BE ALWAYS IN SAFE HANDS

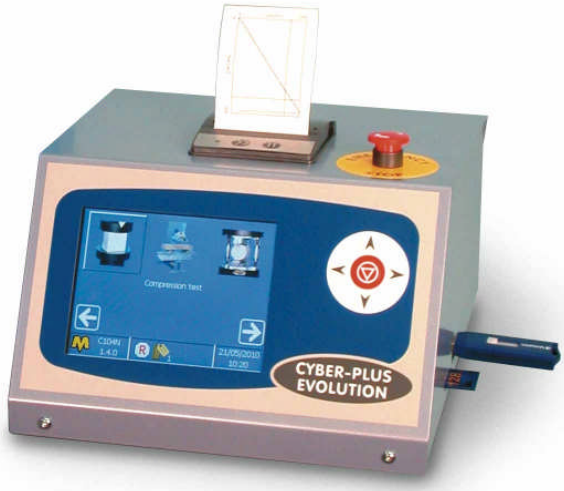
INSTRUCTION MANUAL

"CYBER-PLUS EVOLUTION"

MANUAL CODE

C109N

Do not attempt to operate this equipment before reading and comprehending the manual in all its parts



USERS: MACHINE MANUFACTURERS | DRAUGHTSMEN |OPERATORS | MAINTENANCE WORKERS | ANY OTHERS

REV.	DESCRIZIONE	REDATTO/GESTITO	APPROVATO	COD. IDENT.	PAGINE	DATA EMIS.
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ATTACHED	
A	**WIRING**

- IMPORTANT NOTE -

FIXING INSTRUCTIONS FOR CYBER-PLUS EVOLUTION

It is necessary to use no. 4 x M6 thread screws to fix the Cyber-Plus Evolution on the desired level. Screw them up in the 4 threaded holes placed on the holding device, as shown in the picture below.
It is very important to use screws with the correct length; the length depends on the wall depth to penetrate and on the length of the screw' part inserted in the threaded hole; **the inserted part of the screw has not to exceed 10mm length.**
The respect of this requirement is essential, otherwise the tip of the screw could hit some electronic apparatus parts damaging them irrecoverably.

Chapter 1 GENERAL INFORMATION

1.01 WARNINGS

The manufacturer does not accept any responsibility for direct or indirect damage to people, things or animals and use of the appliance in different conditions from those foreseen.
The manufacturer reserves the right to make changes to the documentary information or to the appliance without advance notice.
Check the machine responds to the standards in force in the state in which it has been installed.
All operations necessary for maintaining machine efficiency before and throughout use are the operator's responsibility
Carefully read the entire manual before operating the machine.
It is vital to know the information and limitations contained in this manual for correct machine use by the operator.
Interventions are only permitted if the operator is accordingly competent and trained.
The operator must be knowledgeable about machine operations and mechanisms.
The purchaser must ensure that operators are trained and aware of all the information and clarifications in the supplied documentation.
Even with such certainty the operator or user must be informed and therefore aware of potential risks when operating the machine.
Safety, reliability and optimum performance is guaranteed when using original parts.
Any tampering or modifying of the appliance (electrical, mechanical or other) which has not been previously authorised in writing by the manufacturer is considered abusive and disclaims the constructor from any responsibility for any resulting damage.
All necessary operations to maintain the efficiency of the machine before and throughout use are the responsibility of the user.

1.02 WARNING AND DANGER INDICATIONS - SIGNS

The machine has been designed and constructed according to the current norms and consequently with mechanical and electrical safety devices designed to protect the operator or user from possible physical damage. Residual risks during use or in some intervention procedures on the device are however present. Such risks can be reduced by carefully following manual procedures, using the suggested individual protection devices and respecting the legal and safety norms in force.
This manual includes "Warning" and "Danger" indications in relevant chapters. These indications are shown with the words "Danger" or "Warning" in bold font and uppercase to make them highly visible.

	WARNING	indicates that machine damage could be caused should indications be ignored.
	DANGER	indicates that machine damage and/or injury to the worker could be caused should indications be ignored.

"**DANGEROUS ZONE**" indicates any zone inside or in the proximity of the appliance in which a person is exposed to the risk of injury or damage to health.

1.03 AIM OF THE INSTRUCTIONS MANUAL

This manual has been edited with the aim of providing all machine operators with all the necessary information on installation, use and maintenance from production to scrapping in as comprehensive and clear manner as possible.
All the procedures useful for any foreseeable emergency situations have been listed by the manufacturer and can be verified during use.
Operators, for whom this manual has been written, due to their competence must give instructions or operate the machine themselves.
The instructions manual must be carefully consulted by laboratory or site safety managers, equipment operators and any internal and external maintenance workers.
The manual is integral to the product and refers to this appliance only.
The manual must be safeguarded and always kept near the equipment so that it can be easily consulted whenever necessary.
IMPORTANT: The manual does not substitute the experience and technical training of the worker but must be considered a guide for carrying out its functions.
Furthermore all the norms and rules the operator should be aware of or consult for correct use of the machine and/or test performance can be found in the manual.
This responsibility is entrusted to the installer and Laboratory or Site Manager where the machine is installed.
The Constructor is available to provide further information.

1.04 MODIFICATIONS AND ENCLOSURES OF THE INSTRUCTIONS MANUAL

This manual reflects the state at the time of the launch of the machine on its market. If any modifications, improvements or adjustments have been made since machine supply the Manufacturer does not have to intervene on the marketed machine and will not consider the machine or the manual deficient or inadequate.

1.05 MACHINE IDENTIFICATION DATA

MODEL : C109N

PRODUCTION DATA: see EC declaration

INSTRUCTIONS MANUAL CODE: C109N.M01.EN.09

1.06 EC STAMP

SEE EC DECLARATION

1.07 USAGE

Cyber-Plus Evolution, eight-channel computerised graphic display instrument, for the acquisition, visualisation, processing, printing and saving of the test data and certificates, with software for managing and remote control from PC; is used to upgrade or complete your concrete or mortar compression and flexure testing machine (also from other manufacturers).
Cyber-Plus Evolution can manage and process the dates in compliance with the EN standards and the different international standards (BS, UNI, NF, DIN, ASTM, UNE) for the following tests:

- Compression
- Elastic modulus
- Splitting tensile
- Flexural
- Flexural on fiber reinforced specimens
- Tensile

WARNING	The above mentioned tests can be managed only by purchasing the relevant software licence.

This appliance is for the exclusive use which it has been conceived for**.**
Any other use is considered improper and therefore negligent**.**
Machine use is allowed only in places free from danger of explosion or fire.
During operation check for conditions of danger.
immediately stop the machine should it be working irregularly, and consult the authorised dealer's Sales Service department.
It is the Client's responsibility to verify at the time of installation and use that no conditions of use arise which are different to those indicated.
Refer to the Constructor when in doubt.

1.08 OPERATORS

DANGER WARNING	The use, transportation, installation, maintenance, demolition and disposal of the appliance are only permitted to "QUALIFIED PERSONNEL". This manual is exclusively aimed at "QUALIFIED PERSONNEL" and contains the necessary information for machine use.

"QUALIFIED PERSONNEL" means people who, due to their training, experience and education, as well as knowledge of the relevant standards, limitations and measures, have been authorised by the "PLANT SAFETY MANAGER" to carry out any necessary activity and are able to recognise and avoid any possible danger.

The manufacturer recommends that the instructions, procedures and recommendations in this manual and the work safety legislation in force be scrupulously adhered to, even with the use of appropriate protection devices (whether individual or part of the machine).
Knowledge and respect of the instructions, safety warnings and danger in this manual are all necessary for installation, operation, management and machine maintenance with a minimal risk.
The "PLANT SAFETY MANAGER" has the following responsibilities and duties:

- To know the machine functions, its commands, safety and protection devices, possible dangers of use and all the information in this manual in detail. This knowledge can only be gleaned from detailed reading of this manual.

- To know the safety legislation in force in detail in order to operate the machine

- To recognise the “QUALIFIED PERSONNEL” for transportation, handling, installation, use, maintenance, disposal, etc.

- Correctly train and educate the “QUALIFIED PERSONNEL” before allowing them access to the machine. The personnel must also be exhaustively trained with regards to the machine’s protection devices.

- Ensure the machine’s safety devices are not tampered with or removed and are checked on a daily basis. Provide the operator appropriate individual protection devices according to the laws in force.

- The constructor is available for clarification, assistance and training and declines all responsibility for damage to things or people resulting from improper, incorrect and negligent use by untrained personnel.

1.09 STORAGE

WARNING	The appliance must be stored and conserved in the original packaging and in a closed environment, protected from atmospheric agents with a minimum temperature of -15C°, and a maximum of +60C° and a maximum humidity of 70%.

1.10 TRANSPORTATION AND MOVEMENT

WARNING	In order to avoid irreparable machine damage, move with care, do not overturn, protect from rain, do not stack, protect the packaging and its contents from bumps and sources of heat.

During transportation and movement it is important to avoid bumps, overloading with other packages, exposure to freezing or heating atmospheric agents, or any other potentially harmful condition to the device, things or people. Machine transportation and movement must be entrusted to Qualified Personnel who can ensure correct movement.

DANGER WARNING	Do not transport or move the product should it be impossible to respect the conditions on the packaging or there be any doubts. Request information from the constructor.

1.11 PACKAGING REMOVAL

After removing the packaging check the machine is complete and that there are no visibly damaged parts. DO NOT USE THE MACHINE and refer to the constructor when in doubt.

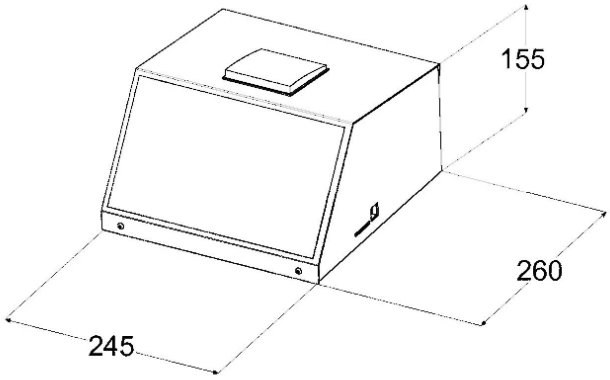
DANGER	The components used for packaging (plastic bags, polystyrene, nails, screws, wood, etc) must be kept out of reach of children, as they are sources of danger. These components should be placed in the appropriate containers.

WARNING	In order to avoid bumps and overturn adopt the normal and logical precautions. Before disposing of the packaging check all machine components such as accessories, utensils, instructions, documents etc have been removed.

Chapter 2 TECHNICAL CHARACTERISTICS

2.01 DIMENSION AND WEIGHT

LENGTH	260 mm
WIDTH	245 mm
HEIGHT	155 mm
WEIGHT	5 kg



2.02 ELECTRICAL SUPPLY

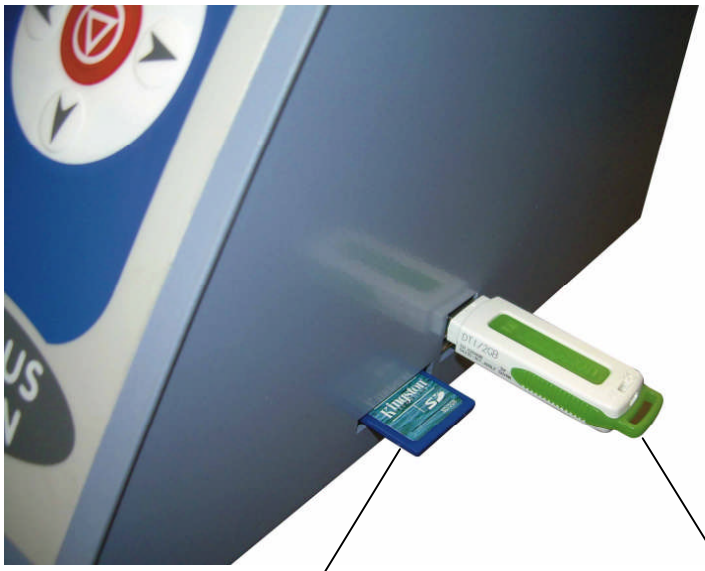
VOLTAGE	230 V
PHASE NUMBERS	1
FREQUENCY	50 Hz
POWER	70 WATT

2.03 HARDWARE

The main hardware features of the machine's mother board are described as follows.
ATTENTION! Even if designed and potentially available, some features could be not be present on the control unit box.

- 312 MHz processor that can be expanded up to 806 MHz.
- 64 MB RAM that can be expanded up to 128 MB.
- 32 MB flash memory that can be expanded up to 256 MB.
- LCD TFT QVGA (320x240 pixel) touch-screen.
- Keyboard with 5 crosswise keys.
- One audio channel.
- Buzzer.
- Clock.
- 8 digital outputs.
- 8 digital inputs.
- 1 analog output (16 bit - 65536 points).
- 8 analog inputs (two of them at high performances).
- Ethernet 100 Mbit for PC connection.
- 2 USB-Host (to connect mouse/keyboard/pen drive).
- 1 USB-Client.
- Slot SD-Card.
- 1 RS232.
- 1 RS485.
- APS graphic printer on thermo-paper.
- 2 controllers for step motors.
- Expansion slot for additional analog inputs.
- Expansion slot for motors control.

AC Output (for power supply)
AC input
AC
Web
RS232C
Analog inputs


SD-CARD slot
No.2 USB-Host

2.04 SOFTWARE

The main software features of the machine's mother board are listed as follows.

- Operating system: "Windows Embedded CE 6.0 R2".
- More intuitive interface and a simplified management of the machine (start up of the test with few and simple commands).
- More opportunities for calculations and graphic visualization (graphs on the machine and printing of the results in a graphic mode).
- More opportunities for languages and International format management (date and time, decimal separator, unit of measurement…).
- Modular structure of the software in order to allow the installation of new test modules later.
- The software on the machine can be easily updated.
- An unlimited memory provided by the SD-Card and USB-Host slots.
- Possibility to connect the machine to Internet in order to activate the remote checking functions.

Chapter 3 GENERAL SAFETY STANDARDS

3.01 GENERAL STANDARDS

To ensure the safety of machine operators:
· Any tampering with the appliance not pre-emptively authorised by the manufacturer exempts the manufacturer from any responsibility for damage caused by or to it.
· The removal or tampering with safety devices entails a violation of the safety standards.
· Machine use is only allowed in areas where there is no risk of explosions or fires.
· Only the original fittings can be used. The use of unoriginal fittings exonerates the manufacturer from all responsibility.
• Check the appliance is in ideal working conditions and that its parts are not worn or faulty before Carry out all necessary maintenance
• Do not wear loose clothing, ties, chains or anything else which could become caught in the frame or other moving parts of the appliance.
• Be aware of the danger of electrical shocks from direct or indirect contact due to unforeseen electrical faults.
• Do not subject the appliance to violent impact.
• Do not expose the appliance to fire, welding sparks or extreme temperatures.
• Do not bring the appliance into contact with corrosive substances.
• Do not wash the appliance with jets of water.
· Check the workspace around the machine is clear from potentially dangerous objects.
· The machine operator must wear appropriate work clothing such as protective glasses, gloves and mask in order to avoid damage from, for example, harmful dust projection. Wear a lower back support when lifting heavy parts. There should be no hanging objects such as bracelets or otherwise, long hair should be protected with relevant precautions, shoes must be appropriate for the type of operation to be carried out.

DURING USE
When operating check there are no conditions of danger. Immediately stop the machine when it is functioning irregularly. Contact the authorised Sales Service department.
• For the operator's safety do not touch any part of the appliance when testing and use the appropriate individual protection devices in order to keep the operator safe.

3.02 MACHINE SAFETY DEVICES AND PROTECTION

DEFINITION: Protections are all the safety measures that consist of the use of specific technical means (repairs, safety devices) to protect people from dangers which cannot be limited reasonably in design.

⚠	**DANGER**	Tampering with the protections or any appliance modification could cause risks to users or other exposed people. The manufacturer does not assume any responsibility for direct or in direct damage to people, things or animals following tampering with the protections.

On the instrument are not present safety devices

Chapter 4 INSTALLATION INSTRUCTIONS

4.01 LOCATION

The equipment must be placed in an ideal position and environment for the use it has been conceived for (laboratory use and protected from atmospheric agents) and that the machine is placed by a qualified operator.

GENERAL ADVICE

- The machine must be installed in an area which allows ease of access to all parts so that maintenance may be carried out.
- Unauthorised people and objects which could be potential sources of danger must not be permitted in the area surrounding the machine.
- Do not position the equipment near instruments or appliances which could produce vibrations.

4.02 TRANSPORTATION AND MOVEMENT

These instructions are applicable to the machine assemblers.
Ensure the equipment is correctly supported at the lifting point and that the machine does not slip.
Do not remain in direct line with the application of force and do not allow personnel where there are loads that cannot be adequately supported by mechanical means.

4.05 ELECTRICAL CONNECTION

⚠	**DANGER**	Wiring of the electrical system must be carried out by qualified personnel. Before wiring consult the electric plan linked to the instructions manual and the registration plate on the machine for information regarding supply, frequency and nominal current. Connect the earthing system via the PE terminal (yellow-green) before any other connection. Apply a knife switch at the top of the connecting cable of the machine to the power system. The knife switch must be combined with a safety device against the overload with a differential switch (safety switch). The technical features of the safety device must be in accordance with the standards in force in the country where the machine has been installed.

ELECTRIC TOLERANCES:

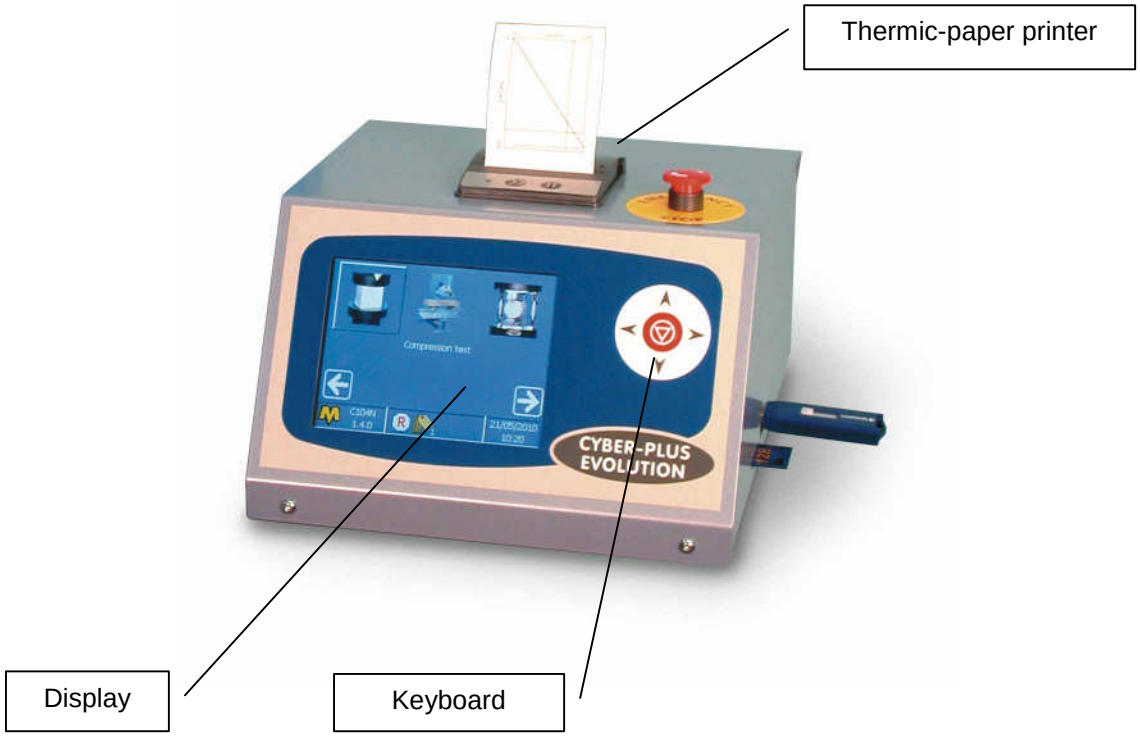
- Real voltage ± 10 % of the nominal one
- Frequency: ± 1 % of the nominal one in a continuous way
  ± 2 % of the nominal one for a short period
- The harmonic distortion of the sum from the second to the fifth harmonics not more than 10 % of the total voltage as a real value between the conductors. A further distortion of 2% is accepted for the sum from the sixth to the thirtieth harmonics of the real total value between the conductors.
- With reference to the voltage imbalance of the three-phase voltage, the inverted sequence component and the zero sequence component must not be more than 2% of the direct sequence component of the voltage.
- The voltage pulses must not last more than 1,5 ms with an up/down time between 500 ms and 500 ms and a peak value not higher than 200 % of the real value of the nominal tension.
- The electric supply must not be interrupted or zeroed for more than 3 ms at any time. Between two interruptions it must not take more than 1 s.
- The interruptions must not overcome 20 % of the tension peak for more than one cycle. Between two interruptions it must not take more than 1 s**.**

The manufacturer assumes no liability for any damages to people, things and animals caused by the non-compliance of the above instructions

	ATTENZIONE	The instrument comes with a cable to connect the unit to a motor (used to handle the testing machine) is the responsibility of the customer make the wiring of the supplied cable ,according to the type of engine used.

Chapter 5 MAN-MACHINE INTERFACE

The man-machine interface pass through the LCD TFT QVGA (320x240 pixel) touch-screen supported by a keyboard with 5 crosswise keys.
All the machine operating functions are accessible through the touch-screen and the keyboard as well.
Depending on the specific contest the machine is working in, some keys/functions can be disabled or may assume a particular meaning. Consult the chapter related to the screen you are interested in to check the exact use of the keyboard.
The printer on board with graphic features allows the printing of the test reports on thermic-paper.



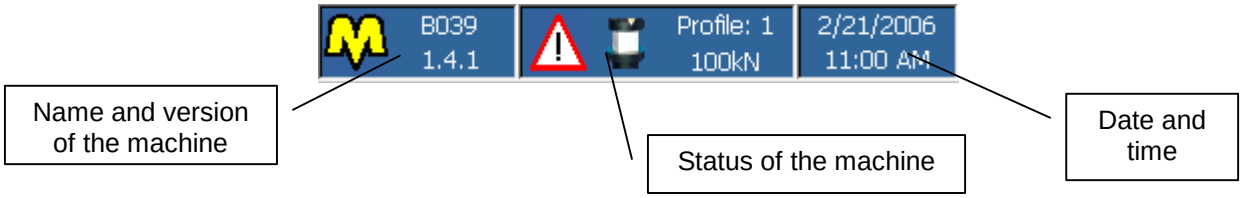
5.01 STRUCTURE OF THE SCREENS

❑ Operating area

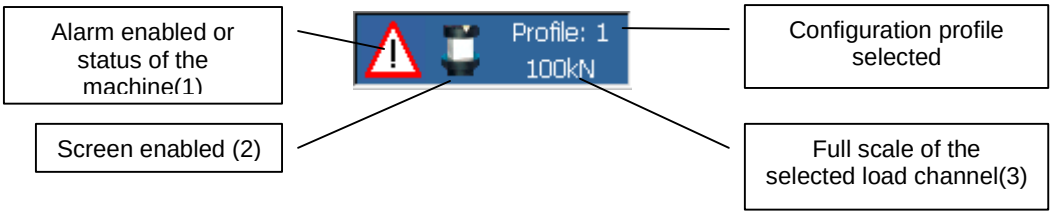
It is the most important area of each screen and it takes up the almost part of the display.

❑ Status Bar

It is divided into three parts and is placed in the lower part of all screens. It provides with a summary of the information concerning the machine configuration and functioning.



The central part is divided into four parts to highlight the following information:



(1) It shows the presence of one or more alarm status ( ) , or the operation status of the machine

- Alarm
- The machine is not configured
- Initialization
- Ready (the initialization is over)
- Strain gauges automatic configuration
- Search of the touch point
- Lying in wait for the operator activation of the automatic operation
- Delayed activation of the automatic operation
- Automatic operation
- Manual activation

(2) It is represented by one of the following icons/pictures to show the screen the operator is entering to. The list does not include the icons that represent the Standards (see the relevant chapters). Some screens can be entered only when using some specific machines.

- : visualization of the enabled alarms.
- : manual positioning.
- : selection of the configuration profile.
- : configuration of the input analog channel (the icon also shows the number of the selected channel).
- : calibration of the input analog channel (the icon also shows the number of the selected channel).
- : check of the input analog channel calibration (the icon also shows the number of the selected channel).
- : configuration of the output analog channel.
- : calibration of the output analog channel.

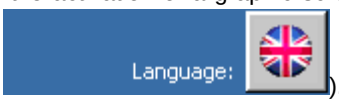
- : check of the output analog channel calibration.
- : machine configuration.
- : machine advance configuration (basic operation).
- : machine advance configuration (advance operation).
- : machine calibration.
- : date and time set up.
- : International settings.
- : network configuration.
- : password change.
- : software maintenance.

(3) The visualization of the channel full scale value is allowed when the Standards require the selection of a load channel.

