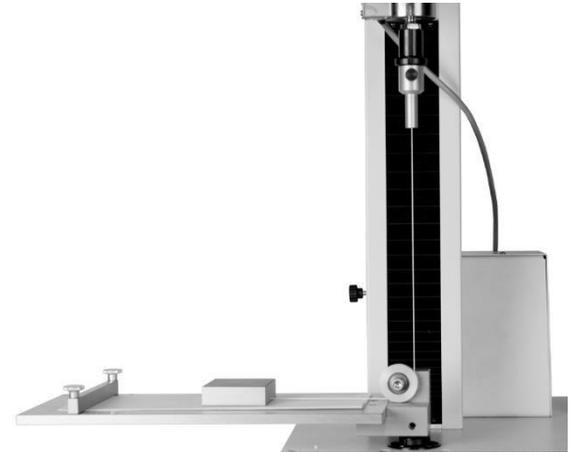
* More clamps available upon request

ACCESSORIES FOR PAPER

FRICTION TABLE

To determine the coefficients of friction between two materials (static and dynamic)

A sheet of paper is clamped on the abrasion table. A metal block with the abrasive material attached to the underside is placed on top. The metal block is attached to the load cell via a cable. Pressing the start button draws the block over the sheet attached to the abrasion table. The measured values are displayed as a real-time curve on the touch screen of the universal tester.



3-POINT-BENDING

To determine flexural strength.

The material for testing is placed on the two supports. The distance between the supports can be set as required. Pressing the start button moves the compression bar down and applies a central load to the test strip. As soon as the predefined force or desired distance is reached, measuring stops and the compression bar travels back to the start point. The measured values are displayed on the universal tester's touch screen as a real-time curve.

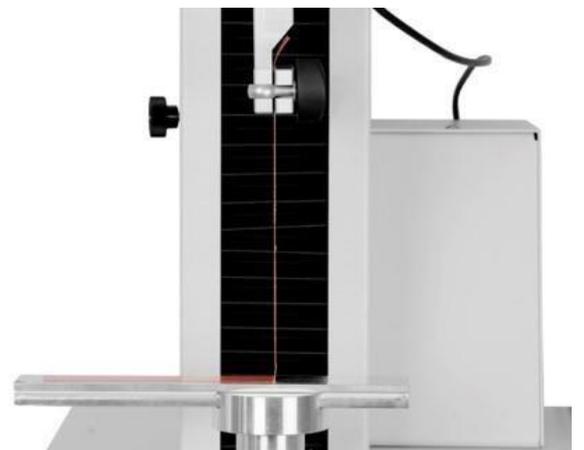


PEEL TEST

Zur Ermittlung der Klebkraft von Klebebändern.

The adhesive tape to be tested is attached to the base platen and its end is clamped. Pressing the start button moves the clamp upwards. This pulls the adhesive tape from the base platen and the adhesive force is determined. The measurements are displayed on the touch screen in a real-time curve.

Peel mechanisms for the peel test Finat 1, 2 or 3 are available.

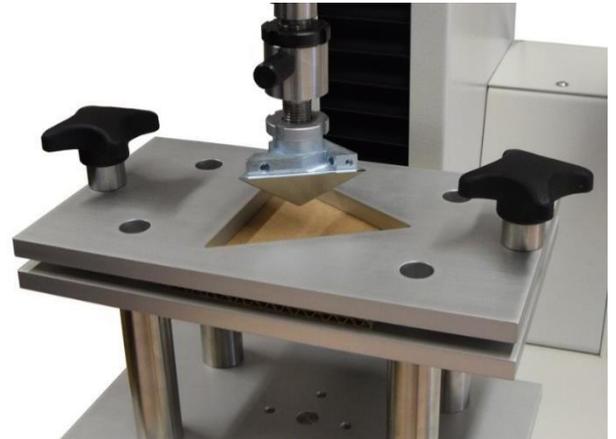


ACCESSORIES FOR BOARD

PUNCTURE TEST

To determine the energy used during static puncturing of board and corrugated board.