5.02 MACHINE INTERACTION

BUTTONS

All controls on the screens are shown as buttons and can be classified as follows:

1. “command” button:
    a. Conceived for the execution of a machine function; this button is usually shown on the right column of the operative area of the display; on this button an image (such as the one shown in the example) is visualized on a grey background (example).
2. “parameter” button:
    a. This button is for the modification of a value through the activation of a graphic scroll; an image on a grey background is visualized on the button (example ).
    b. This button is also for the modification of a value through the activation of a text scroll; an alphanumeric text is visualized on the button with a grey background (example).
    c. This button is also for the modification of a value through the activation of a numeric scroll; a numeric text is visualized on the button with a white background (example).
    d. This button is also for the modification of a value through the activation of the virtual numeric/alphanumeric keyboards; a numeric/alphanumeric text is visualized on the button with a white background (example).

FOCUS

The Focus notion is used to point out which button of the screen will respond to the pressure of the confirmation key ( ).

A button has the focus active when it is visualized with dashed sides (example).

A button has the focus inactive when it is visualized without dashed sides (example).

❑ **How to activate a button through the touch-screen.**

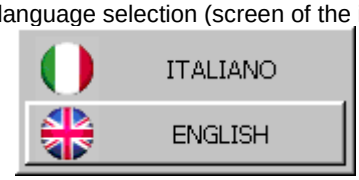
Touch the button and wait for the function execution ("command" button) or for the change of the relevant value ("parameter" button).

❑ **How to activate a button through the keyboard.**

1. Move the focus on the buttons visualized on the screen (keys and) up to the selection of the desired button.
2. Push the confirmation key ( ) and wait for the function execution ("command" button) or for the change of the relevant value ("parameter" button).

GRAPHIC SCROLL

It is visualized when a "parameter" button with an image on a grey background has been activated. The below example shows the graphic scroll for the language selection (screen of the international settings).



❑ **How to select a graphic scroll value with the touch-screen**

1. Scroll the list (or) up to the desired icon.
2. Touch the picture, wait for the closure of the scroll and for the update of the relevant "parameter" button.

❑ **How to annul the selection of a graphic scroll value with the touch-screen**

Touch any point of the LCD display outside the scroll area and wait for its closure.

❑ **How to select a value of a graphic scroll with the keyboard**

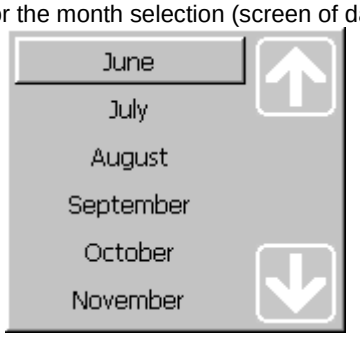
1. Select the desired image by skimming through the list with and keys.
2. Push the confirmation key ( ), wait for the closure of the scroll and for the update of the relevant "parameter" button.

❑ **How to annul the selection of a value of a graphic scroll with the keyboard**

Push one of these keys, or and wait for the closure of the scroll.

TEXT CROLL

It is visualized when a “parameter” button with an alphanumeric text on a grey background has been activated. The below example shows the graphic scroll for the month selection (screen of data and time setting).



❑ **How to select a value of the text scroll with the touch screen**

1. Scroll the list (or) until the desired text is visualized.
2. Touch the desired text, wait for the closure of the scroll and for the update of the relevant “parameter” button.

❑ **How to annul the selection of a value of the text scroll with the touch-screen**

Touch any point of the LCD display outside the scroll area and wait for its closure.

❑ **How to select a value of a text scroll with the keyboard**

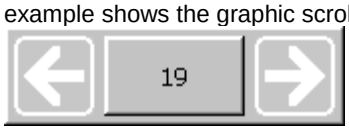
1. Select the desired text by scrolling the list with and keys.
2. Push the confirmation key ( ), wait for the closure of the scroll and for the update of the relevant “parameter” button.

❑ **How to annul the selection of a value of the scroll with the keyboard**

Push one of these keys, or , and wait for the scroll closure.

NUMERIC SCROLL

It is visualized when a “parameter” button with a numeric value on a grey background has been activated. The below example shows the graphic scroll for the day selection (screen of data and time setting).



❑ **How to change the value of a numeric scroll with the touch-screen**

1. Decrease ( ) or increase ( ) the value until the desired one is shown.
2. Touch the value (central area), wait for the scroll closure and for the update of the relevant “parameter” button.

❑ How to annul the change of the value of a numeric scroll with the touch-screen

Touch any point of the LCD display outside the scroll area and wait for its closure.

❑ How to change the value of a numeric scroll with the keyboard.

1. Decrease ( ) or increase ( ) the value until the desired one has been visualized.

2. Push the confirmation key ( ), wait for the closure of the scroll and for the update of the relevant "parameter" button.

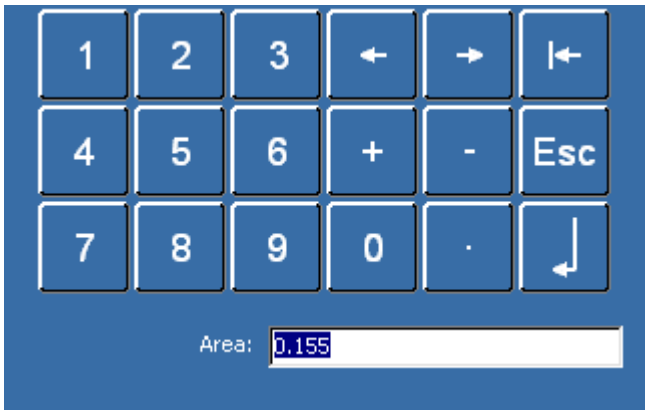
❑ How to annul the change of the value of a numeric scroll with the keyboard.

Push one of these keys, or , and wait for the closure of the scroll.

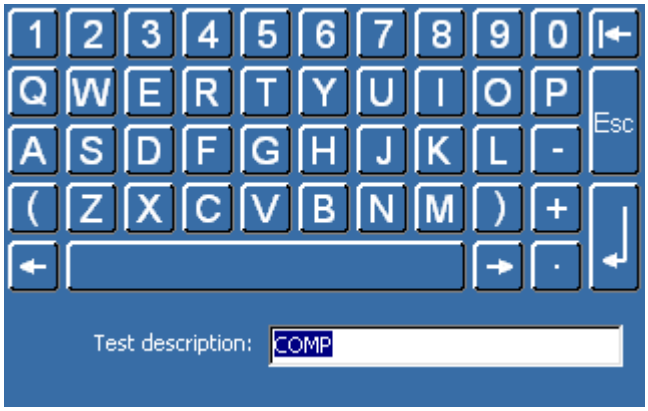
VIRTUAL NUMERIC/ALPHANUMERIC KEYBOARD

It is visualized when a "parameter" button with a numeric/alphanumeric value on a white background has been activated.

Virtual numeric keyboard



Virtual alphanumeric keyboard



❑ How to change a numeric/alphanumeric value with the virtual keyboard.

1. Insert the numeric/alphanumeric value using the virtual keyboard.

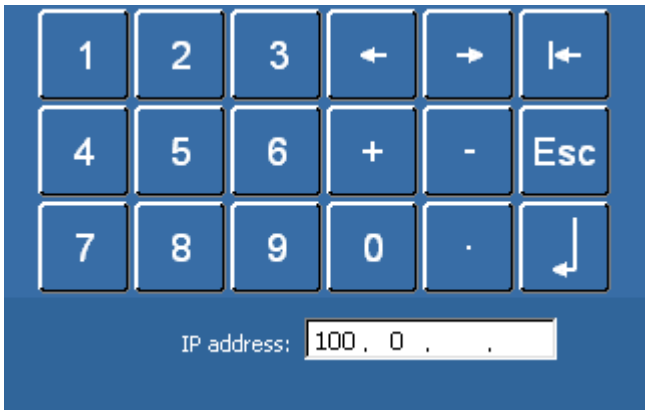
2. Touch / or push the confirmation key to confirm the new value; wait for the closure of the virtual keyboard and for the update of the relevant “parameter” button.

❑ **How to annul the change of a numeric/alphanumeric value with the virtual keyboard.**

Touch / and wait for the closure of the virtual keyboard.

IP ADDRESS

It is visualized when a “parameter” button is activated: the value is shown as an “IP address” on a white background.



❑ **How to change an “IP address” value with the virtual keyboard.**

1. Insert the value as “IP address” using the virtual keyboard.

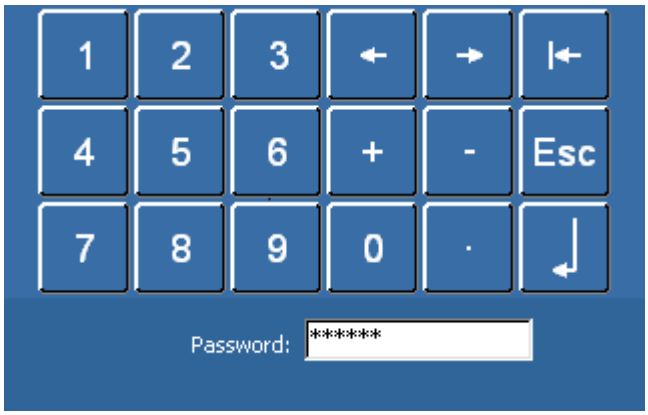
2. Touch or press to confirm the new value, then wait for the closure of the virtual keyboard and the updating of the relevant “parameter” button.

❑ **How to annul the change of a value shown as ”IP address” using the virtual keyboard.**

1. Touch and wait for the closure of the virtual keyboard.

PASSWORD

It is visualized when a function secured by a password is activated.



How to enter a password using the virtual keyboard

1. Enter a password using the virtual keyboard
2. Touch or press the button to confirm the password. Wait for the activation of the secured function (correct password) or for the visualization of an error message (if the password is wrong).
3. Touch to annul the password entry and the activation of the secured function.

Chapter 6 IN FUNCTION - USE

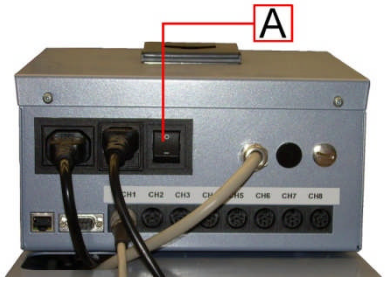
	DANGER WARNING	Before setting the machine in motion it is essential that the Operator and Safety Manager have read the Instructions Manual and understood all parts of the machine and activities linked to it (Risks, Dangers, Functionality, Operation, Protections, Commands, etc.)

6.01 MACHINE CALIBRATION – METERS - INDICATORS

The machine is checked in the factory, using sample equipment periodically checked by officially recognised institutes. These checks cannot guarantee that the machine, meters and indicators will provide accurate values and results conforming to the standards in force in the countries the machine has been installed and used in.
Normally such norms envisage calibration check after every movement. In order to obtain correct values and results it is therefore VITAL that the operator, once the machine has been installed and set up and before official tests, has an officially recognised body check the machine characteristics, its calibration and results/values reliability. The manufacturer is exempt from all responsibility in the case of direct and indirect damage from use of the machine without officially approval by the relevant bodies.

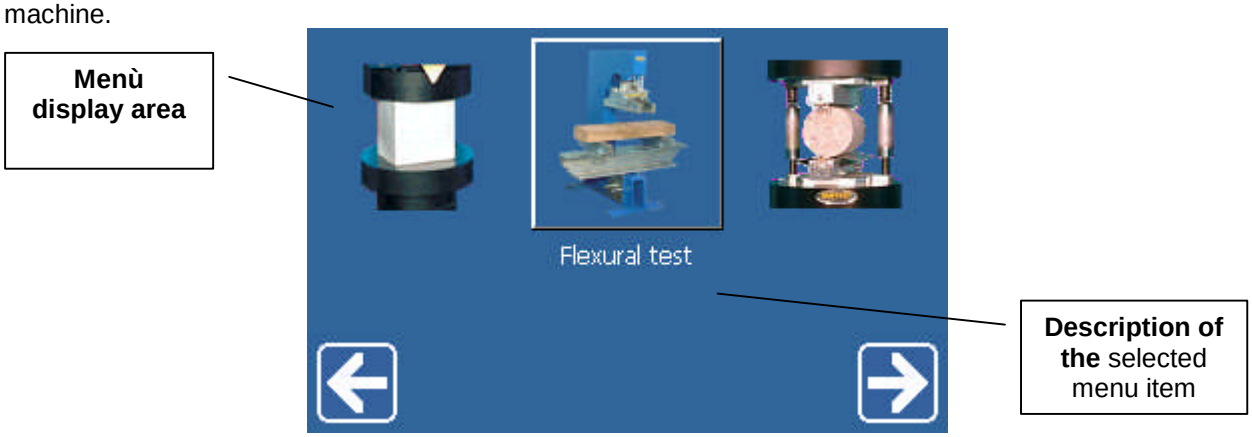
6.02 SWITCHING ON THE EQUIPMENT

Position the general switch **"A"** on "I" to start the machine.



6.03 MAIN MENU

The main menu allows the selection of the machine main functions. It has been organized in such a way to visualize a variable number of items depending on the International Standards installed on the machine.



The following list includes the icons that represent the regular functions and does not include the ones of the Standards (see the relevant chapter). Some functions can be entered only when using some specific machines.

- : visualization of the enabled alarms.
- : manual positioning.
- : system configuration.
- : control panel.

❑ How to select an item of the main menu with the touch-screen

1. Scroll through the menu (or) until the interested item has been visualized.
2. Touch the desired item and wait for the activation of the selected function.

❑ How to select an item of the main menu with the keyboard.

1. Scroll through the menu ( ) until the desired item has been visualized.
2. Push the confirmation key ( ) and wait for the activation of the selected function.

6.03.01 CONTROL PANEL MENU

The control panel menu allows the selection of the general configuration functions of all the machines. The menu includes the following icons:

- : date and time.
- : International settings.
- : touch screen calibration.
- : network connection.
- : password change **(protected by PASSWORD – default 4444)**.
- : software maintenance **(protected by PASSWORD – default 5555)**.

❑ How to select an item of the control panel menu with the touch-screen

1. Scroll through the menu (or) until the desired item has been visualized.
2. Touch the desired item and wait for the activation of the selected function.

❑ How to go back to the main menu with the touch-screen

1. Touch and wait for the visualization of the main menu.

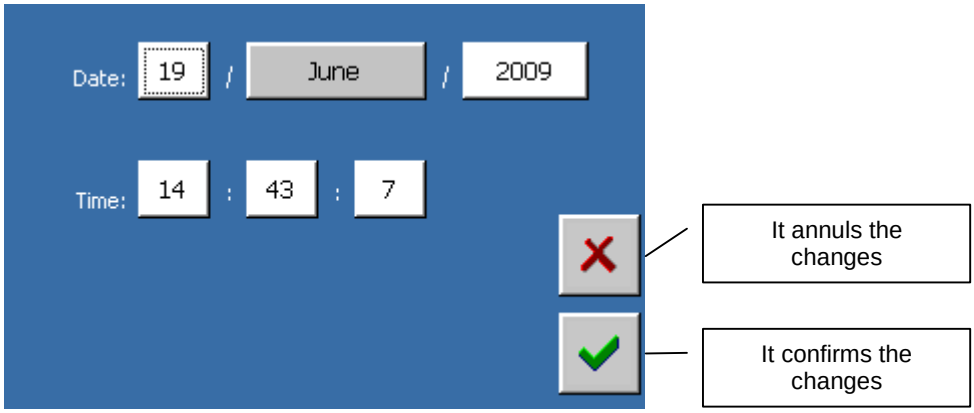
❑ How to select an item of the control panel menu with the keyboard

1. Scroll through the menu (or) until the desired item has been visualized.
2. Push the confirmation key ( ) and wait for the activation of the selected function.

❑ How to go back to the main menu with the keyboard

1. Push the key and wait for the visualization of the main menu.

DATE AND TIME

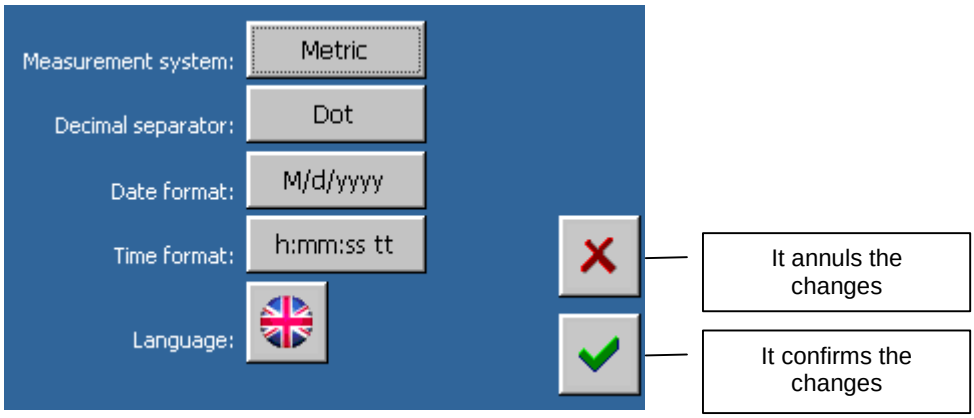


Parameters

Parameter	Values
Day	➢ 1-31 for the following months: January, March, May, July, August, October, Dicember; ➢ 1-30 for April, June, September, November; ➢ 1-29 for February in case of al leap year; ➢ 1-28 for February if it is not a leap year.
Month	➢ “January”, “February”, “March”, “April”, “May”, “June”, “July”, “August”, “September”, “October”, “November”, “December”.
Year	➢ 1970-2069
Hour	➢ 0-23
Minutes	➢ 0-59
Seconds	➢ 0-59

	WARNING IMPORTANT	**The date and time settings remain stored for only 10 days if the equipment is kept turned off.**

INTERNATIONAL SETTINGS



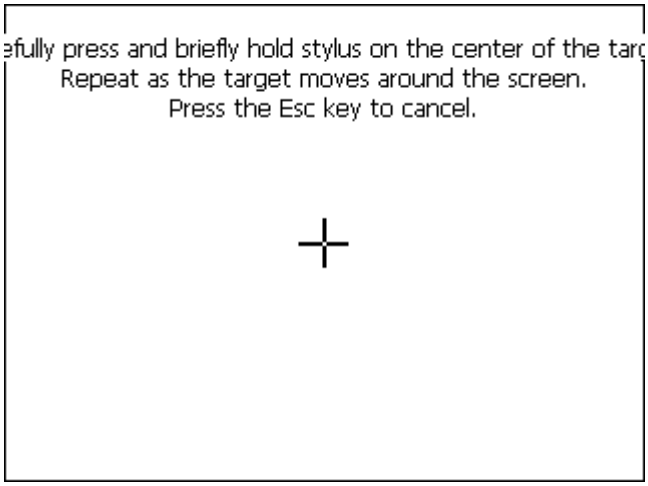
❑ Parameters

Parameter	Value
Unit meas.system	➢ Select the “Metric” measuring system to have the load values expressed in “kN”, the displacement values in “mm”, the deformation values in “με”, and the temperature values in “°C”. ➢ Select the “U.S.” measuring system to have the load values expressed in “lb”, the displacement values in “in”, the deformation values in “με”, and the temperatures values in“°F”, ...
Decimal separator	➢ “Point”, “Comma”.
Date format	Types of Date format (i.e. June 1st 2009) ➢ "d/M/yy" → i.e. “1/6/09” ➢ "dd/MM/yy" → i.e. “01/06/09” ➢ "d/M/yyyy" → i.e. 1/6/2009 ➢ "dd/MM/yyyy" → i.e. 01/06/2009 ➢ "M/d/yy" → i.e. 6/1/09 ➢ "MM/dd/yy" → i.e. 06/01/09 ➢ "M/d/yyyy" → i.e. 6/1/2009 ➢ "MM/dd/yyyy" → i.e. 06/01/2009 ➢ "yyyy/M/d" → i.e. 2009/1/6 ➢ "yyyy/MM/dd" → i.e. 2009/01/06 ➢ "yy/M/d" → i.e. 09/1/6 ➢ "yy/MM/dd" → i.e. 09/01/06
Hour format	Types of hour format (i.e. time 14.27.05): ➢ "h:mm:ss tt" (or “h:mm tt”) → “2:27:05 PM” (or “2:27 PM”) ➢ "H:mm:ss" (or “H:mm”) → “14:27:05 (or “14:27”)
Language	➢ ITALIAN, ENGLISH, FRENCH, GERMAN, SPANISH, POLISH.

TOUCH-SCREEN CALIBRATION

The touch-screen calibration screen will be as shown hereinafter:

	WARNING IMPORTANT	**Once the calibration procedure has been activated, it cannot be interrupted and have to be concluded.**



❑ **How to calibrate the touch-screen**

1. Keep on pushing the pen in the center of the viewfinder, wait for the acquisition of the coordinates and for the movement of the viewfinder to the next position.

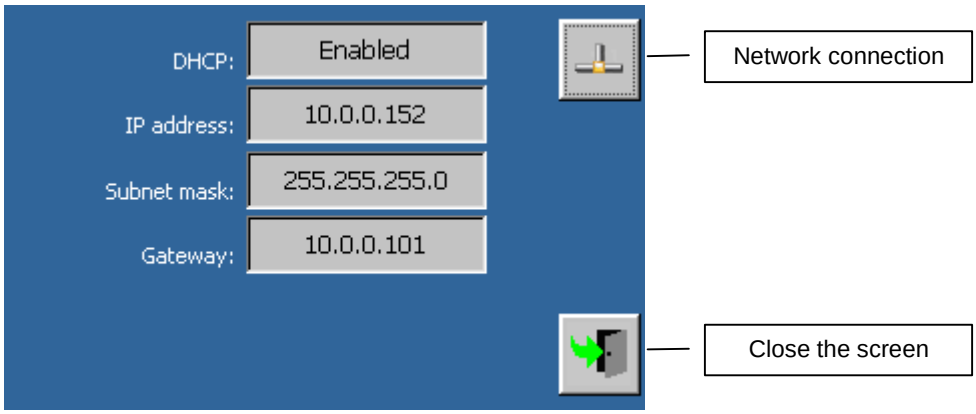
2. Repeat the procedure described at point no. 1 for the five positions (proposed in the following order: center, down on the right, up on the right, up on the left, down on the left).

3. Confirm the calibration by touching the l'LCD or by pushing the key .

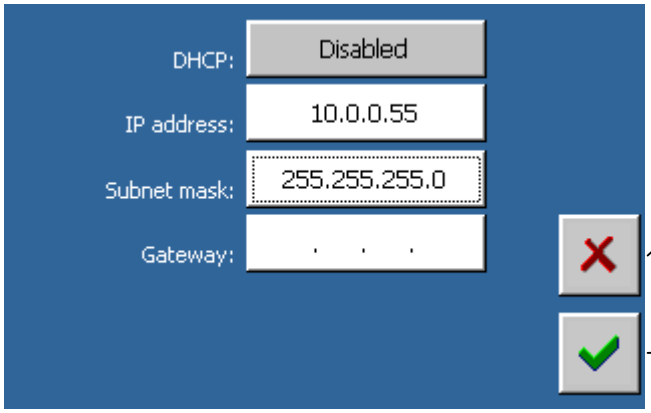
	WARNING IMPORTANT	**During the five phases proposed by the procedure it is necessary to keep the pen firmly as much as possible, in order to obtain a correct calibration.**

NETWORK CONNECTION

The network connection screen shows the configuration parameters of the TCP/IP protocol set by the operator (when the DHCP is disabled) or assigned by the DHCP (when enabled).



The change of the parameters can be enabled pressing the button .



❑ **Parameters**

Parametes	Value
DHCP	Select “Enabled” to activate the configuration of a dynamic IP address(assigned by the DHCP). Select “Disabled” to activate the configuration of a static IP address (assigned by the operator).
IP address	This parameter available only when the DHCP is disabled. In this case, the operator can insert a valid IP address
Subnet mask	This parameter available only when the DHCP is disabled. In this case, the operator can insert a valid subnet mask.
Gateway	This parameter available only when the DHCP is disabled. In this case, the operator can insert the gateway IP address. This parameter is not required if the machine is connected to a local network.

press this button to display the network status screen press this button to annul the changes and close the screen **press this button to confirm the changes and close the screen.**

NETWORK STATUSThe screen shows the status of the network. It is useful to check the IP address assigned to the network when the DHCP is enabled. **IMPORTANT The modification of the network parameters does not have any effect on the network itself if these parameters have not be saved earlier.**

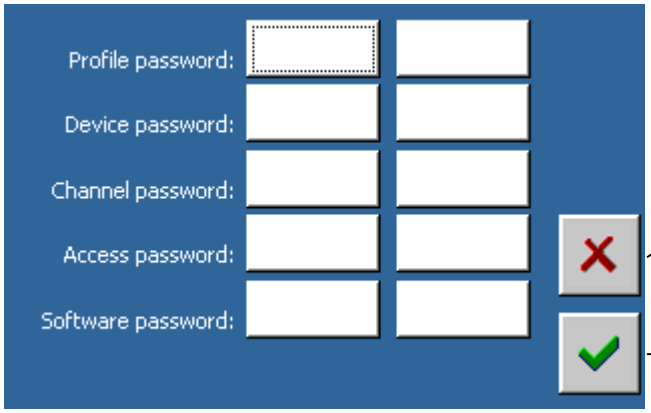
Parameters

Commandspress this button to close the screen.

WARNING IMPORTANT	**Refer to the Administrator for a correct network configuration or consult the relevant helpsheet.**

PASSWORD

This screen allows to personalize the keys/password to access the critical functions of the machine.

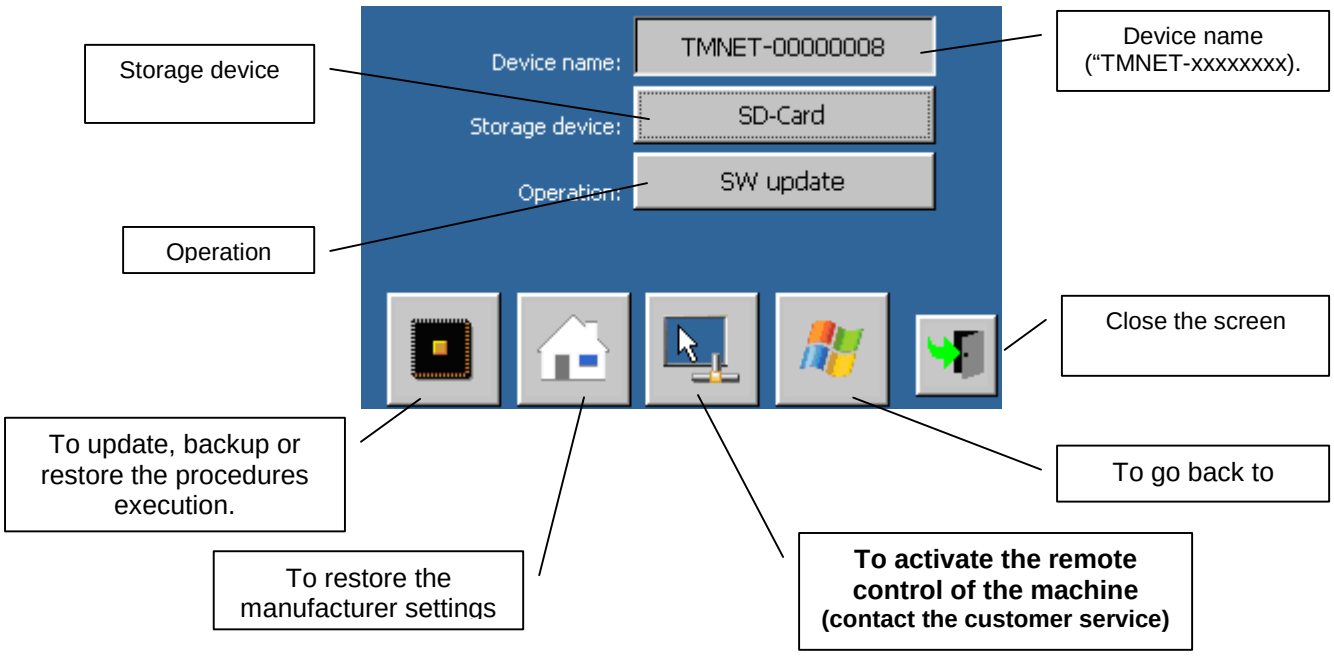


WARNING IMPORTANT	**Each password has to be entered twice, to avoid typing errors that could make the relevant function unusable.**

❑ **Parameters**

Parameter	Value
Profile Password	➢ Enter a numeric value
Machine Configuration Password	➢ Enter a numeric value
Channel Configuration Password	➢ Enter a numeric value
Access Password (current screen)	➢ Enter a numeric value
Software Update Password	➢ Enter a numeric value

SOFTWARE MAINTENANCE



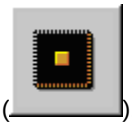
❑ **How to update the operating system and/or an application**

WARNING IMPORTANT	**Make sure that the electronic supply is kept active during the updating process (that may take some minutes).**

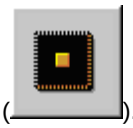
WARNING IMPORTANT	**During the updating process the backup, license restore and configuration will be executed automatically.**

1. Select "SW update".
2. Select the storage device.
3. Be sure that the storage device has been put in the relevant slot and that the latter contains the file with the operating system ("OS.bin") and/or the application ("App.bin") imagines in its root.
4. Activate the button for the updating procedure ( ).
5. The system will check that at least one of the required files is present in the selected storage device and will ask for the updating confirmation for each file that has been found. Confirm the updating for the desired files and wait for the end of the procedure and for the restart of the electronics.
6. Restore the licence and the configuration files.

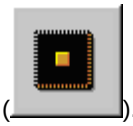
❑ How to back up the licence file.

1. Select “Licence Backup”.
2. Select the storage device.
3. Be sure that the storage device has been put in the relevant slot .
4. Activate the button for the updating procedure ().
5. Confirm the backup and wait for the end of the operation and the relevant confirmation message.
6. Check that “License.dat” file has been saved in the storage device folder “\<name of the device>”.

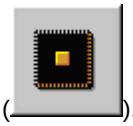
❑ How to restore the licence file

1. Select “Licence Restore”.
2. Select the storage device.
3. Be sure that the storage device has been put in the relevant slot and that the latter contains the “License.dat” file in the “\<name of the device>” folder.
4. Activate the button for the updating procedure ().
5. Confirm the procedure, wait for the ending and for the restart of the electronics.

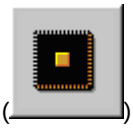
❑ How to backup the configuration file

1. Select “Backup configuration”.
2. Select the storage device.
3. Be sure that the storage device has been put in the relevant slot.
4. Activate the button for the updating procedure ().
5. Confirm the backup and wait for the ending of the procedure and for the relevant confirmation message.
6. Check that the sub-folders “Configuration” and “Standard” including the configuration files have been created in the “\<name of the device>” folder of the storage device.

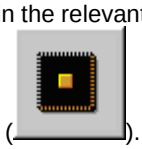
❑ How to restore the configuration file

1. Select “Restore configuration”.
2. Select the storage device.
3. Check that the storage device is inserted in the relevant slot and that the sub-folders “Configuration” and “Standard” including the configuration files are included in the “\<name of the device>” folder.
4. Activate the button for the updating procedure ().
5. Confirm the procedure and wait for the ending and for the restart of the electronics.

❑ How to export the configuration files.

1. Select the “Export configuration” operation”.
2. Select the memory device.
3. Check that the storage device is inserted in the relevant slot.
4. Activate the button for the execution of the update process ().
5. Confirm the file creation and wait for the end of the operation and for the relevant confirmation message.
6. Check that the sub-folders “Certificate” including the configuration files has been created in the “\<name of the device>” folder of the storage device.

How to create the installation log file

1. Select “Log software”.
2. Select the storage device.
3. Be sure that the storage device has been put in the relevant slot.
4. Activate the button for the updating procedure ().
5. Confirm the file creation and wait for the ending of the procedure and the relevant confirmation message.
6. Check that “Software.log” file has been saved in the “\<name of the device>” folder on the storage device.

❑ **How to restore the manufacturer settings**

1. Activate the button to restore the manufacturer settings ( ).
2. Confirm it and wait for the operation ending and for the restart of the electronics.

❑ **How to go back to Windows**

1. Activate the button to go back to Windows ( ).
2. Confirm and wait for the restart of the electronics.

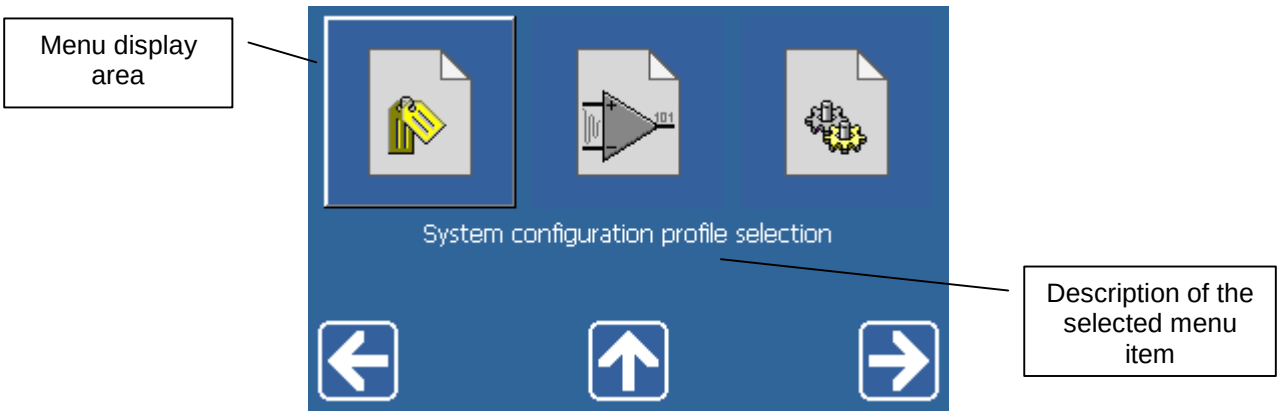
❑ **Commands**

It closes the software updating screen.

It allows the selection of the “general” configuration functions of all the machines.

6.03.02	SYSTEM CONFIGURATION MENU

It allows the selection of the “specific” configuration functions of the appliance.



The items are as follows:

	Configuration profiles **(OPERATION SECURED BY PASSWORD – default 1111)**
	Analog channels configuration **(OPERATION SECURED BY PASSWORD– default 3333)**
	Machine configuration **(OPERATION SECURED BY PASSWORD– default 2222)**

❑ **How to select an item of the system configuration menu with the touch-screen**

1. Scroll the menu (or) until the desired item has been visualized.
2. Touch the desired item and wait for the activation of the selected function.

❑ **How to go back to the main menu with the touch-screen**

1. Touch and wait for the main menu visualization.

❑ **How to select an item of the system configuration menu with the keyboard.**

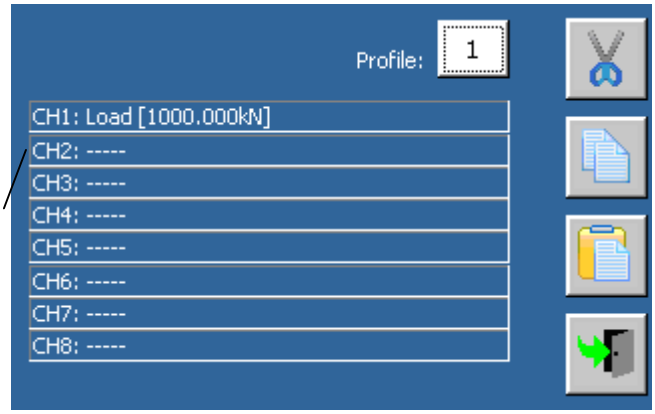
1. Scroll the menu (or) until the desired item has been visualized.
2. Push the confirmation key ( ) and wait for the selected function activation.

❑ **How to go back to the main menu with the keyboard.**

1. Push the key and wait for the main menu visualization.

PROFILES CONFIGURATION

Summary of the analog channels configuration for the selected profile.



❑ Parameters

Parameter	Values
Profile	➢ 1-5: selected profile

❑ How to select a configuration profile

1. Select the identification of the configuration profile.
2. Close the window.

❑ How to duplicate the configuration profile

WARNING IMPORTANT	**The profile duplication is active only if the correct password has been entered.**

1. Select the identification of the “source” configuration profile.
2. Activate the button to copy the profile in action. ( ).
3. Select the identification of the “destination” configuration profile (which is different from the “source” one).
4. Activate the button to paste the profile in action ( ).
5. Confirm the duplication and wait for the end of the operation and the relevant confirmation message.

❑ How to delete a configuration profile

WARNING IMPORTANT	**The profile duplication is active only if the correct password has been entered.**

1. Select the identification of the configuration profile to be deleted.
2. Activate the button to delete the profile in action. ( ).

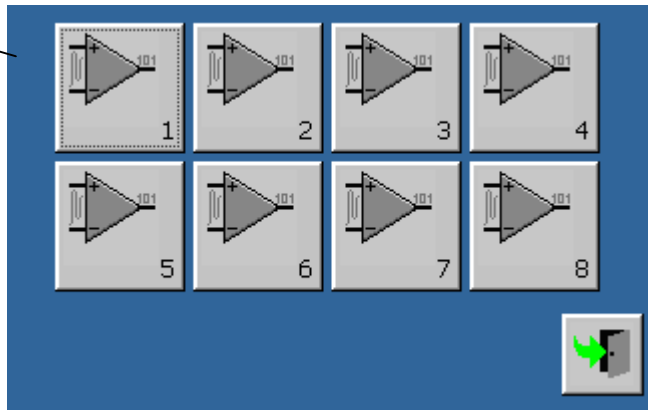
❑ Commands

(1) It closes the screen of the analog channel advanced configuration.

ANALOG CHANNELS CONFIGURATION

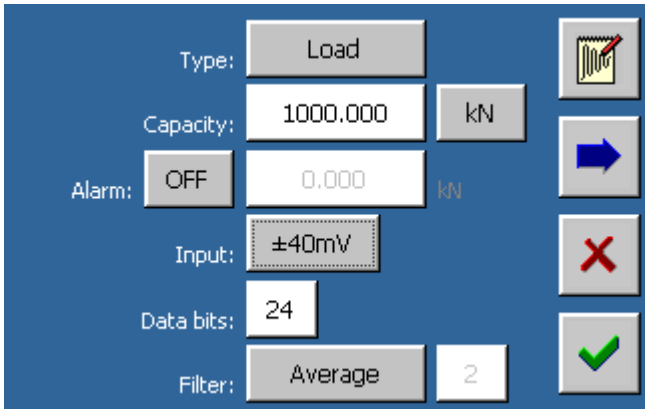
This screen allows to select the analog channel to be set by means of 8 buttons.

Buttons for the selection of the analog channel to be set



❑ Analog channel configuration

This is the screen that allows the analog channel configuration.



❑ Parameters

Parameters	Values
Type	➢ “Load”, “Displacement”, “Deformation”, “Temperature”.
Capacity **(1)**	➢ Numeric value.
Scale factor **(2)**	➢ Numeric value
Unit meas. System **(3)**	➢ “kN”, “lb” for load channels ; ➢ ““mm”, “in” for displacement channels. ➢ “με” for strain channels. ➢ “°C”, “°F” for temperature channels.
Alarm activation Flag	➢ “Off”, “On”.
Alarm threshold **(4)**	➢ Numeric value.
Input	➢ “±5V”, "±2.5V", "±1.25V", "±600mV", "±300mV", "±150mV", "±80mV", "±40mV" for high-resolution channels (1 and 2); ➢ "±5V", "±80mV", "±40mV", "±20mV" for the others.
Bit data	➢ 8-24
Filter type **(5)**	➢ "None", “Average”, “Custom”.
Filter depth **(6)**	➢ 2-100

(1) Required for load and displacement channels.
(2) Required for strain and temperature channels.
(3) The unit measuring system of the analog channel has no relation with the measuring system selected in the International settings. This allows the operator to insert the transducer capacity directly into the relevant unit system of the transducer without taking care of the working mode of the system..
(4) This parameter can be set only if the alarm activation flag has been put on “on”..

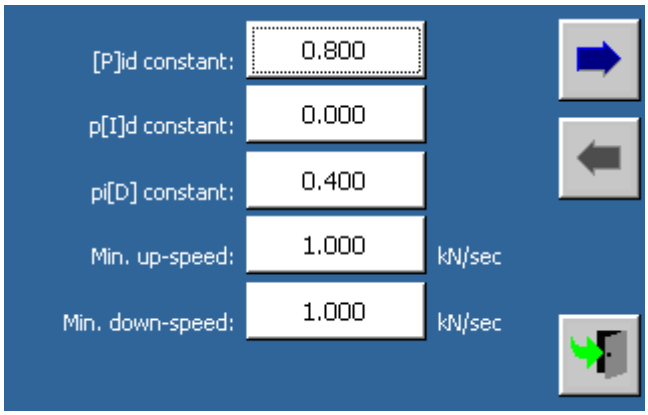
(5) Analog data are over sampled in respect to the real need of the application. The specimens in excess can be used to stabilize the reading with variable algorithm depending on what has been selected in “Filter type” parameter. If Filter type has been set on “None”, the last specimen read on the time acquisition screen will be used without using mathematical algorithms; If Filter type has been set on “Average”, an arithmetic average will be applied on the specimens into the time acquisition screen; if Filter type has been set on “Custom” the values variations on the time acquisition screen will be attenuated proportionally to the Filter depth value.
(6) The parameter can be set only if the filter is “Custom”.

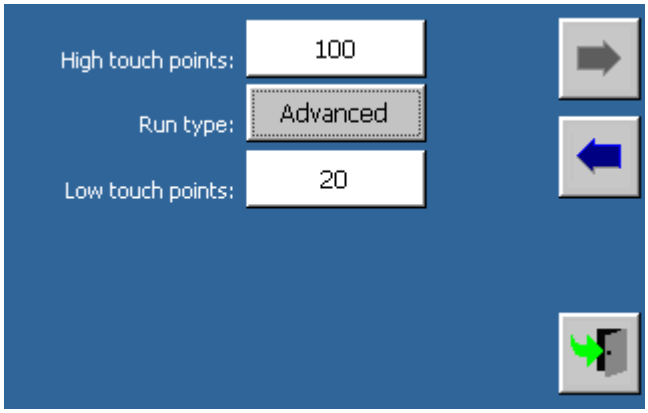
❑ Commands

1. to activate the analog channel calibration.
2. to activate the advanced configuration of the analog channel (not available for temperature channels).
3. to annul the changes and close the screen.
4. to confirm the changes and close the screen.

ADVANCED CONFIGURATION OF THE LOAD CHANNEL

IMPORTANT! The advanced configuration of the analog channel is not available for temperature channels
In the case of manual machine is available in "reduced form", only the second screen





❑ PID controller

The pace rate is kept constant by means of a PID Control (**proportional–integral–derivative controller). PID controller** is a control loop feedback mechanism that attempts to correct the error between the measured speed value and the desired one by calculating - and then outputting - a corrective action that can adjust the input data of the process to reach a stabilization.

The proportional value determines the reaction to the current error (the difference between the value on theory and the read one), the integral value determines the reaction based on the sum of recent errors, and the derivative value determines the reaction based on the rate at which the error has been changing.

❑ **Parameters**

Parameters	Values
[P]id constant (1)	➢ Numeric value.
p[I]d constant (1)	➢ Numeric value.
pi[D] constant (1)	➢ Numeric value.
Minimum speed uphill(1)	➢ Numeric value.
Minimum speed downhill (1)	➢ Numeric value.
High pressure touch points (2)	➢ Numeric value.
Run type (3)	➢ “Basic”, “Advanced”.
Low pressure touch points (3)	➢ Numeric value.

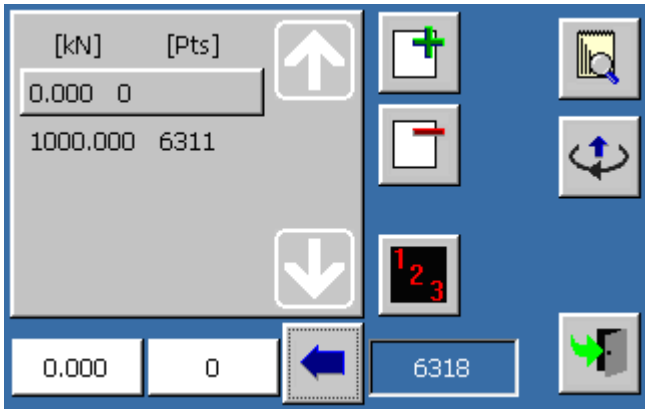
(1) Required only on automatic machine.
(2) Required only for load channels.
(3) Required only for load channels on those machines provided with a double run type

❑ **Commands**

1. to activate the next advanced configuration screen of the analog channel.
2. to activate the previous advanced configuration screen of the analog channel.
3. to close the advanced configuration screen of the analog channel.

ANALOG CHANNEL CALIBRATION

	WARNING IMPORTANT	**The advanced configuration of the analog channel is not available for strain channels.**



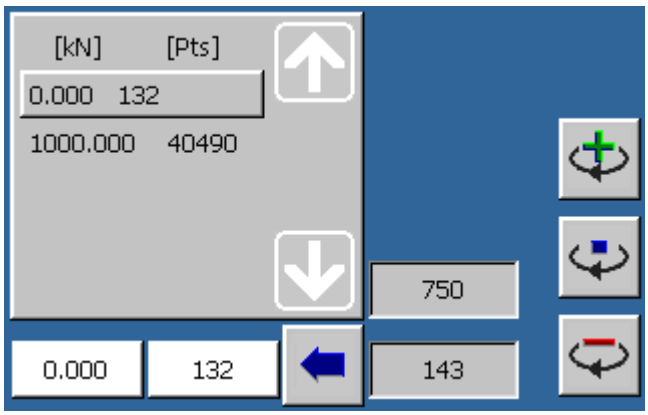
❑ **Parameters**

Parameters	Values
Calibration table	➢ Couples of numeric values to convert the points into engineering values (load or displacement) or resistance value into engineering values (temperature).

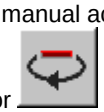
❑ Commands

1. to add a calibration step.
2. to remove the selected calibration step.
3. to set a calibration table, whose load or displacement values are equidistant.
4. to obtain the points numbers read by the analog channel per the selected calibration passo.
5. to start the calibration check screen.
6. to start the manual activation of the motor (only for load channels).
7. to increase the speed of the manual activation of the motor (only for load channels).
8. to stop the manual activation of the motor (only for load channels).
9. to decrease the speed of the manual activation of the motor (only for load channels).
10. to close the screen of the analog channel calibration.

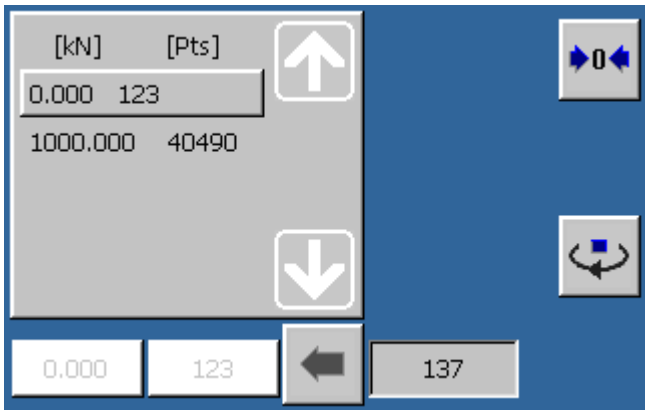
❑ Servocontrolled machine



❑ Speed adjustment during the manual activation of the motor.

During the manual activation of the motor, the operator can adjust the speed by touching the buttons (to increase) or  (to decrease). As alternative, the operator can act on the keys (to increase) or (to decrease).

❑ **Manual machine**



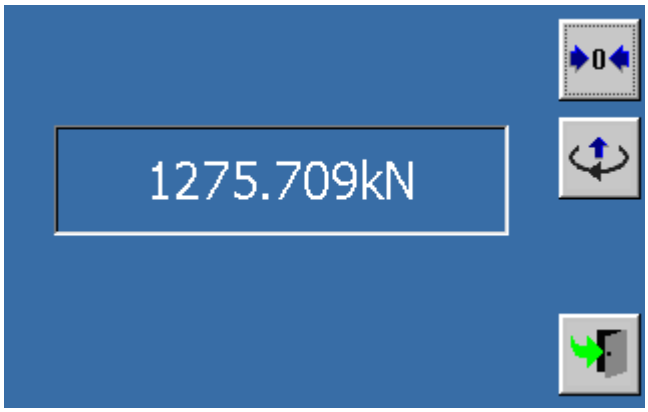
❑ **How to stop the manual activation of the motor.**

Touch

or press **to stop the test execution.**

To stop the machine during a critical phase, press the red emergency button placed above the control unit.

CHECKING THE ANALOG CHANNEL CALIBRATION



❑ **Commands**

1. to reset the analog channel value.
2. to start the manual activation of the motor (only for load channels).
3. to increase the speed of the manual activation of the motor (only for load channels).
4. to stop the manual activation of the motor (only for load channels).
5. to decrease the speed of the manual activation of the motor (only for load channels).

6. to close the screen of the analog channel calibration.

❑ Servo-Controlled Machine

During the manual activation of the motor, the operator can adjust the speed by touching the buttons (to increase) or (to decrease). As alternative, the operator can act on the keys (to increase) or (to decrease).