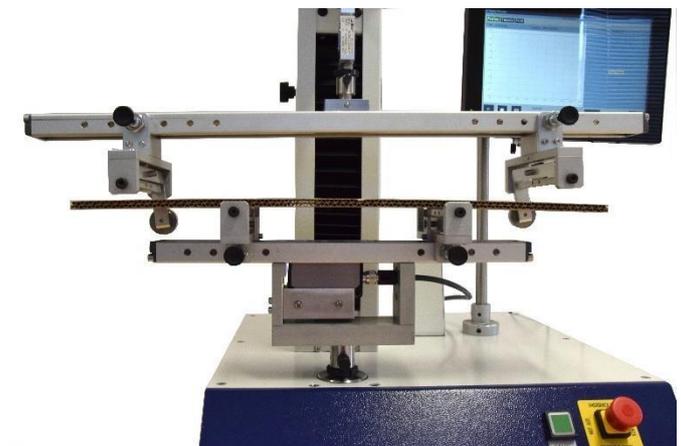
The same puncture head is being used as in the puncture tester. During the static procedure, the sample is clamped into the sample holder. Pushing the start button sets the puncture head in motion down onto the sample from above at 200 mm/minute and punctures the sample. The measurement values can be read from the touch screen of the universal tester from a real-time curve.



4-POINT-BENDING

To determine flexural strength.

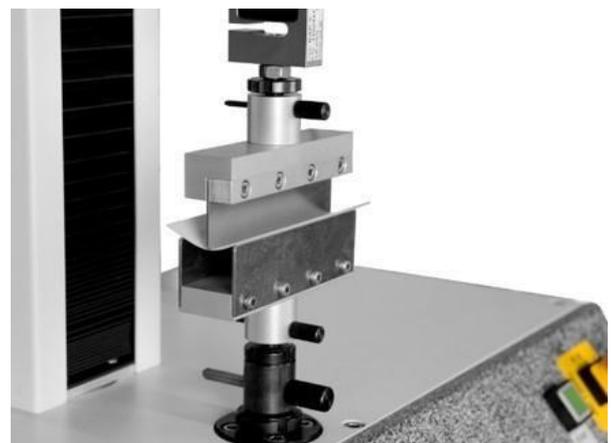
The material for testing is placed on the two supports. The distance between the supports is set as required. Pressing the start button moves the compression bar down and applies a central load to the test strip. As soon as the predefined force or desired distance is reached, measuring stops and the compression bar travels back to the start point. The measured values are displayed on the universal tester's touch screen as a real-time curve.



SCORE QUALITY TEST (SQT)

To determine the score quality of corrugated board.

The prepared 25.4 mm sample is fluted, in MD or CD as required, and placed in the sample holder. A compression bar applies pressure to the corrugation in the middle of the corrugated boards until this is pushed downwards at least 12.7 mm, or the angle between the two sides reaches 90°. The measured values are displayed on the universal tester's touch screen as a real-time curve. The force required is compared with force used in a test with uncorrugated board. This procedure allows the score quality to be determined.



ACCESSORIES AND TISSUE

BALL BURST TEST

To determine the burst strength of tissue.

The tissue sample is clamped into the sample mechanism using quick clamps. The distance between polished plunger and the sample support is set automatically when a program is selected. Pushing the start button causes the plunger to travel downward at a defined speed and apply a load to a point on the tissue sample until it breaks. Then the plunger travels automatically back to the start position. The measured values can be read from the touch screen of the universal tester as a real time curve.



WET TENSILE STRENGTH TEST (FINCH-TEST)

To determine the wet tensile strength of tissue.

The tissue sample is pulled one time over the sample mechanism bar, above the water container, and clamped at both ends into the sample holder above using the quick clamps. The water container is lifted upwards by hand and returned to the start position 15 seconds later. Pushing the start button initiates the wet tensile test. The sample holder moves upwards continuously until the sample breaks at the bar. The values can be read from the touch screen as both numerical results and graphically. If more than one test in MD and CD is carried out, their statistics can be compared and displayed as ratio.

Available in automatic and manual version.



DRY TENSILE STRENGTH TEST

To determine the dry tensile strength of tissue.

The touch screen is used to select the appropriate pro-gram, and the upper sample clamp travels automatically to the correct start position, so that the clamps are a distance acc. to standard apart. The test strip is then clamped into the sample clamps. Pushing the start but-ton initiates the tensile strength test. The upper clamp moves upwards until the sample breaks. The values can be read from the touch screen as numerical results as well as graphically. If more than one test in MD and CD is carried out, their statistics can be compared, and displayed as ratio. The universal tester is delivered with hand clamps as standard. Optionally, pneumatic clamps are available.