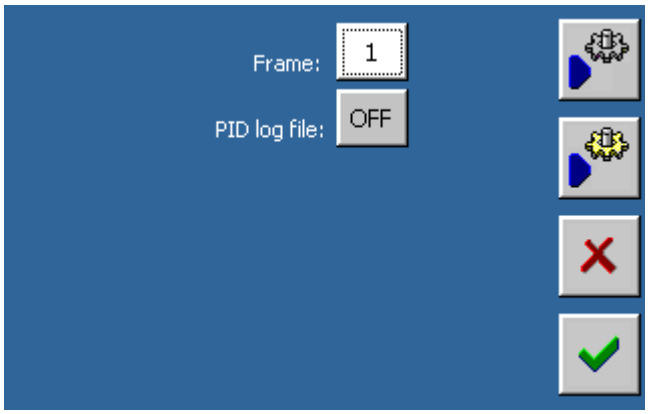
❑ Stop of the Engine

Touch **or press** **to stop the test execution.**

To stop the machine during a critical phase, press the red emergency button placed above the control unit.

MACHINE CONFIGURATION

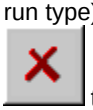
It allows the setting of all operating parameters along with the basic and the advanced configuration screens.



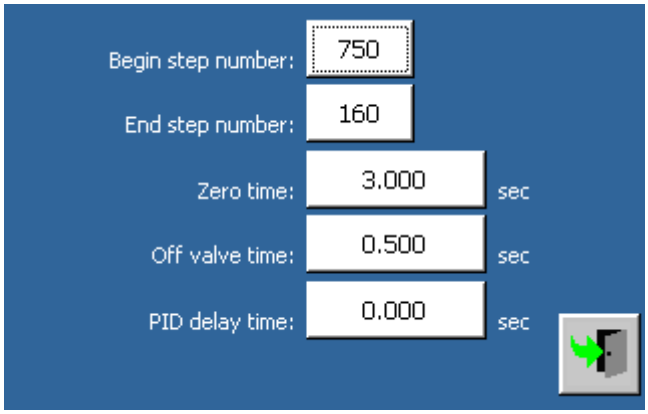
❑ Parameters

Parameters	Values
Frame	➢ 1-2.
PID log file	➢ It allows a log file writing during the execution of a PID algorithm.

❑ Commands

1. to activate the basic configuration screen.
2. to activate the advanced configuration screen (available only on those machines provided with a double run type).
3.  to annul the changes and closes the screen.
4. to confirm the changes and close the screen.

BASIC CONFIGURATION OF THE MACHINE



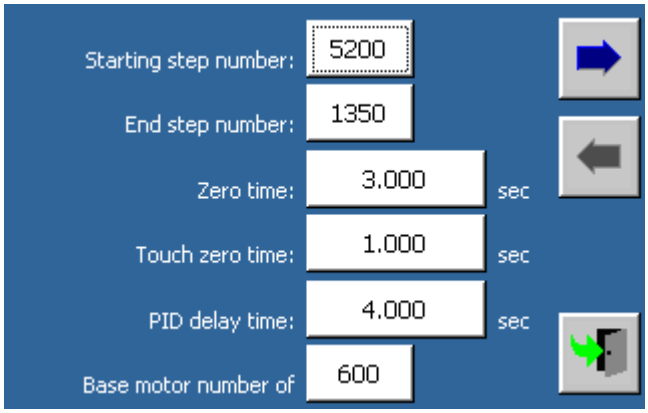
❑ Parameters

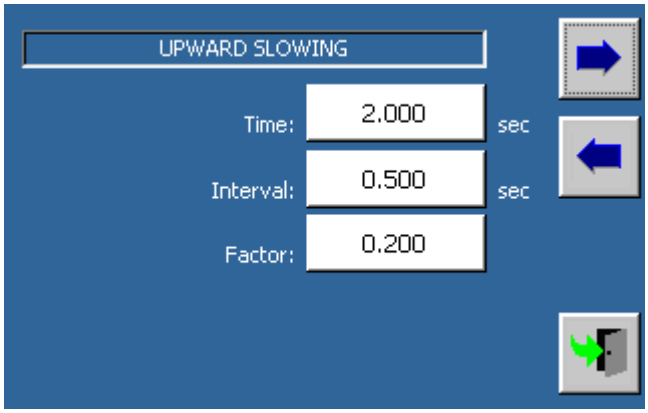
Parameters	Values
Begin step number	➢ It shows the steps number for the opening of the hydraulic circuit flow rate at the beginning of the touching phase.
End step number	➢ It shows the steps number for the opening of the hydraulic circuit flow rate at the end of the touching phase.
Zero time	➢ It shows the time that have to pass between the beginning of the touching phase and the analog channels calibration.
Off valve time	➢ It shows how long the load valve have to be kept inactive after the touching phase. This time enables the step motor - used to adjust the flow – to reach the number of steps expected at the end of the touching phase.
PID delay time	➢ It shows the time that have to pass between the touch point and the beginning of the PID operation.

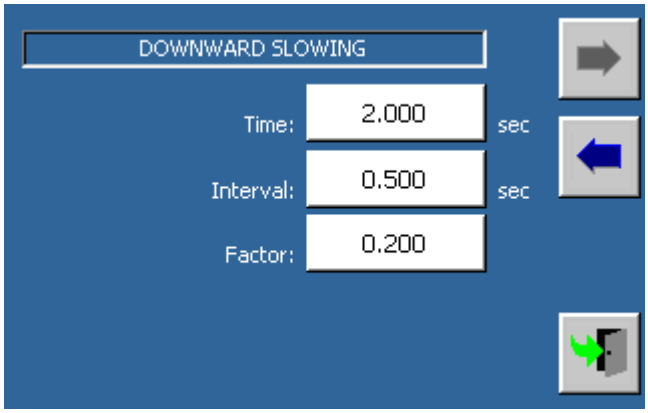
❑ Commands

1. to close the screen.

ADVANCED CONFIGURATION OF THE MACHINE







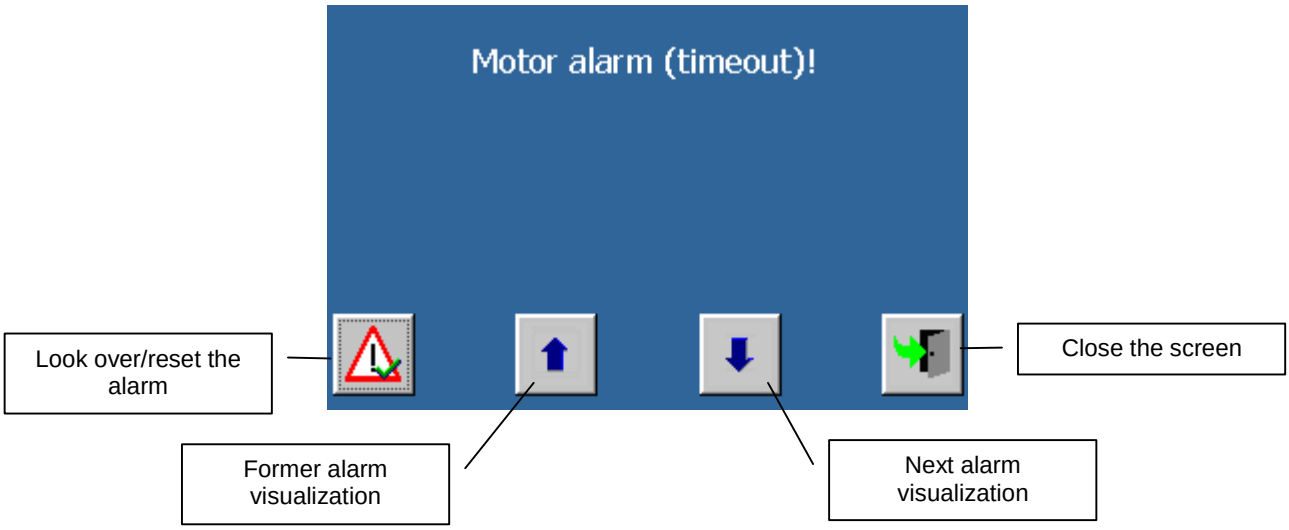
❑ Parameters

Parameters	Values
Begin step number	➢ It shows the steps number for the opening of the hydraulic circuit flow rate at the beginning of the touching phase.
End step number	➢ It shows the steps number for the opening of the hydraulic circuit flow rate at the end of the touching phase.
Zero time	➢ It shows the time that have to pass between the beginning of the touching phase and the “beginning calibration” of the analog channels.
Touch zero time	➢ It shows the time that have to pass between the touch point and the analog channels calibration.
PID delay time	➢ It shows the time that have to pass between the instant of the analog channel calibration and the beginning of the PID operation.
Base motor step number	➢ It shows the steps number for the hydraulic circuit opening for the basic activation during the advanced procedure.
Slowing time (ascent and descent)	➢ It Indicates how long before reaching the load/displacement/deformation should start slowing down of the piston stroke
Slowing interval (ascent and descent)	➢ Indicates the interval of time that must pass between two progressive decreases in speed.
Slowing factor (ascent and descent)	➢ indicates how much the speed drive must be decreased(than the initial speed) every slowdown

❑ Commands

1. to activate the next advanced configuration screen of the analog channel.
2. to activate the previous advanced configuration screen of the analog channel.
3. It allows the closure of the screen.

6.03.03 ALARMS



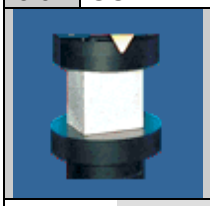
❑ **How to confirm the setting or reset an alarm.**

1. Scroll through the list of the active alarms (or) until the desired alarm is visualized.
2. Confirm the inspection and reset the alarm pressing .

WARNING IMPORTANT	An alarm that has been reset could immediately appear again if the causes/problems have not been removed completely.

WARNING IMPORTANT	If the alarm has been activated by pressing the emergency button, it is not necessary to reset the alarm, but the operator has only to put the button in its initial position.

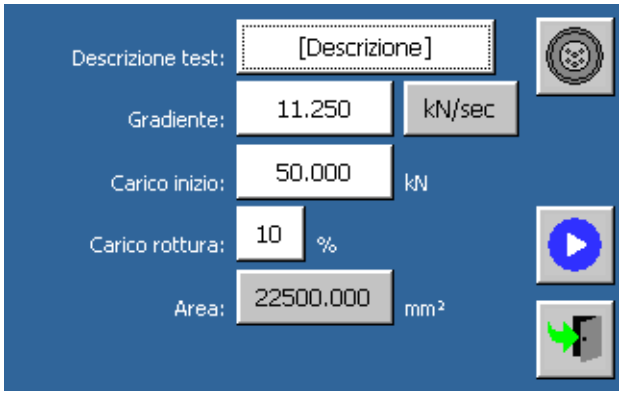
6.04 COMPRESSION TEST



COMPRESSION TEST

WARNING	Compression test can be executed only by purchasing the relevant licence.

❑ Test configuration



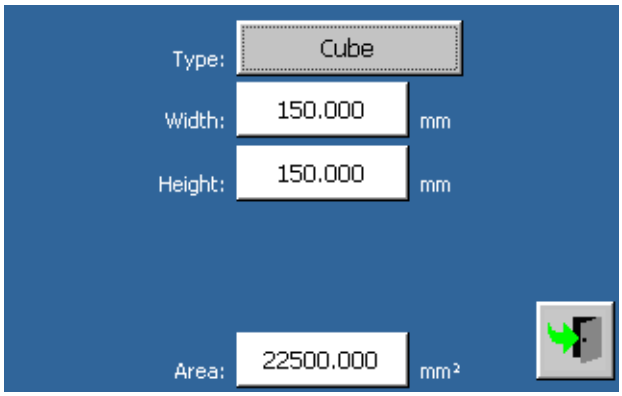
❑ Parameters

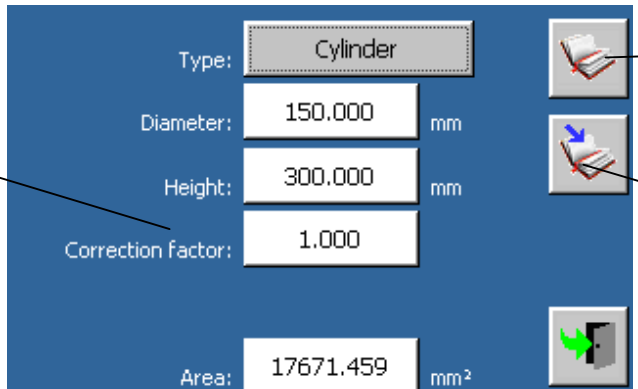
Parameter	Parameter	Metric Unit system	U.S. Unit system
Test description	➢ Alphanumeric value		
Pace rate	➢ Numeric value	kN/sec MPa/sec	lb/sec psi/sec
Initial Load **(1)**	➢ Numeric value	kN	lb
Load at Failure **(2)**	➢ Numeric value	%	%
Area	➢ Numeric value	mm²	in²

(1) The machine only detects the specimen break after going over the starting load value.
(2) The break of the specimen is detected in correspondence to the load decrease (decrease percentage from the peak load).

❑ Area

This is the surface in contact with the specimen; this value is useful for the load-pressure conversion, and if selected a new page will appear on the screen.





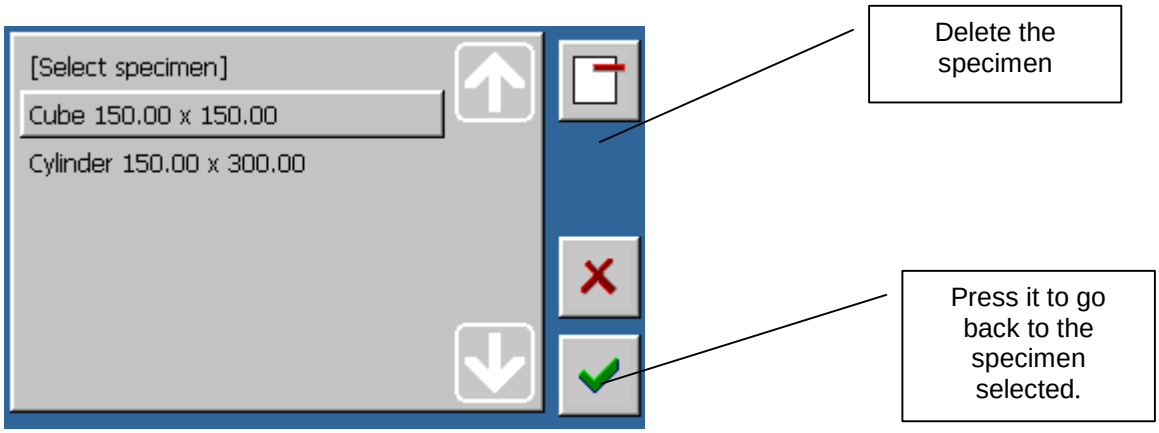
Correction factor according to ASTM C39

Specimens file display.

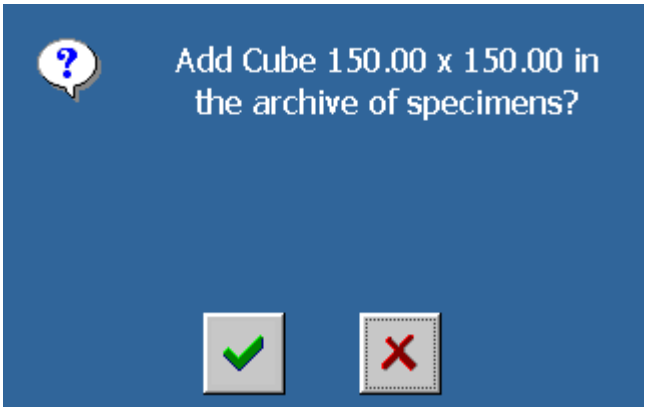
Add to the specimens file.

When returning to the previous page, the Area will automatically recalculated.

1. Specimens file display

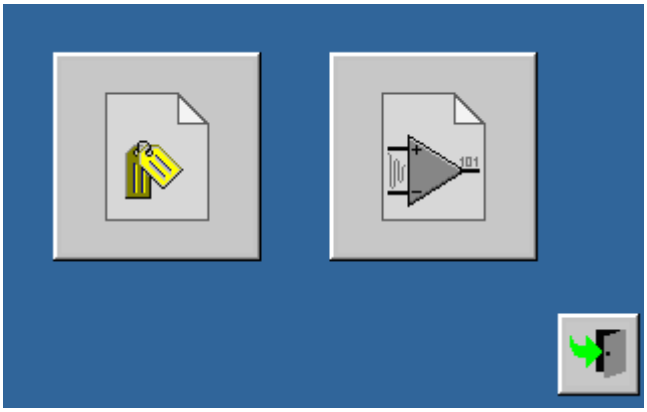


2. Add to the specimens file.

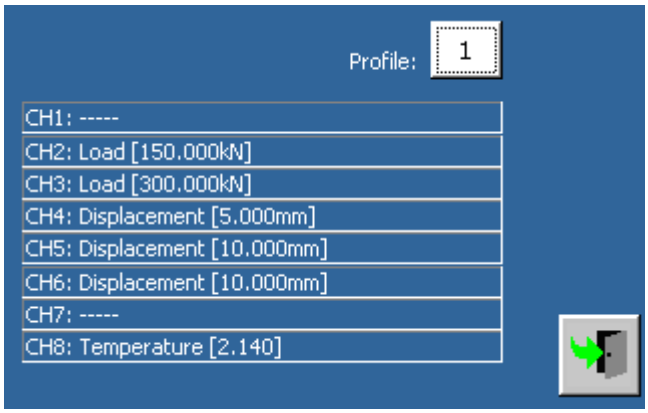


❑ Commands

1. To associate the functions of the machine with the available transducers



2. Profile Configuration



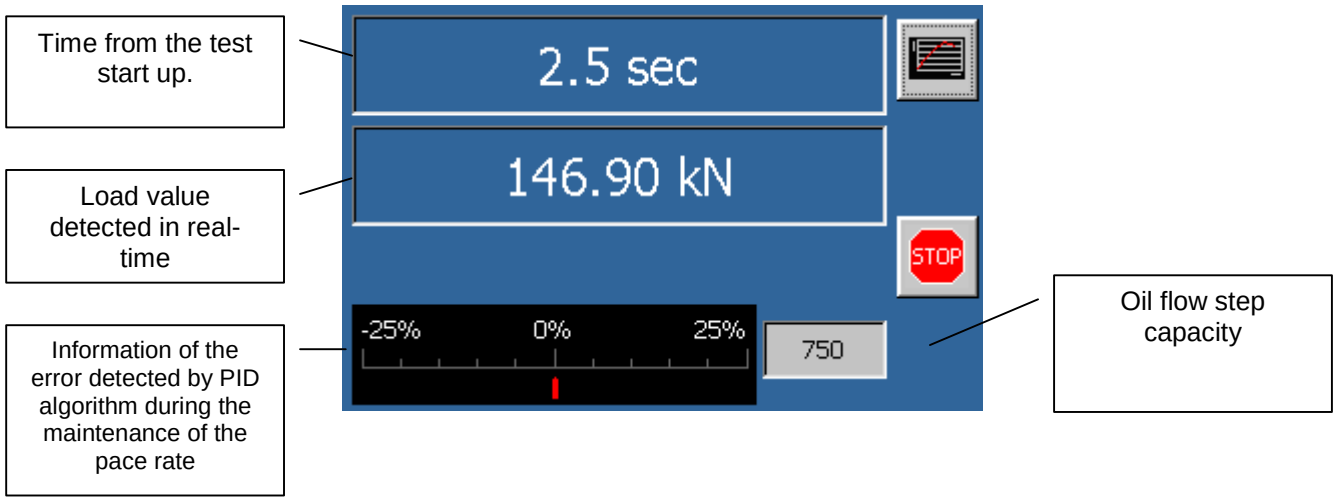
3. Analog Channel Configuration

4. to start the test execution with the set parameters.
5. to close the test execution screen.

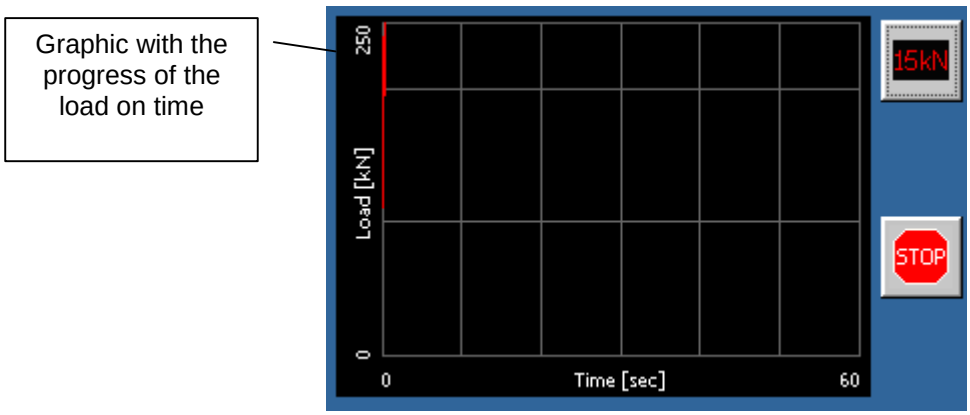
❑ Test execution on automatic machine

During the test execution, the progress can be visualized by means of two screens:

1. Numeric visualization.



2. Graphic visualization.



The piston will rise at a high speed until the specimen touches the upper platen; at this point the system will provide to maintain the pace rate previously set up. The gradient bar, located at the bottom of the display, shows in % the real time error of the applied load.
When the specimen reaches the failure, with subsequent release of the oil pressure, the maximum load reached will be visualized on the screen.

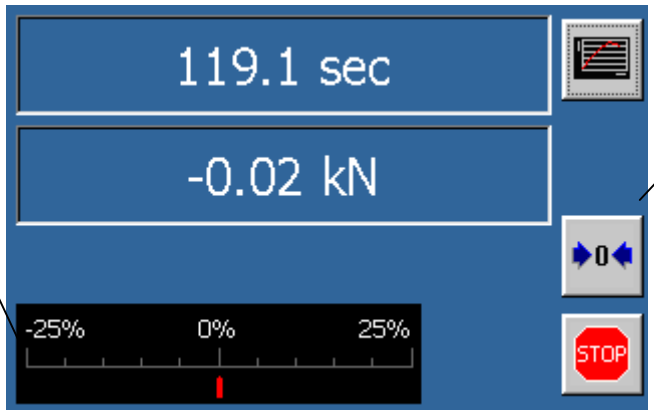
❑ Commands

1. To view the graph
2.

To view the numeric values
3.

To stop the test.

❑ **Test execution with a manual machine**



1. Act on the charge-discharge knob of the oildynamic unit and rotate it clockwise in order to close the circuit. Press the pace rate regulator and position the piston in such a way that it seems suspended on the oil contained in the cylinder, but paying attention that the specimen does not get in touch with the upper plate.
2. In case of need, press to perform the tare manually.
3. Press the pace rate regulator until the specimen gets in touch with the upper plate.
4. Release immediately the pace rate regulator and put the black pointer between 5-6 by rotating it clockwise in order to start the rise of the load. The error of the application of the load could be shown in real time by means of the "pace rate meter" visualized on the bottom of the display. Act on the pace rate regulator to correct the error: rotate it clockwise to increase the pace rate or rotate it counter-clowise to decrease the pace rate.
5. As soon as the specimen is broken, discharge the pressure by means of the charge-discharge knob. The display will show the maximum load reached during the test and the strength resulting from the ratio between the load and the specimen surface (see the picture here below).

❑ **Test Stop**

Touch **or press** **to stop the test execution.**

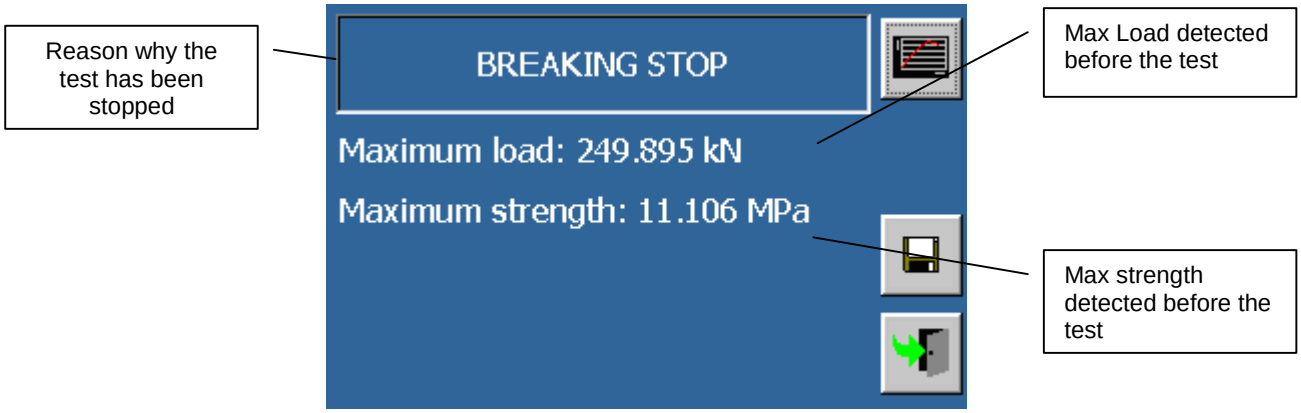
To stop the machine during a critical phase, press the red emergency button placed above the control unit.

❑ **Test results**

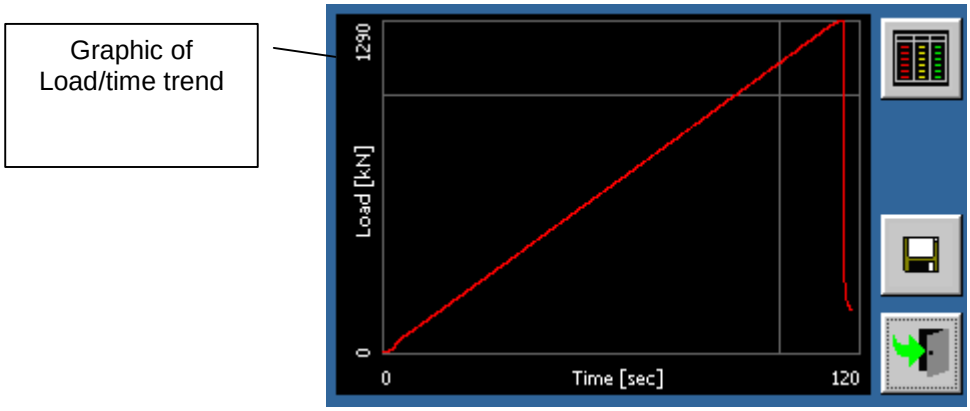
When the test ends, it is possible to visualize the test results in two different screens:

1. Numeric visualization.

IMPORTANT! Besides the visualization of the test results, the screen also show the reason why the test has been stopped (specimen breaking, alarm, manual interruption).



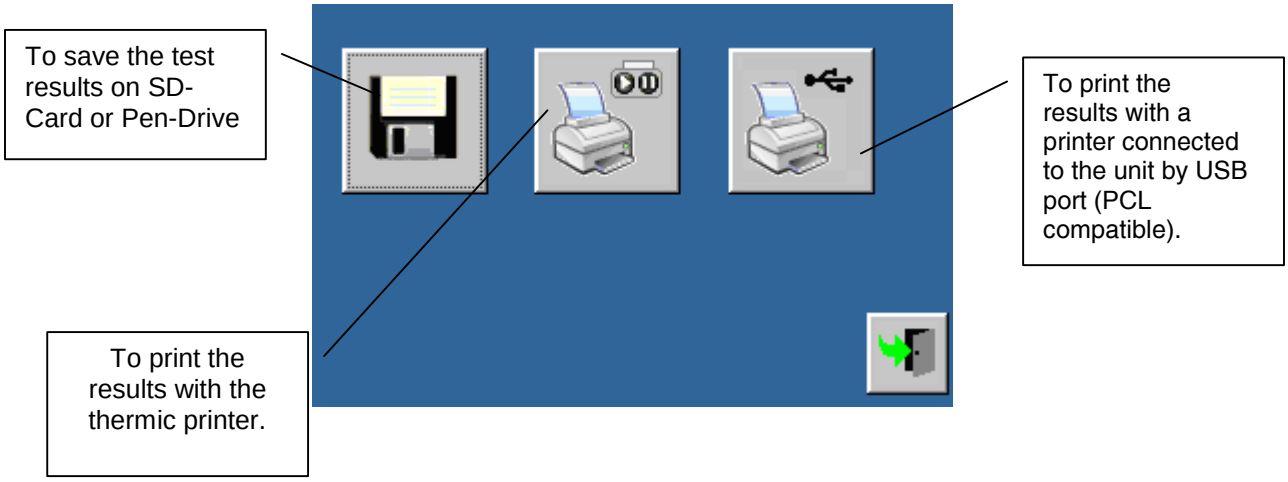
2. Graphic visualization.



Commands

1. to go to the graphic visualization from the numeric one
2. to go to the numeric visualization from the graphic one
3. to save the test results (SD-Card or a Pen-Drive have to be inserted into the specific slot).
4. to close the test execution screen.

❑ **Test results printing and storage.**

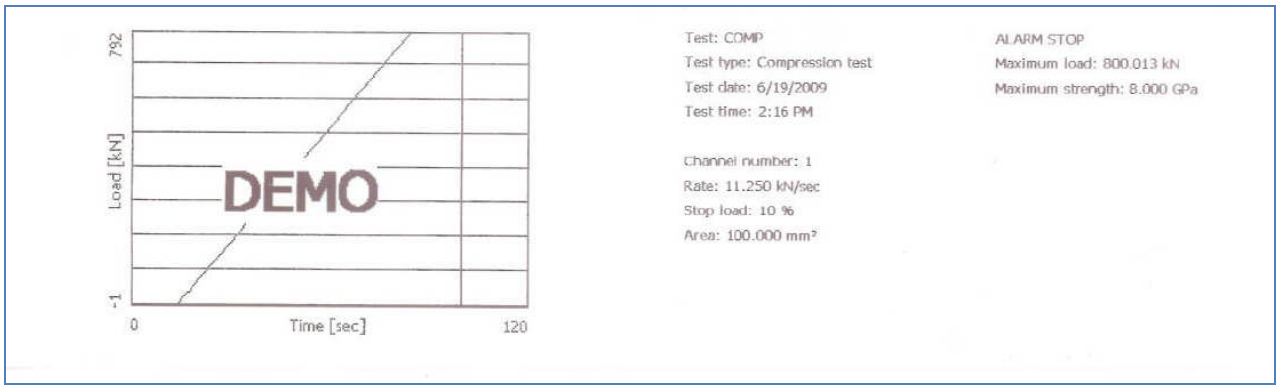


Commands

to close the screen of the test results printing and storage.

Test results printing

When the test data are sent to the printer on thermic-paper, a report is produced such as the one shown in the below picture:

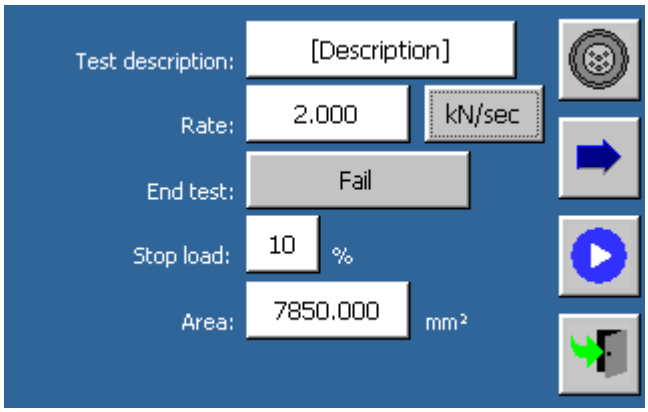


6.05 ELASTIC MODULUS TEST

ELASTIC MODULUS TEST

WARNING	Elastic modulus test can be executed only by purchasing the relevant licence.

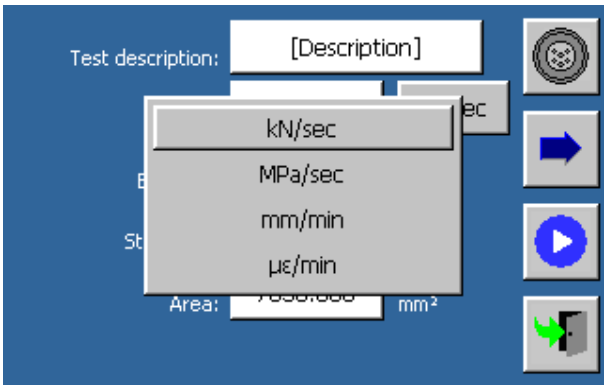
❑ Test configuration



❑ Parameters

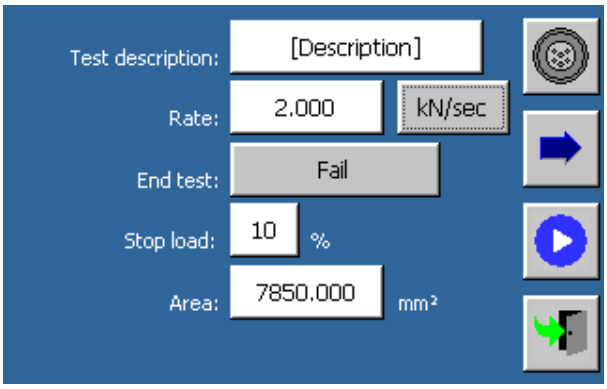
1) Test description
Alphanumeric value; it is a description saved along with test results.
2) Gradient
The gradient of the test execution could be one of the following types:

Gradient	Unit of Measurement (metric system)	Unitof Measurement (U.S.)	Notes
Load	kN/sec	lb/sec	
Pressure	Mpa/sec	Psi/sec	
Displacement	mm/min	in/min	A transducer on the piston stroke is required.
Strain	με/min	με/min	An axial strain gauge is required.

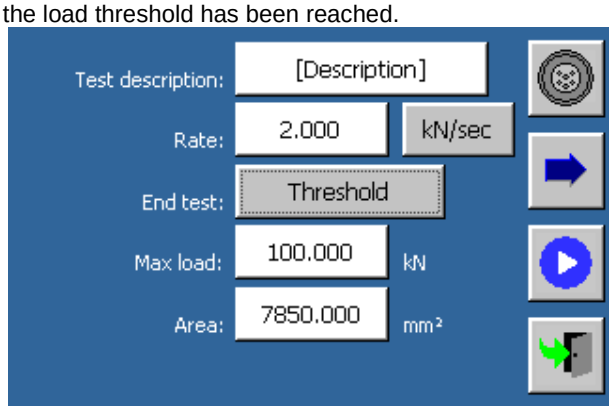


3) Test end conditions.
The test end conditions are as follows:

1) Breakage:
The specimen breakage is detected in correspondence to a load downfall. (expressed as percentage of loss compared with the maximum detected value).

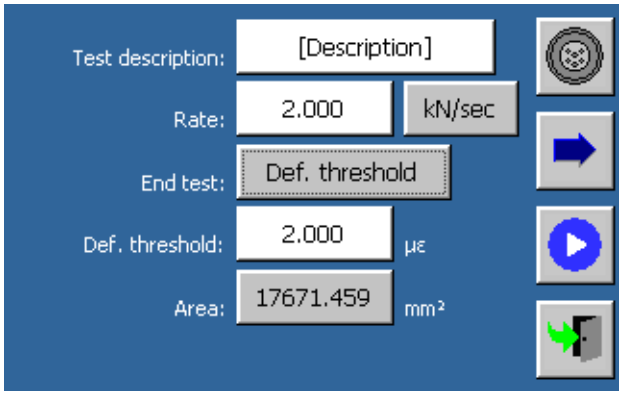


2) Threshold achievement:
The test stops when the load threshold has been reached.



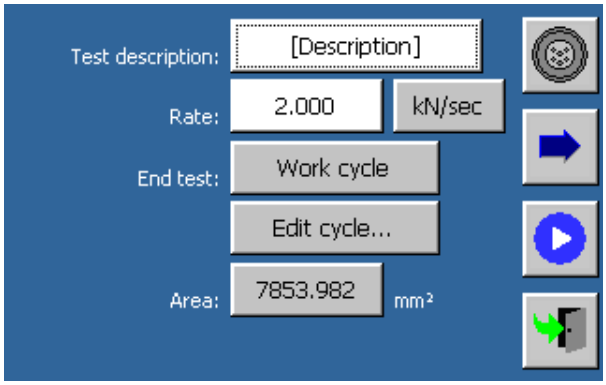
3) Strain threshold achievement

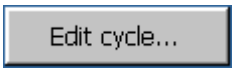
The test stops when the strain threshold has been reached



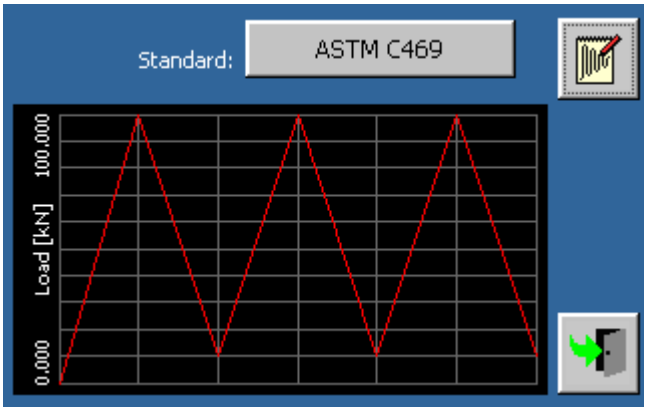
4) Execution of a cycle

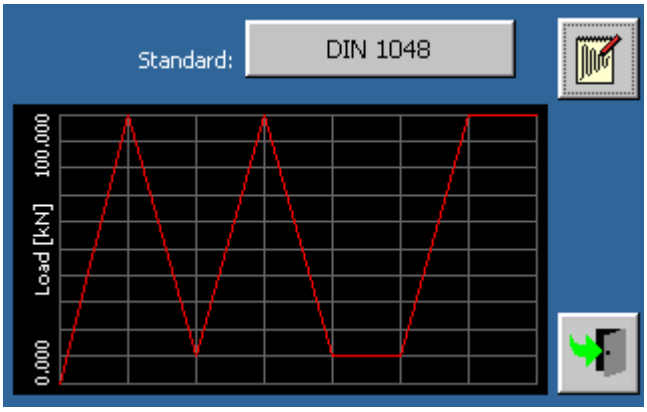
The test stops at the end of work cycle.

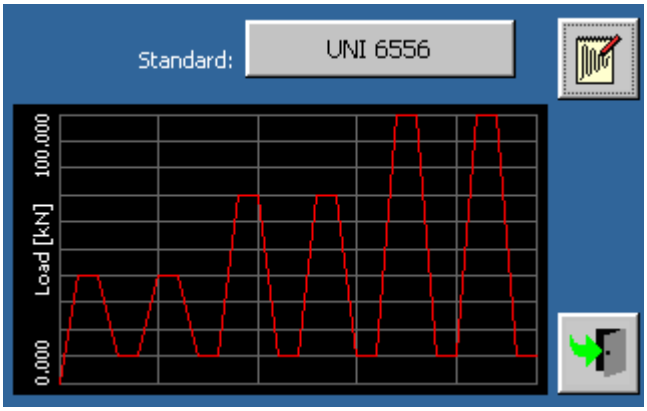


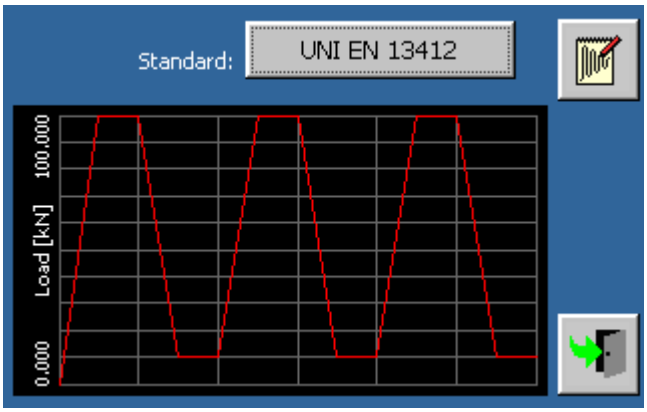
Press  to set a work cycle.

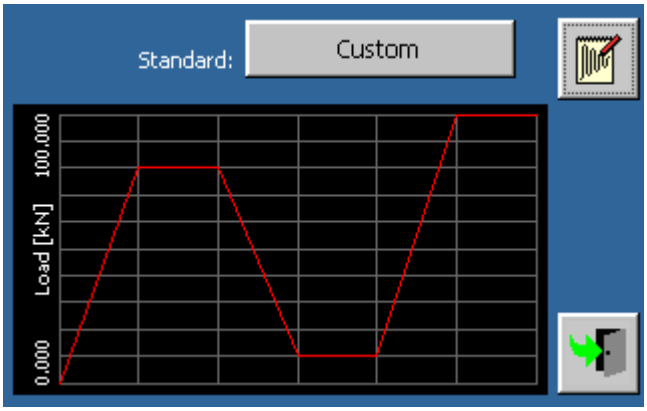
Cycles examples:



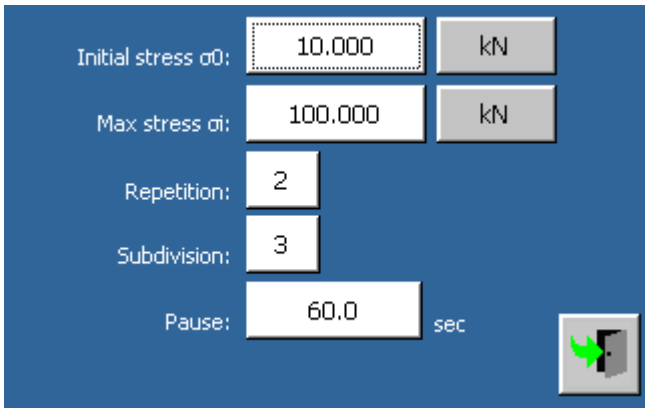

Standard:
DIN 1048
100.000
Load [kN]
0.000


Standard:
UNI 6556
100.000
Load [kN]
0.000


Standard:
UNI EN 13412
100.000
Load [kN]
0.000


Standard:
Custom
100.000
Load [kN]
0.000

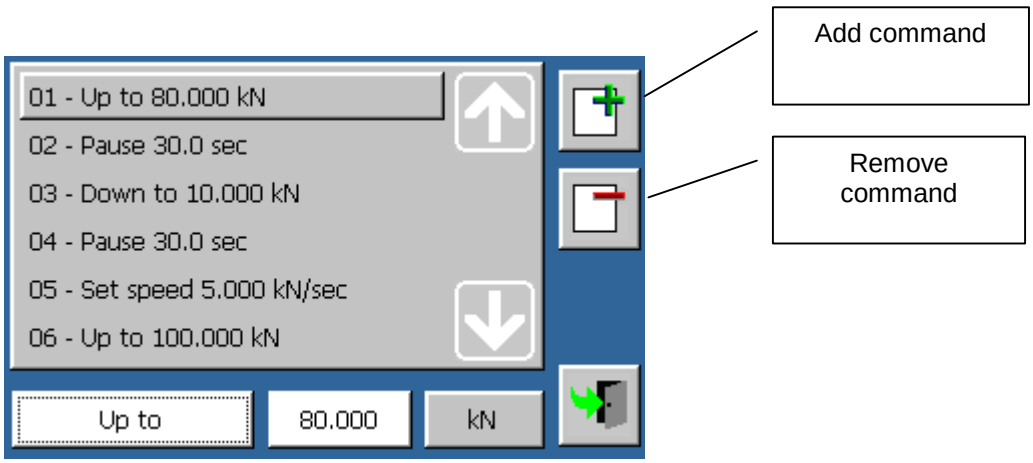
Touch to set up the configuration in accordance with the Standard:



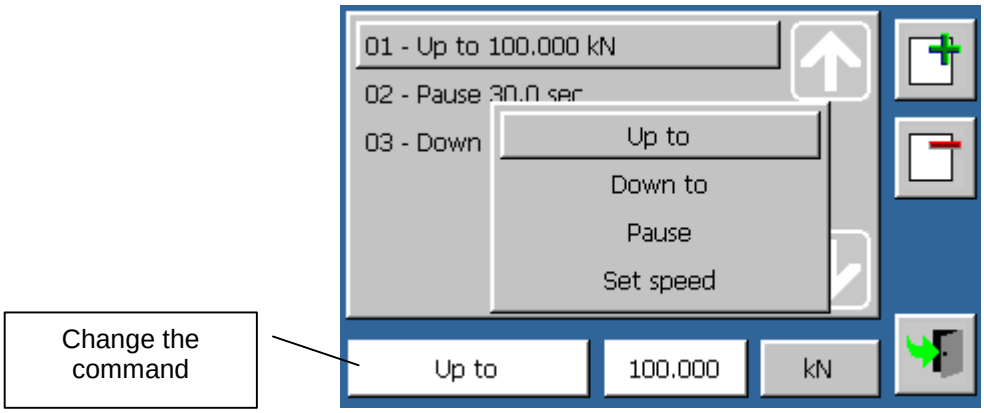
Parameters

Parameter	Values
Initial stress	➢ Minimum stress. The load and unload cycles will be performed between the minimum and the maximum stress.
Max stress	➢ Maximum stress. The load and unload cycles will be performed between the minimum and the maximum stress.
Repetitions	➢ Each stress level must be reached for the repetitions number shown on the display.
Subdivisions	➢ The interval between the maximum and the minimum stress is divided into the subdivisions shown on the display, in order to obtain intermediate stress levels.
Pause	➢ Seconds necessary for the reading stabilization of the equipment after the reaching of each stress level.

Touch to set the execution of a custom cycle:

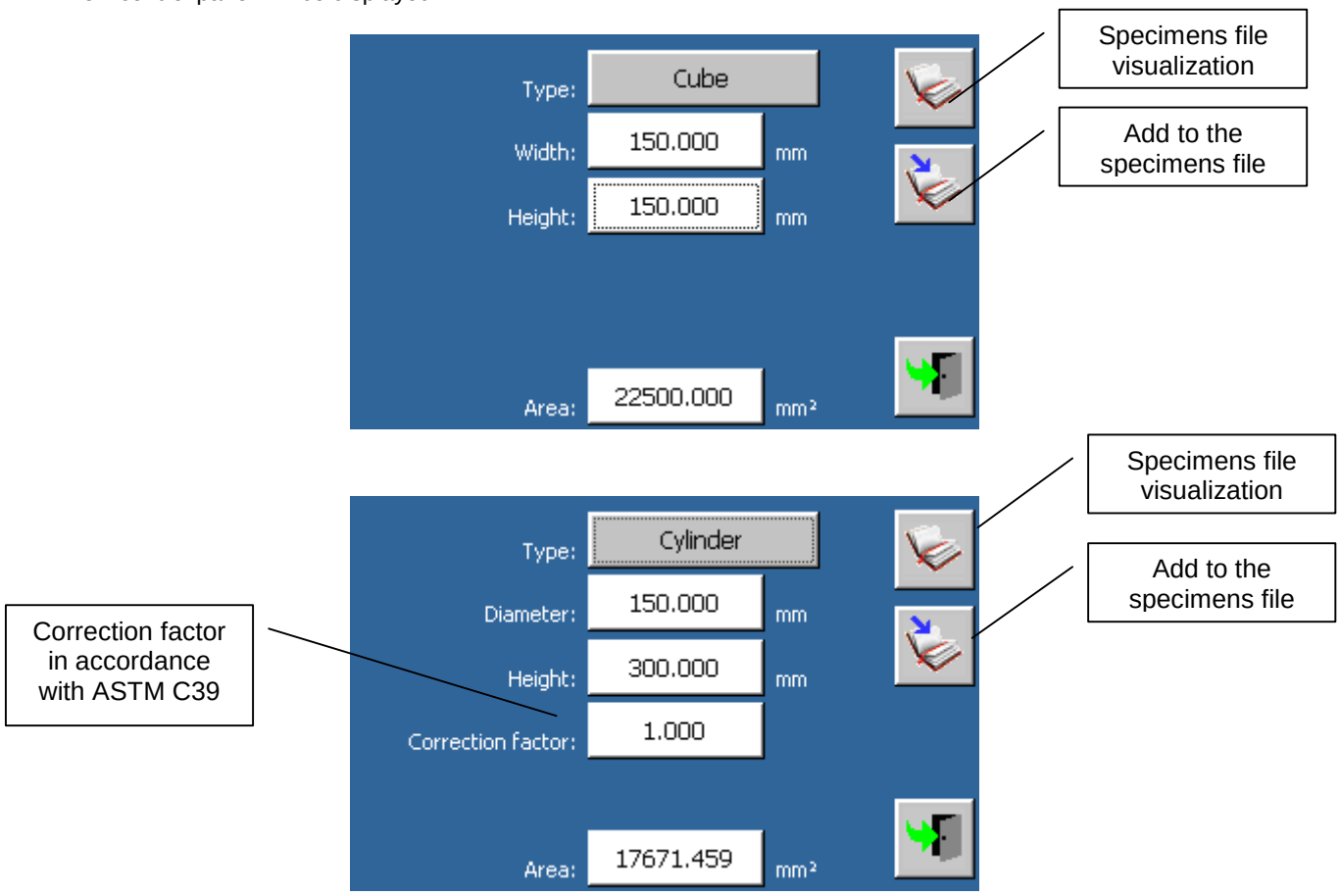


Set the cycle using the following commands:



4) Area

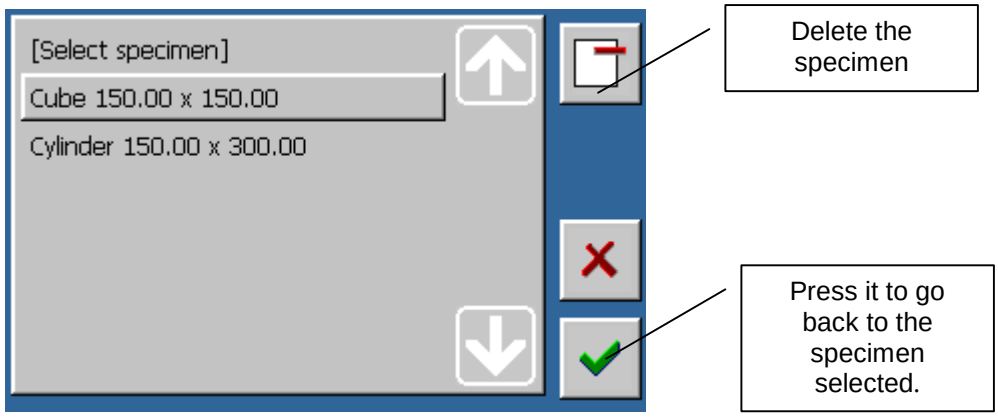
Specimen contact area, used for the load-pressure conversion.
A new control panel will be displayed:



When the operator exit this panel, the area will be recalculated automatically.

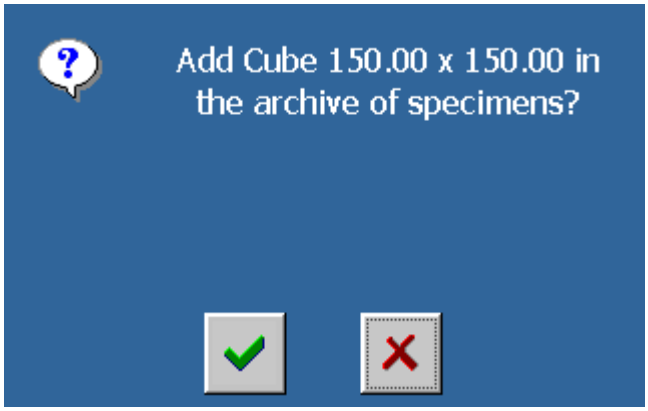
Specimens file display.

3.



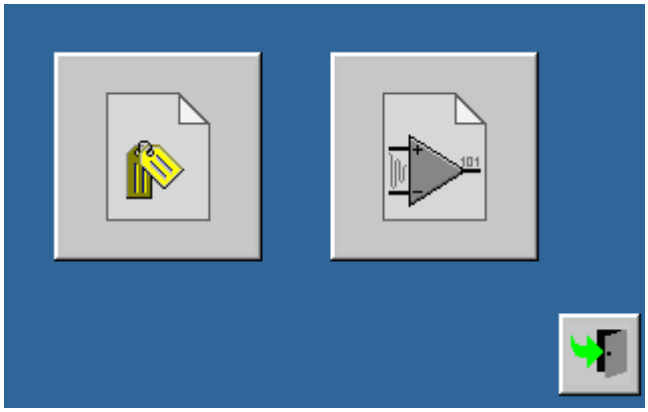
Add to the specimens file.

4.

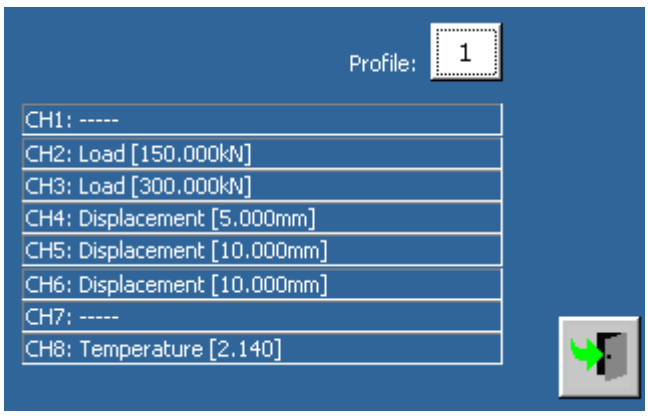


- **Command**

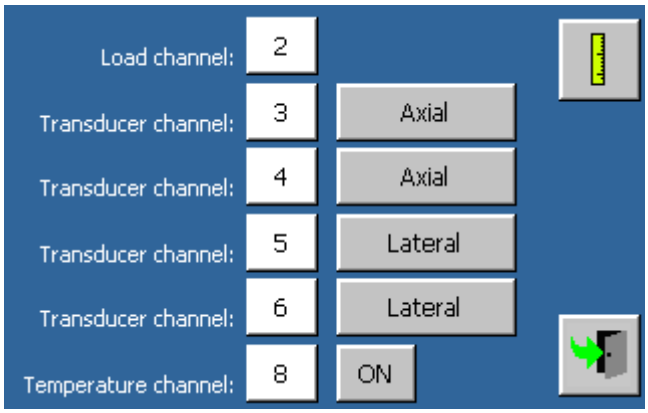
5. to match the machine functions with the transsducers.



6. Profile Configuration



7. Analog Channel Configuration

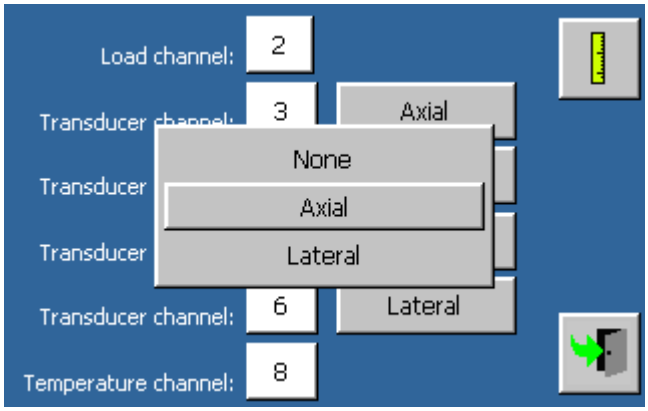


❑ Parameters

Parameter	Values
Load channel	➢ 1-8 it shows the pressure transducer channel the operator would like to use (1).
Extensometer channel	➢ 1-8 It shows the displacement transducers channels or strain gauge the operator would like to use (2).
Temperature channel	➢ 1-8 it shows the channel connected to the oil temperature probe.

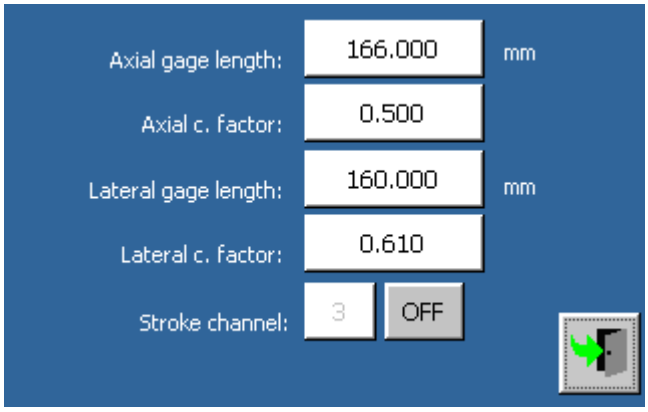
(1) A standard pressure transducer, or an advanced model, with a lower rate and with a laser specimen touch, can be selected.

(2) These could be absent or assembled in an axial or lateral mode. The means of all axial and lateral transducers will be calculated automatically. The calculation will result in two strain values: an axial value and a lateral one. One axial transducer is required at least in order to carry out a test with a strain control.



❑ Commands

1. to enter the base lenght or the piston stroke.

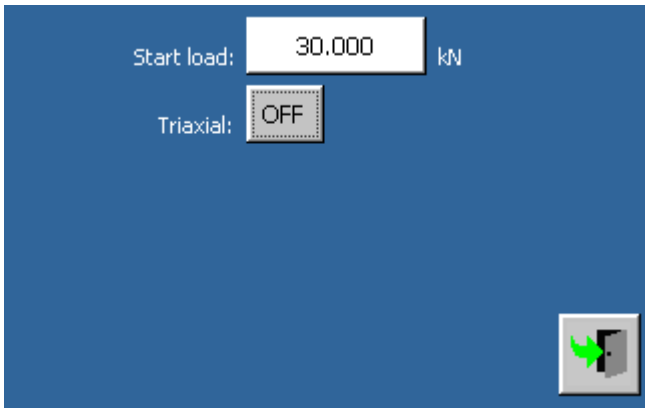


❑ **Parameters**

Parameter	Values
Axial base length	➢ It allows the conversion in με for the displacement transducers that have been calibrated in mm. It is valid for all transducers assembled in an axial mode.
Axial c. factor	➢ If a compression-meter is used, it adjusts the measuring on the basis of the lever arms ratio.
Lateral base length	➢ It allows the conversion in με for the displacement transducers that have been calibrated in mm. It is valid for all transducers assembled in an axial or lateral mode.
Lateral c. factor	➢ If a compression-meter is used, it adjusts the measuring on the basis of the lever arms ratio.
Stroke channel	➢ If a transducer is enabled on the piston stroke, the machine can carry out a test with a displacement control.

❑ **Commands**

1. to activate the panel with the advanced setting parameters.



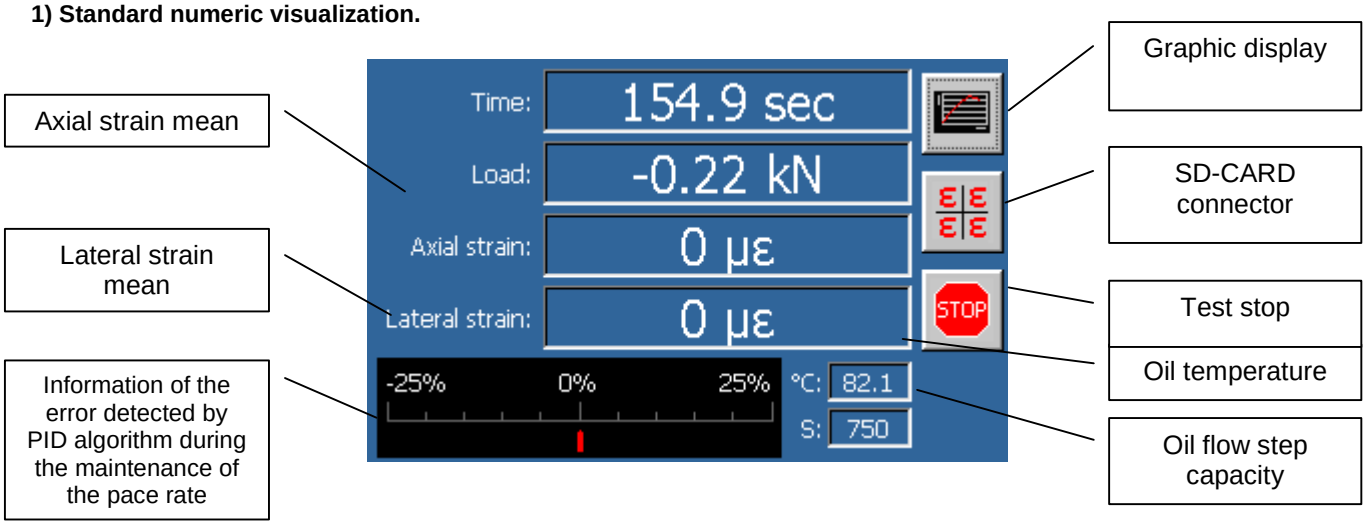
❑ **Parameters**

Parameter	Values
Start Load	➢ It checks the specimen break only after going over this load threshold, in order to avoid interruptions caused by oscillations.
Triaxial	➢ If this flag is active, the machine will pause the test just after the touch of the specimen, in order to apply a pressure into a triaxial cell by means of another appliance. By touching a button (visualized just after the touch point; see page 42), the machine will restart the standard control of the gradient.

❑ **Commands**

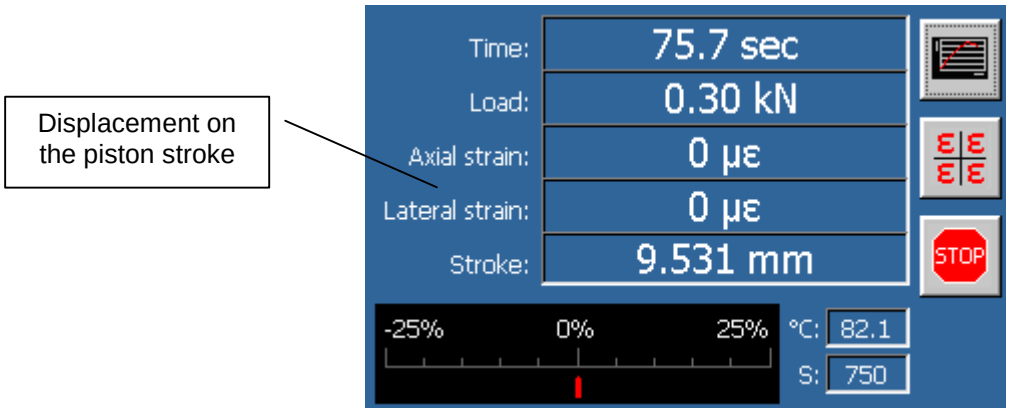
1. to start the test execution with the set parameters.
2. to close the test execution screen.

1) Standard numeric visualization.



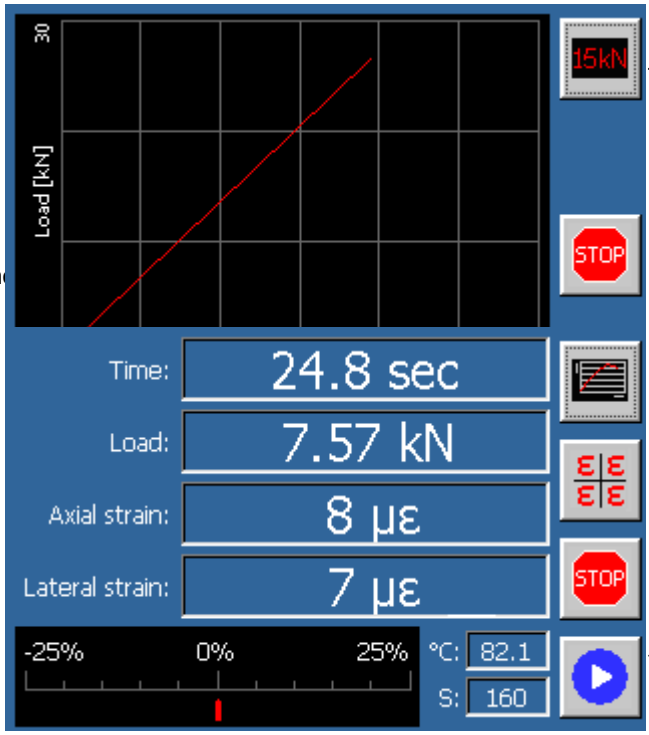
2) Numeric visualization with single strain gauge

3) Numeric visualization with one channel active on the piston stroke



4) Load/strain graphic visualization.

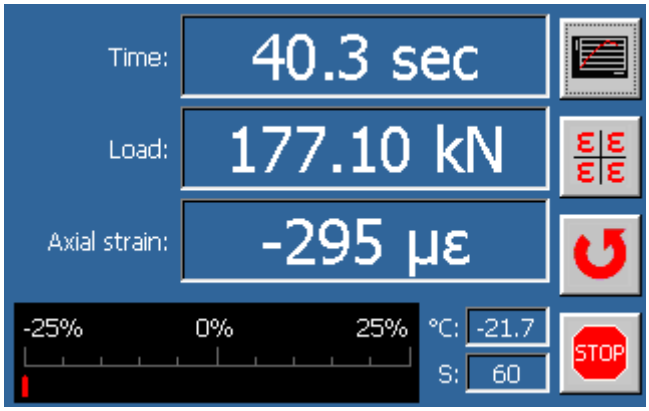
5) Triaxial test (pause after th



Numeric visualization

Test restart with gradient control

6. Execution cycles of loading and unloading

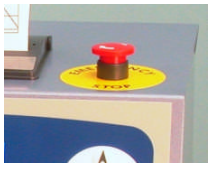


adds a repetition at the cycle that is currently running

❑ **Test stop**

Touch

or press **to stop the test execution.**



To stop the machine during a critical phase, press the red emergency button placed above the control unit.

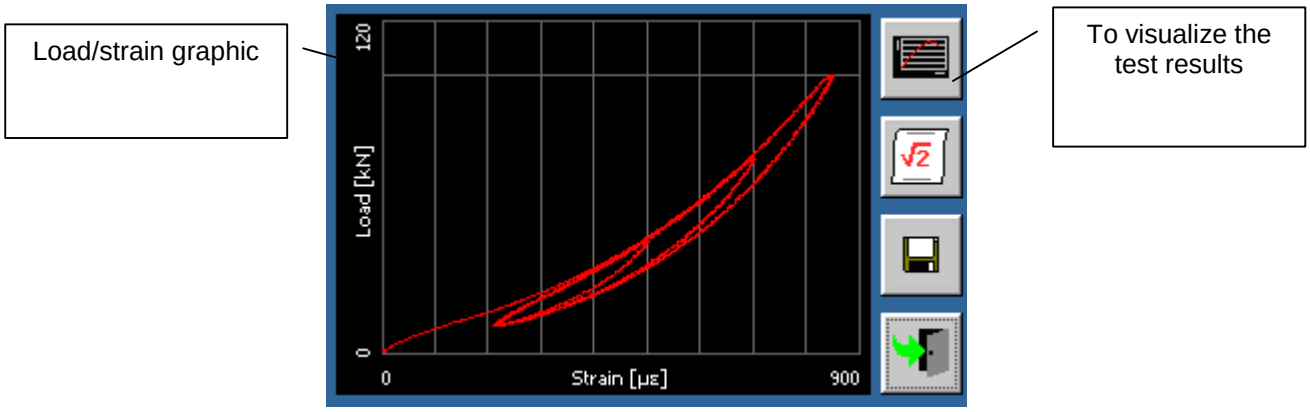
❑ **Test results**

At the end of the test, the results could be displayed by two screens:

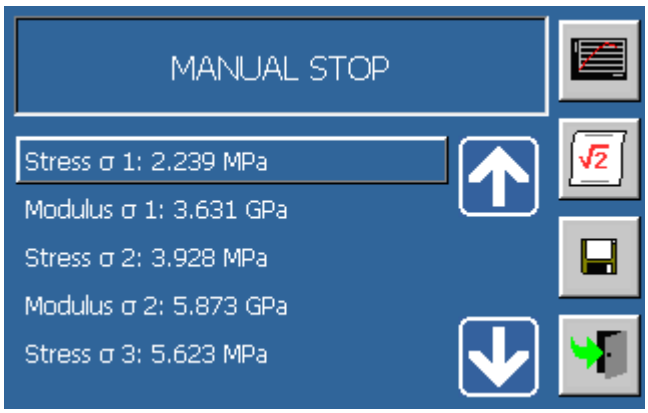
1. Numeric visualization.

IMPORTANT! The test results are displayed along with the explanation of the reason that caused the test end. (i.e. specimen break, alarm, manual interruption…).

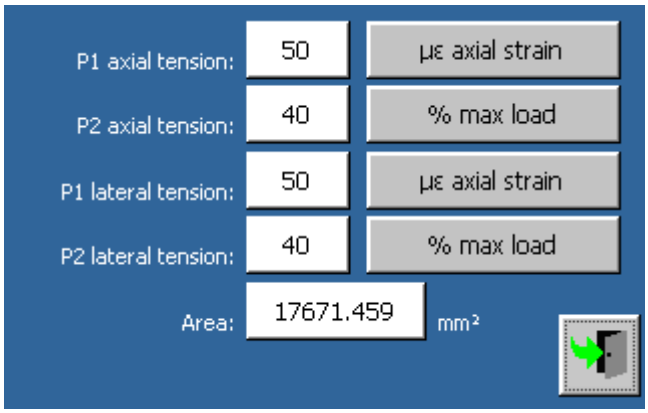
2. Graphic visualization.



In case of execution of load/unload cycle:



❑ Setting up the calculating parameters.



To recalculate the values and go back to the test results screen

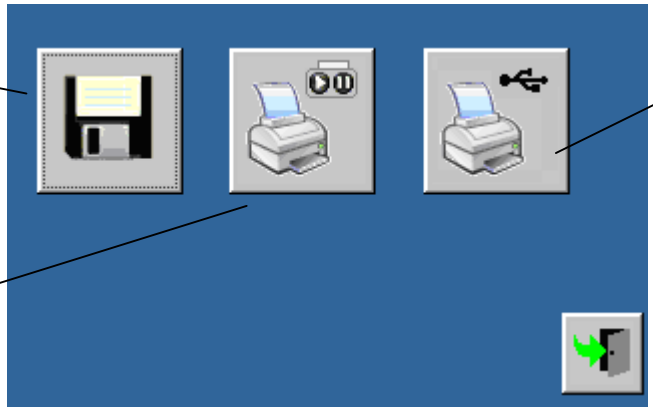
❑ Parameters

Parameter	Values
P1 axial tension	➢ This is the first point that determines the tangent on the axial tension. The value may be a strain threshold or a maximum load percentage.
P2 axial tension	➢ This is the second point that determines the tangent on the axial tension. The value may be a strain threshold or a maximum load percentage.
P1 lateral tension	➢ This is the first point that determines the tangent on the lateral tension. The value may be a strain threshold or a maximum load percentage.
P2 lateral tension	➢ This is the second point that determines the tangent on the lateral tension. The value may be a strain threshold or a maximum load percentage.
Area	➢ The area could be changed if the specimen has failings. It affects the calculation of the resistance.

❑ Test results printing and storage.

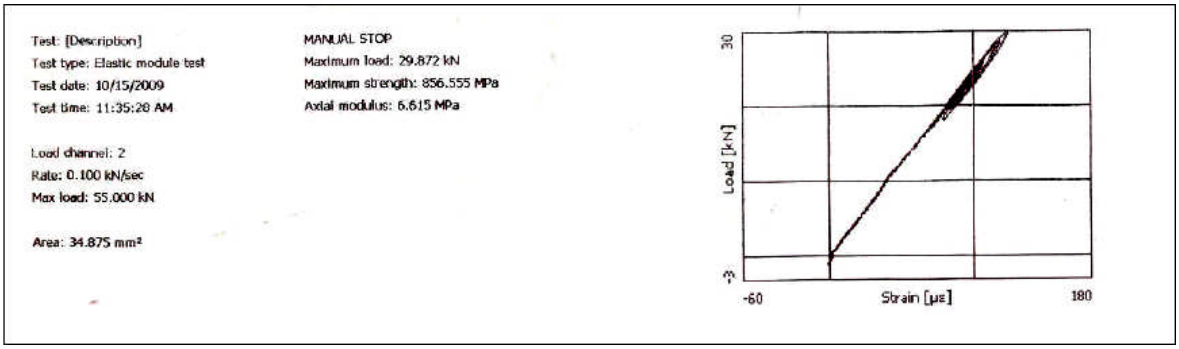
To save the test results on SD-Card or Pen-Drive

To print the results with the thermic printer.



To print the results with a printer connected to the unit by USB port (PCL compatible)

When the test data are sent to the printer on thermic-paper, a report is produced such as the one shown in the below picture:

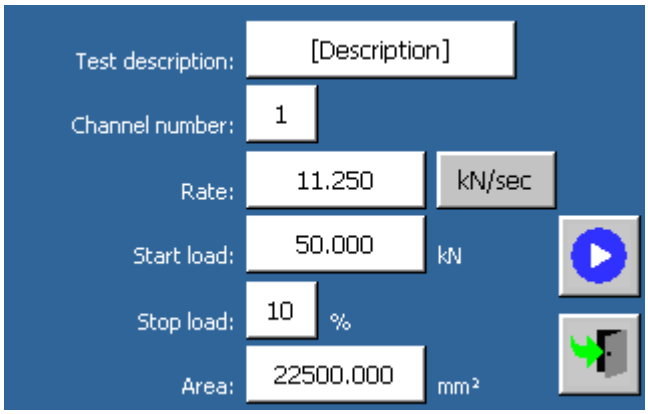


6.06	SPLITTING TENSILE TEST

SPLITTING TENSILE TEST

	WARNING	Splitting tensile test can be executed only by purchasing the relevant licence.

❑ Test configuration



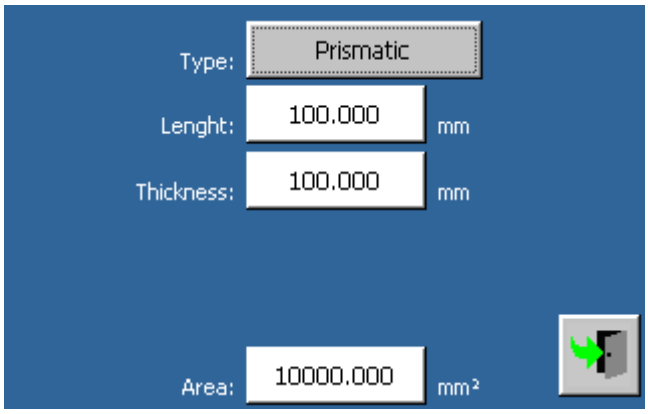
Parameters

Parameter	Value	Metric Unit system	U.S. Unit system
Test description	➢ Alphanumeric value		
Gradient	➢ Numeric value	kN/sec MPa/sec	lb/sec psi/sec
Initial Load (1)	➢ Numeric value	kN	lb
Load at failure (2)	➢ Numeric value	%	%
Area	➢ Numeric value	mm²	in²

(1) The machine only detects the specimen break after going over the starting load value.
(2) The break of the specimen is detected in correspondence to the load decrease (decrease percentage from the peak load).

❑ **Area**

This is the surface in contact with the specimen; this value is useful for the load-pressure conversion. and if selected a new page will appear on the screen.

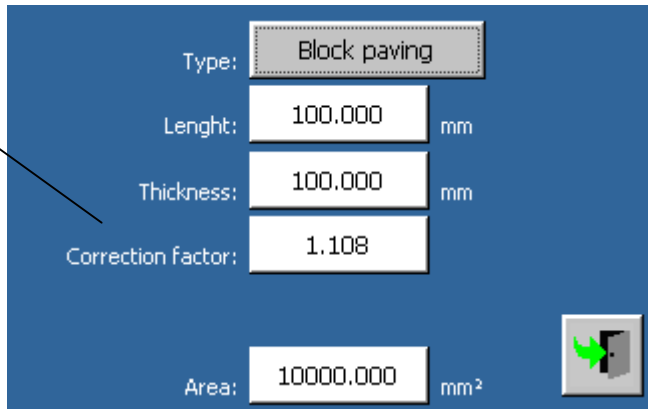


Specimens file display

Correction factor according to ASTM C39

Add to the specimens file

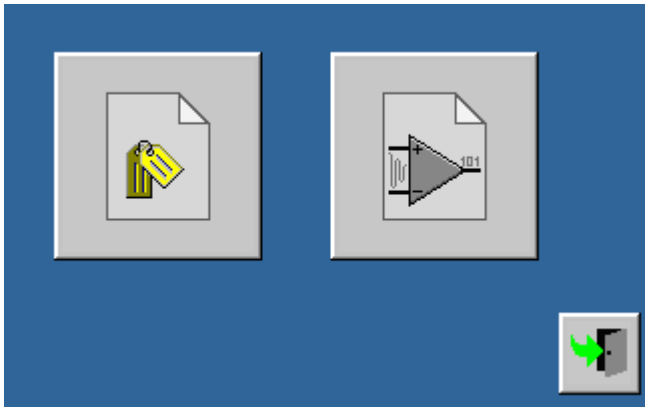
Correction Factor according to UNI EN 1338



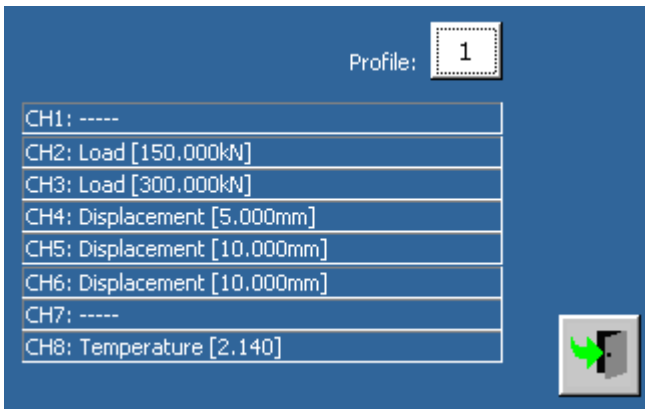
When returning to the previous page, the Area will automatically recalculated.

❑ **Command**

1. To associate the machine functions with the available transducers



2. Profile Configuration



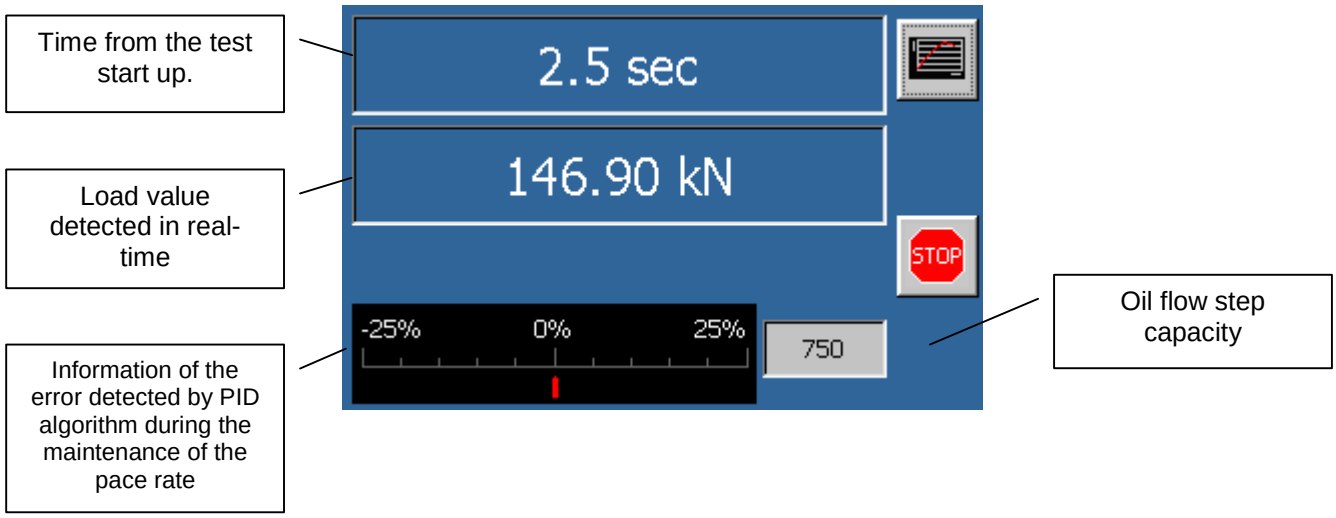
3. Analog Channel Configuration

4. to start the test execution with the set parameters.
5. to close the test execution screen.

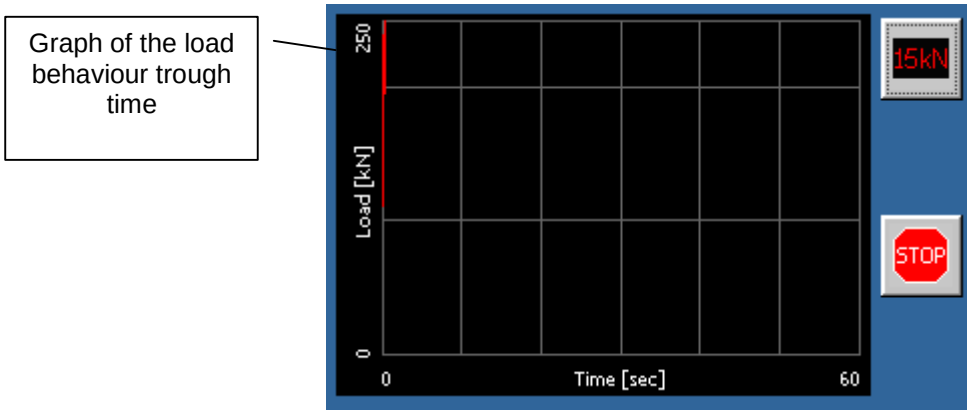
❑ **Test execution on automatic machine**

During the test execution, the progress can be visualized by means of two screens:

1. Numeric visulization.



1. Graphic visualization



The piston will rise at a high speed until the specimen touches the upper platen; at this point the system will provide to maintain the pace rate previously set up. The gradient bar, located at the bottom of the display, shows in % the real time error of the applied load.

When the specimen reaches the failure, with subsequent release of the oil pressure, the maximum load reached will be visualized on the screen.

❑ **Commands**

1. To view the graph

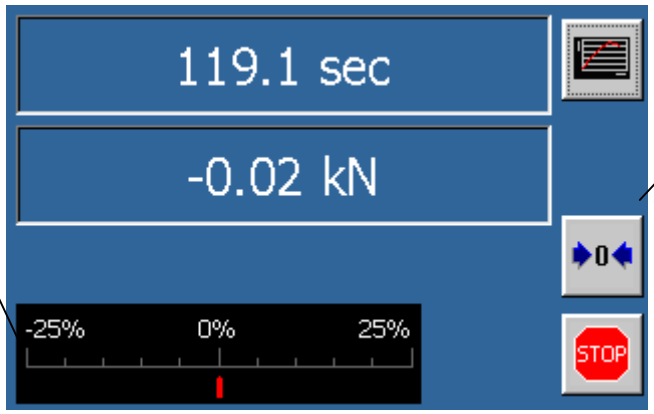
2.

To view the numeric values

3.

To stop the test

❑ **Test execution with a manual machine**



"Pace rate meter": it shows the error during the maintenance of the pace rate

Button to perform the tare manually

1 Act on the charge-discharge knob of the oildynamic unit and rotate it clockwise in order to close the circuit. Press the pace rate regulator and position the piston in such a way that it seems suspended on the oil contained in the cylinder, but paying attention that the specimen does not get in touch with the upper plate.

2. In case of need, press to perform the tare manually.

3. Press the pace rate regulator until the specimen gets in touch with the upper plate.
4. Release immediately the pace rate regulator and put the black pointer between 5-6 by rotating it clockwise in order to start the rise of the load. The error of the application of the load could be shown in real time by means of the "pace rate meter" visualized on the bottom of the display. Act on the pace rate regulator to correct the error: rotate it clockwise to increase the pace rate or rotate it counter-clowise to decrease the pace rate.
5. As soon as the specimen is broken, discharge the pressure by means of the charge-discharge knob. The display will show the maximum load reached during the test and the strength resulting from the ratio between the load and the specimen surface (see the picture here below).

❑ **Test stop**

Touch **or press** **to stop the test execution.**

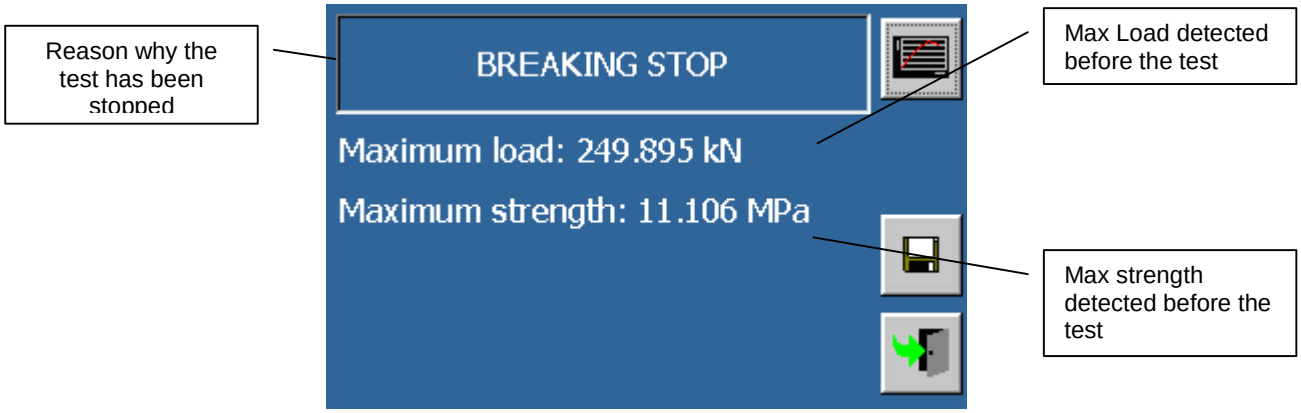
To stop the machine during a critical phase, press the red emergency button placed above the control unit.

❑ **Test results**

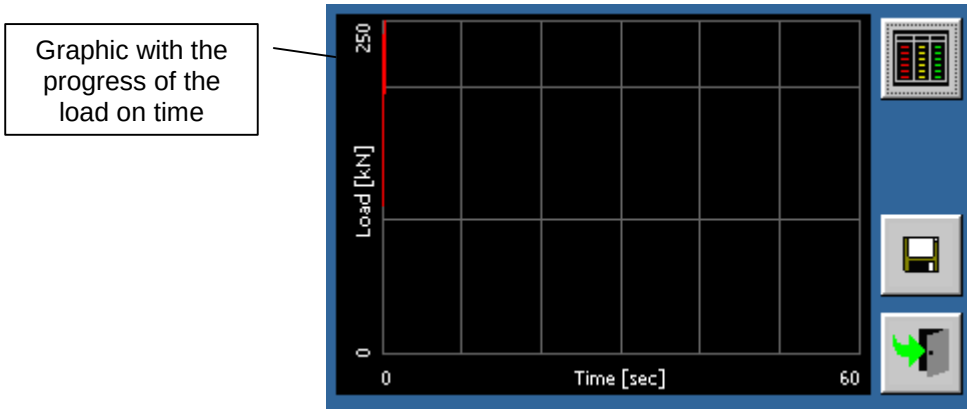
After the test execution, the progress can be visualized by means of two screens:

1. Numeric visualization.

	WARNING IMPORTANT	Besides the visualization of the test results, the screen also show the reason why the test has been stopped (specimen breaking, alarm, manual interruption).



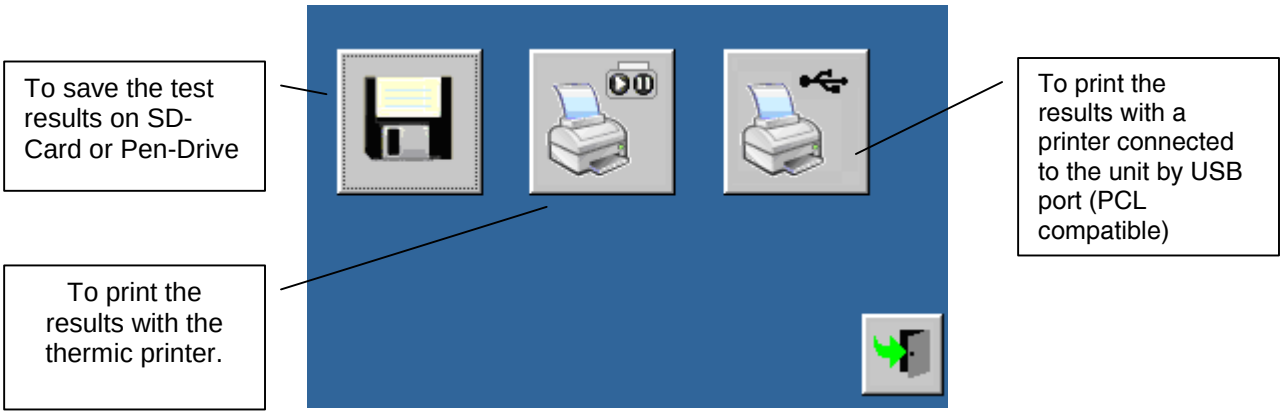
2. Graphic visualization.



Commands

1. to go to the graphic visualization from the numeric one
2. to go to the numeric visualization from the graphic one
3. to save the test results (SD-Card or a Pen-Drive have to be inserted into the specific slot) or to send them to the thermic printer.
4. to close the screen of the test execution.

❑ **Test results printing and storage.**

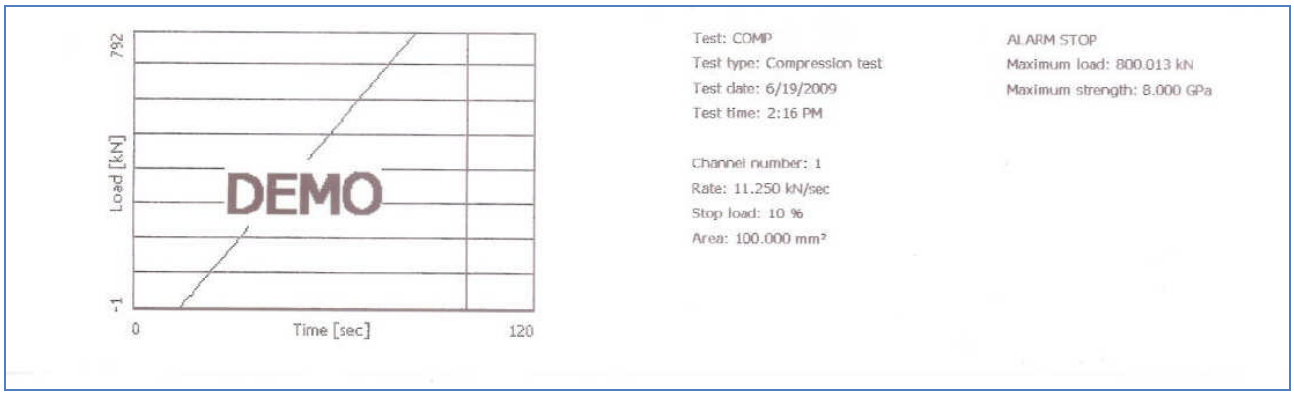


❑ Commands

1. to close the screen of the test results printing and storage.

❑ Test results printing

When the test data are sent to the printer on thermic-paper, a report is produced such as the one shown in the below picture:

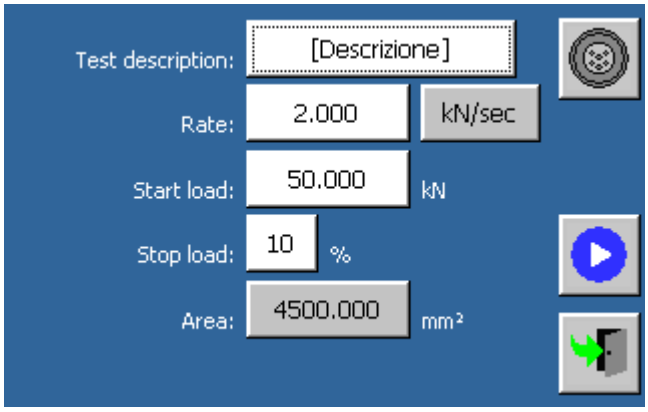


6.07	FLEXURAL TEST

FLEXURAL TEST

	WARNING	Flexural test can be executed only by purchasing the relevant licence.

❑ Test configuration



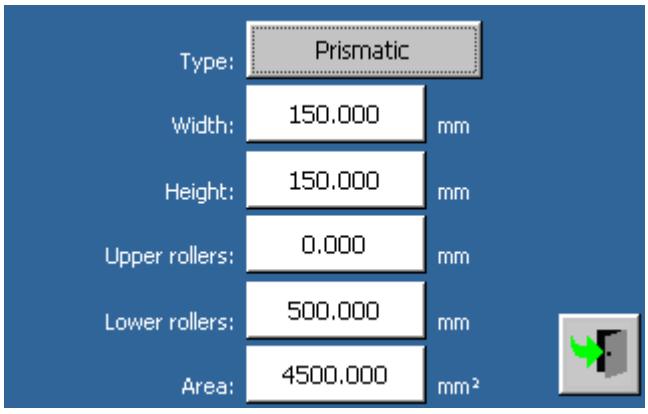
❑ Parameters

Parameter	Value	Metric Unit system	U.S. Unit system
Test description	➢ Alphanumeric value		
Channel number	➢ 1-8		
Gradient	➢ Numeric value	kN/sec MPa/sec	lb/sec psi/sec
Pace rate **(1)**	➢ Numeric value	kN	lb
Stop load **(2)**	➢ Numeric value	%	%
Area	➢ Numeric value	mm²	in²

(1) The machine only detects the specimen break after going over the starting load value.
(2) The break of the specimen is detected in correspondence to the load decrease (decrease percentage from the peak load).

❑ Area

This is the surface in contact with the specimen; this value is useful for the load-pressure conversion.

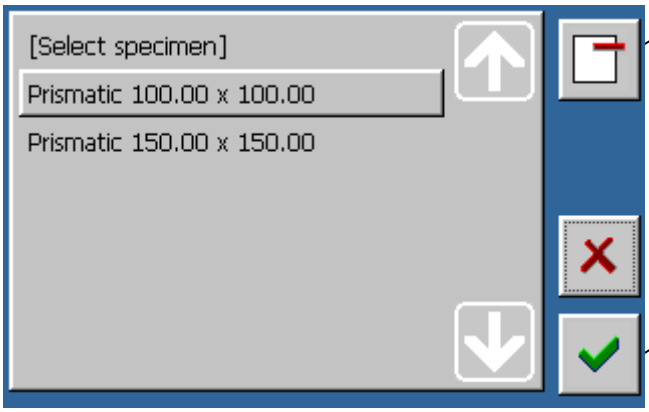


❑ Parameters

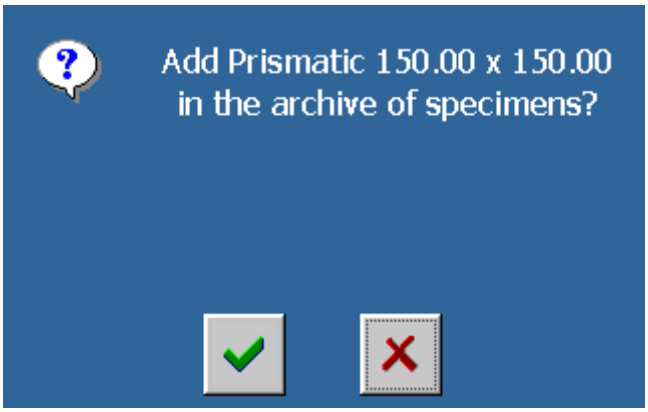
Parameter	Value
Width	➢ Width of the specimen.
Height	➢ Height of the specimen.
Upper rollers	➢ Distance between the upper rollers of the flexural frame. Insert 0 if there is one single roller.
Lower rollers	➢ Distance between the lower rollers of the flexural frame

The area screen will be recalculated after the exit from the panel.

Specimens file display:

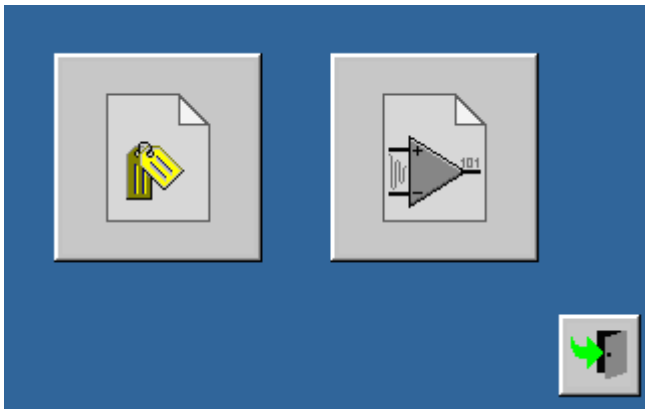


Add to the specimens file:

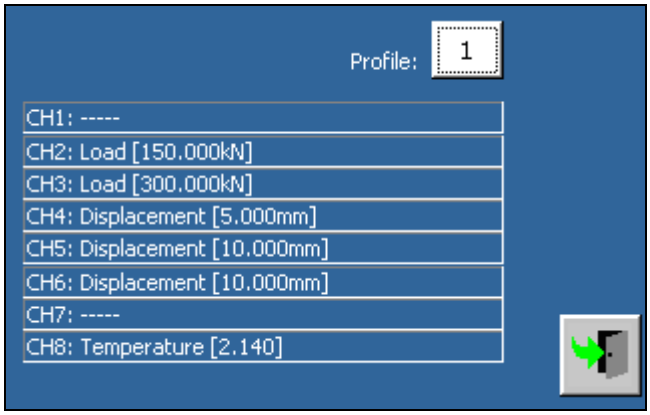


❑ **Commands**

➢ To associate the machine functions with the available transducers



➢ Profile Configuration



➢ Analog Channel Configuration

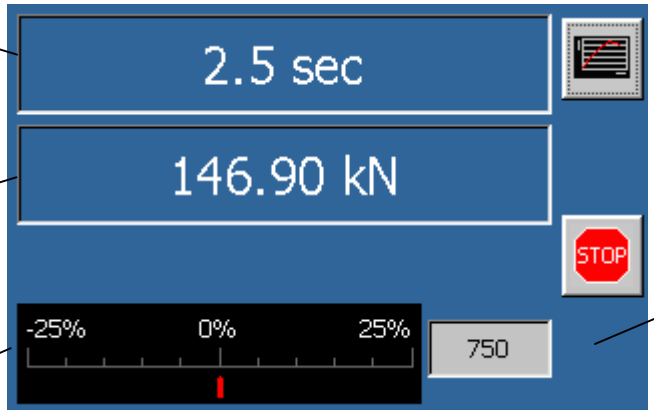
➢ to start the test execution with the set parameters.

➢ to close the test execution screen.

❑ **Test execution on automatic machine**

During the test execution, the progress can be visualized by means of two screens:

1. Numeric visualization.



Time from the test start up.

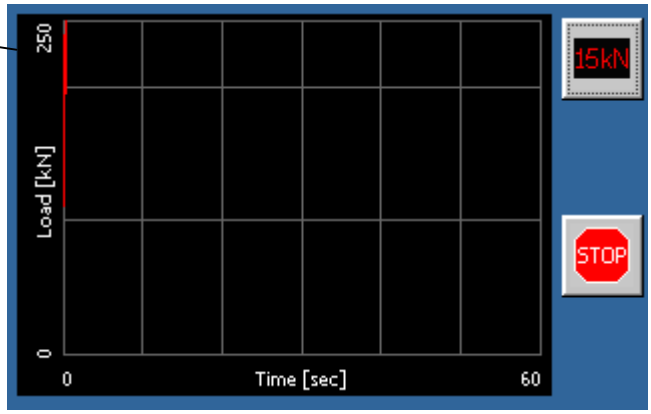
Load value detected in real-time

Information of the error detected by PID algorithm during the maintenance of the pace rate

Oil flow step capacity

2. Graphic visualization.

Graphic with the progress of the load on time



The piston will rise at a high speed until the specimen touches the upper platen; at this point the system will provide to maintain the pace rate previously set up. The gradient bar, located at the bottom of the display, shows in % the real time error of the applied load.

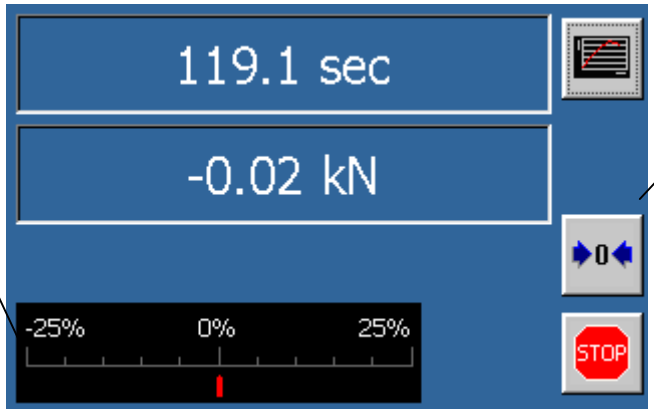
When the specimen reaches the failure, with subsequent release of the oil pressure, the maximum load reached will be visualized on the screen.

❑ **Commands**

1. To view the graph
2. To view the numeric values
3. To stop the test

❑ **Test execution with a manual machine**

“Pace rate meter”: it shows the error during the maintenance of the pace rate



Button to perform the tare manually

1 Act on the charge-discharge knob of the oildynamic unit and rotate it clockwise in order to close the circuit. Press the pace rate regulator and position the piston in such a way that it seems suspended on the oil contained in the cylinder, but paying attention that the specimen does not get in touch with the upper plate.

2. In case of need, press

to perform the tare manually.

3. Press the pace rate regulator until the specimen gets in touch with the upper plate.
4. Release immediately the pace rate regulator and put the black pointer between 5-6 by rotating it clockwise in order to start the rise of the load. The error of the application of the load could be shown in real time by means of the “pace rate meter” visualized on the bottom of the display. Act on the pace rate regulator to correct the error: rotate it clockwise to increase the pace rate or rotate it counter-clowise to decrease the pace rate.
5. As soon as the specimen is broken, discharge the pressure by means of the charge-discharge knob. The display will show the maximum load reached during the test and the strength resulting from the ratio between the load and the specimen surface (see the picture here below).

❑ Test stop

Touch

or press **to stop the test execution.**

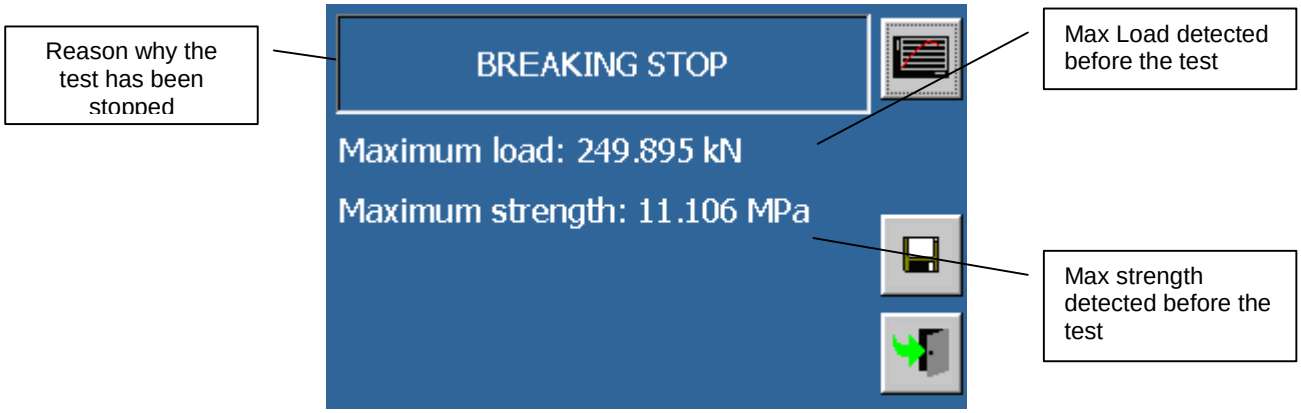
To stop the machine during a critical phase, press the red emergency button placed above the control unit.

❑ Test results

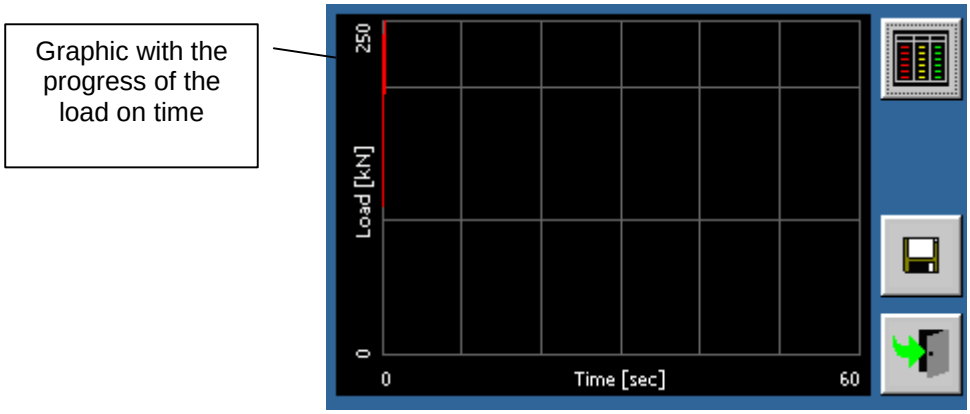
When the test ends, it is possible to visualize the test results in two different screens:

1. Numeric visualization.

IMPORTANT! Besides the visualization of the test results, the screen also shows the reason why the test has been stopped (specimen breaking, alarm, manual interruption).



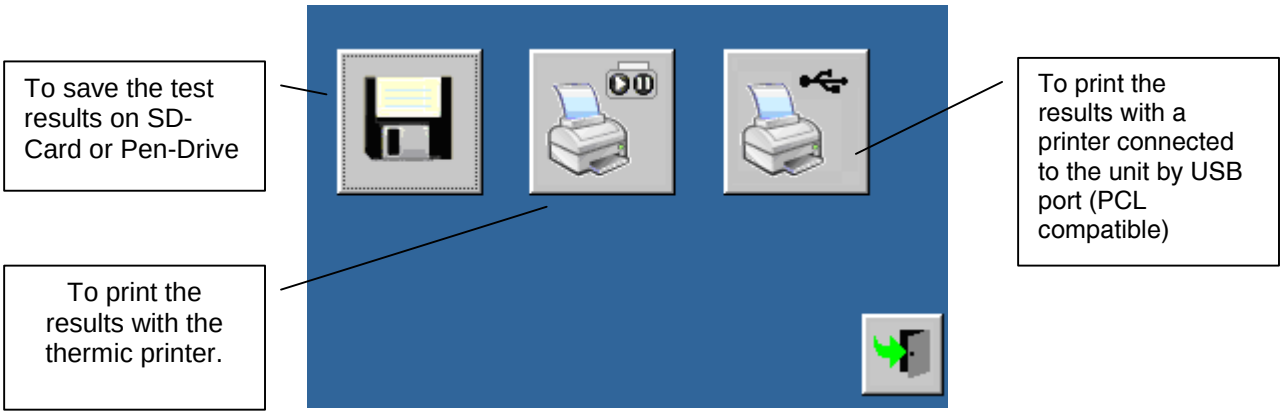
2. Graphic visualization.



Commands

1. to go to the graphic visualization from the numeric one
2. to go to the numeric visualization from the graphic one
3. to save the test results (SD-Card or a Pen-Drive have to be inserted into the specific slot) or to send them to the thermic printer.
4. to close the screen of the test execution.

❑ Test results printing and storage.

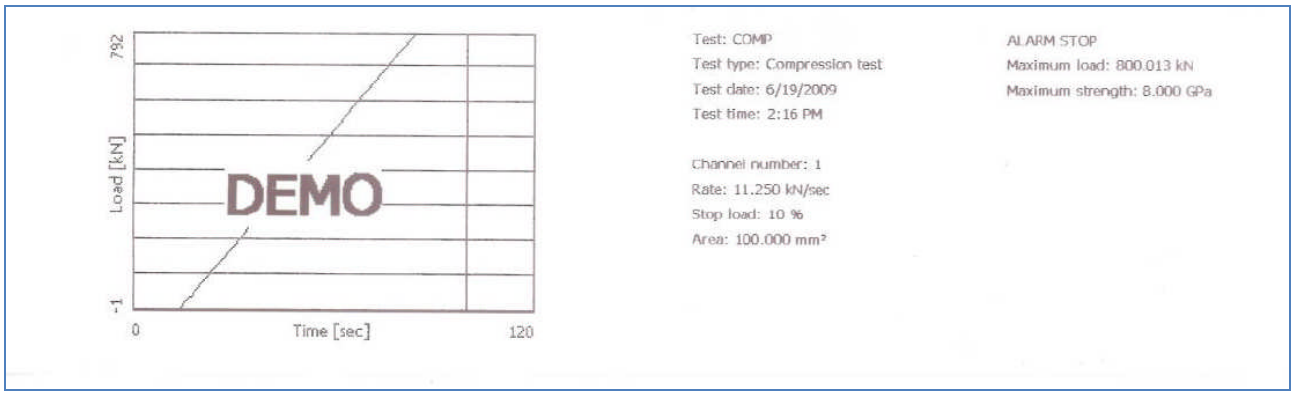


❑ Commands

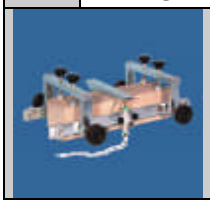
to close the screen of the test results printing and storage.

❑ Test results printing

When the test data are sent to the printer on thermic-paper, a report is produced such as the one shown in the below picture:



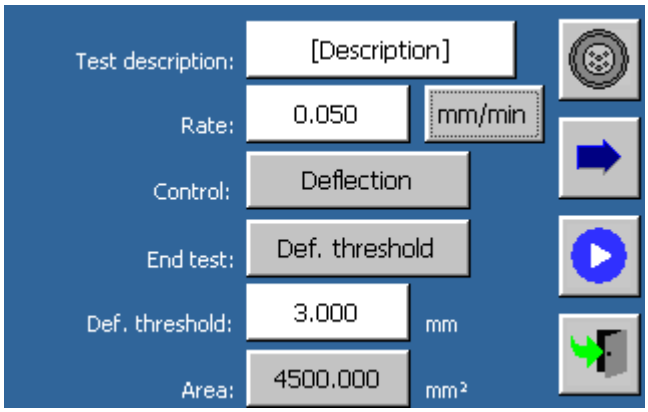
6.08 FLEXURAL TEST ON FIBER REINFORCED SPECIMENS



FLEXURAL TEST ON FIBER REINFORCED SPECIMENS

WARNING	Flexural test on fiber reinforced specimens can be executed only by purchasing the relevant licence.

❑ Test configuration

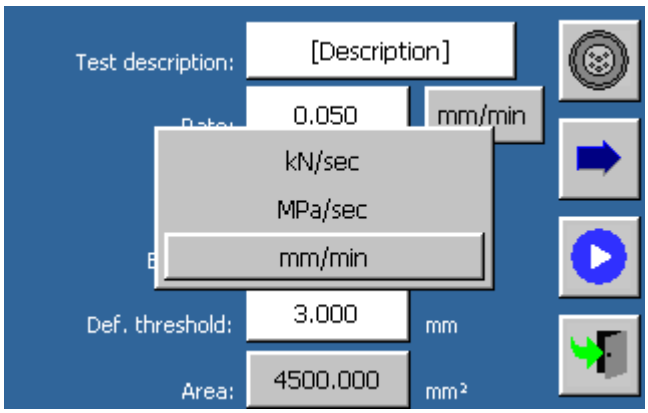


❑ Parameters

1) Test description
Alphanumeric value; it is a description saved along with test results.

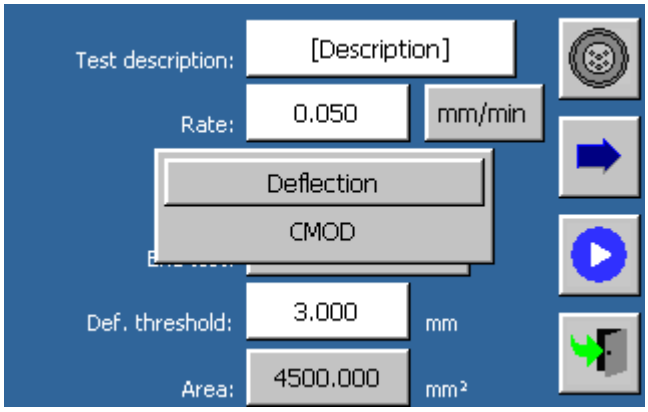
2) Gradient
The gradient of the test execution could be one of the following types:

Gradient	Metric Unit system	U.S. Unit system	Note
Load	kN/sec	lb/sec	
Pressure	Mpa/sec	Psi/sec	
Displacement	mm/min	in/min	Displacement trasducer is needed

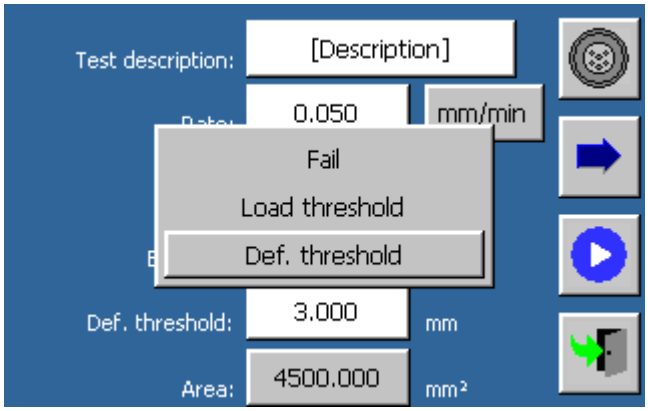


3) Gradient check

By displacement gradient, specify if the check must be executed according to the measure of the deflection or of the opening at the crack base. In the configuration, make sure to have at least a transducer of the type selected.

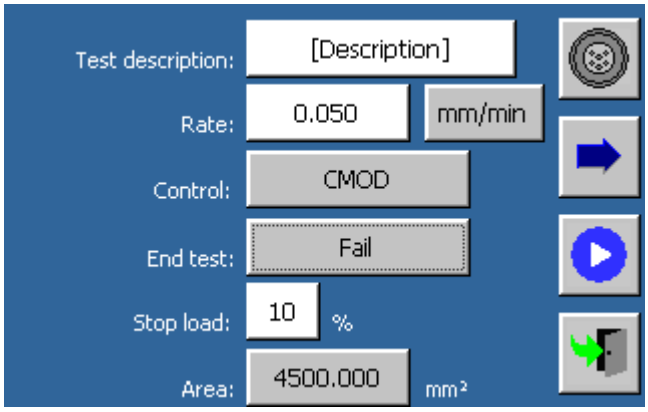


4) Test end conditions.
The test end conditions are as follows:

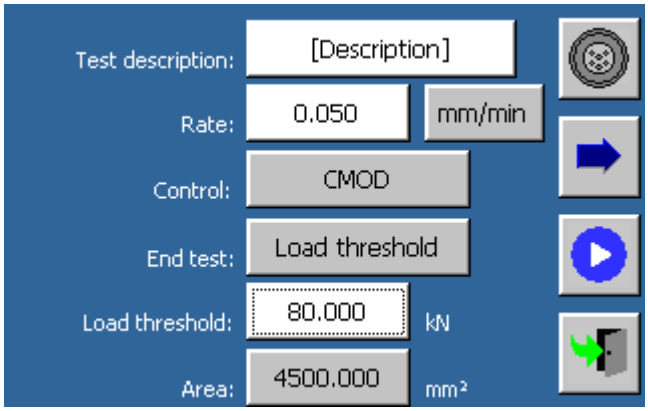


1) Breakage:

The specimen breakage is detected in correspondence to a load downfall. (expressed as percentage of loss compared with the maximum detected value).

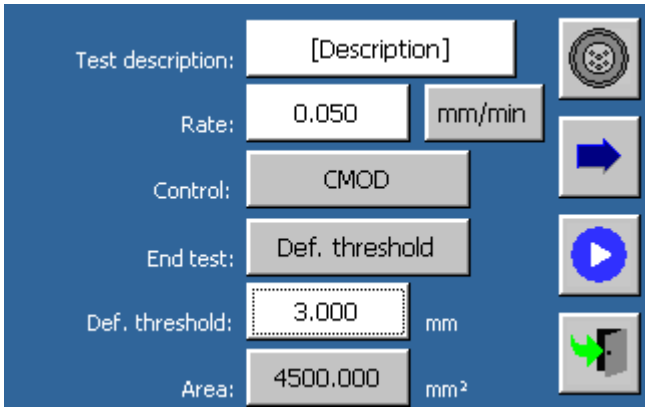


2) Threshold achievement:
The test stops when the load threshold has been reached

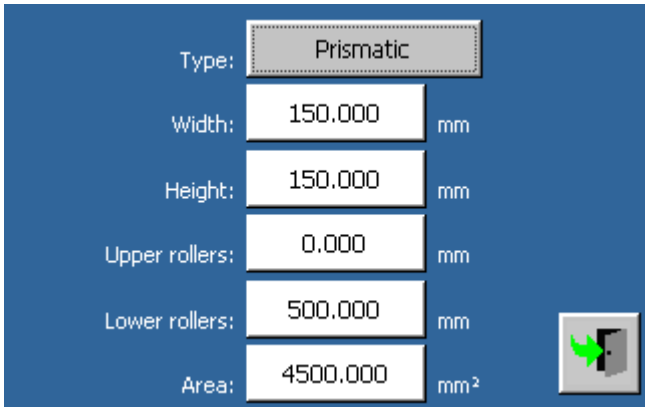


3) Deformation threshold achievement:

The test stops when the deformation threshold has been reached. According to the control selected, deformation is represented by the deflection or CMOD measure.



5) Area
This is the surface in contact with the specimen; this value is useful for the load-pressure conversion. Selecting it lets a new screen appear:

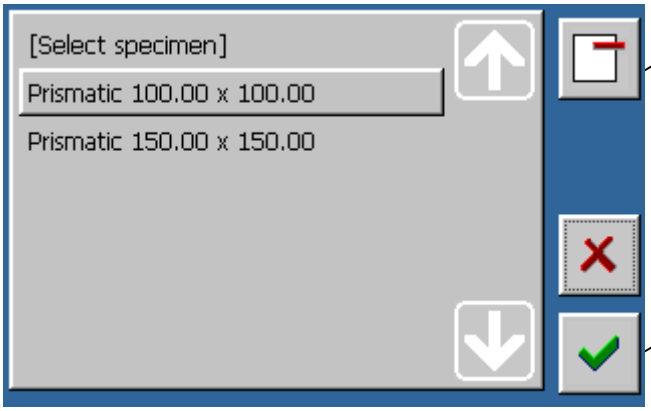


Parameters

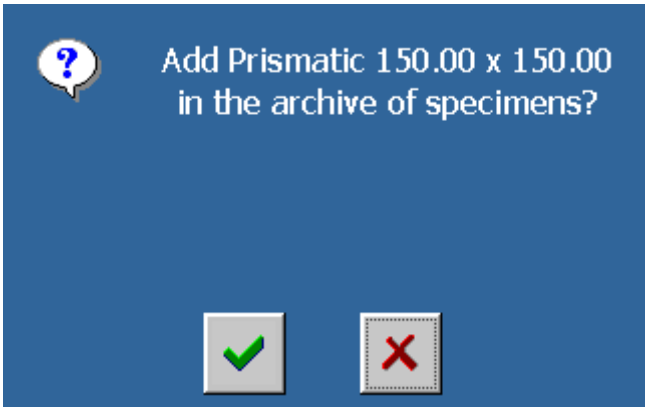
Parameter	Values
Width	➢ Width of the specimen.
Height	➢ Height of the specimen.
Upper rollers	➢ Distance between the upper rollers of the flexure frame. Insert 0 if there in one single roller.
Lower rollers	➢ Distance between the lower rollers of the flexural frame

The area field will be recalculated after exiting from the panel.

Specimens file visualization:

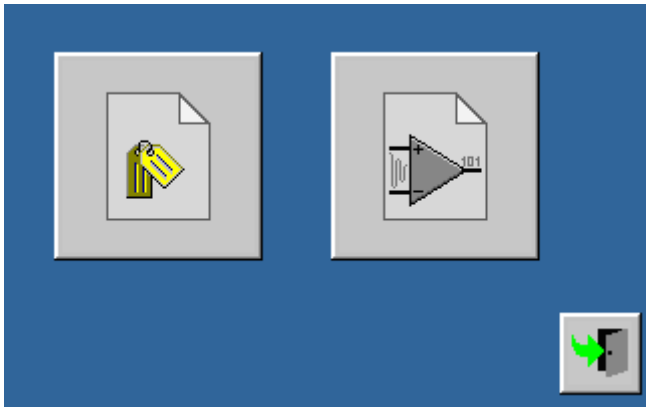


Add to the specimens file:

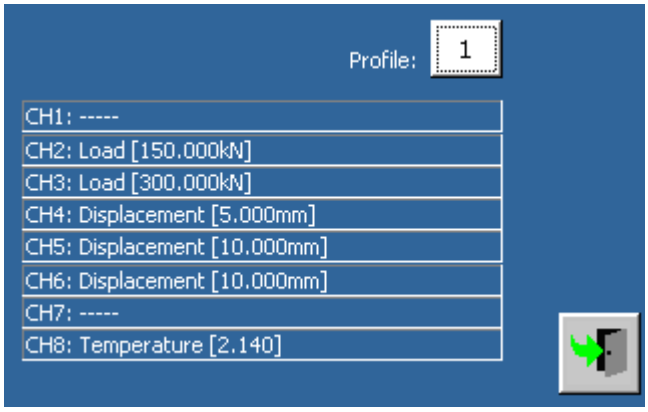


❑ **Commands**

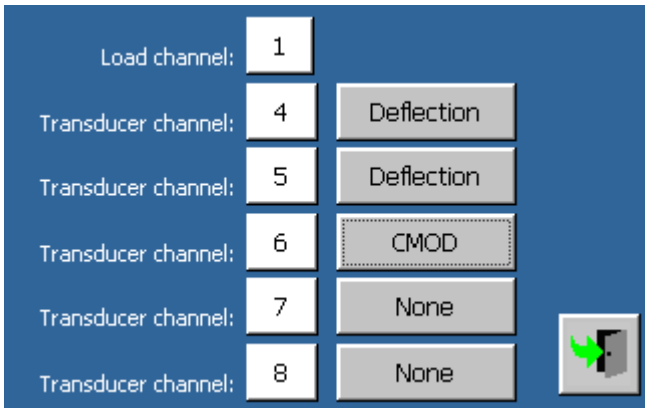
1. To associate the machine functions with the available transducers



2. Profile Configuration



3. Analog Channel Configuration

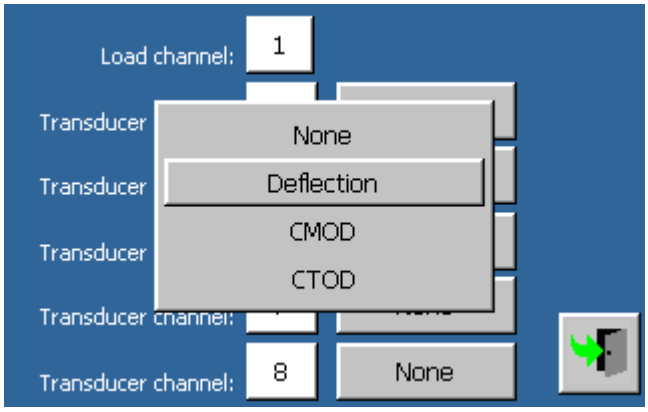


❑ **Parameters**

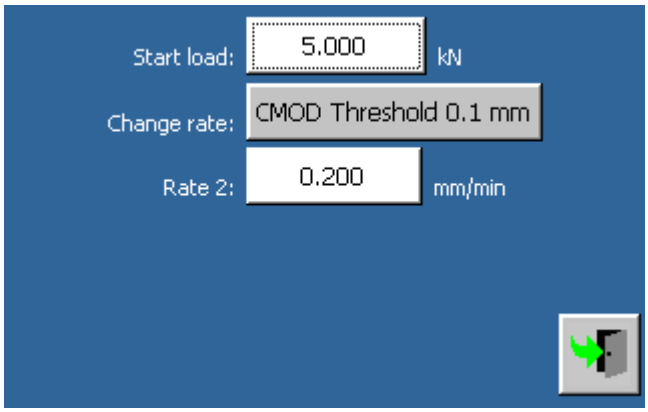
Parameter	Value
Load channel	➢ 1-8 It shows the pressure transducer channel the operator would like to use
Transducer channel	➢ 1-8 It shows the displacement transducers channels the operator would like to use (1).

(1) These could be absent or assembled in order to measure the deflexion or the opening of a crack (CMOD at the base of the crack, CTOD at the top). The means of all transducers of the same type will be calculated

automatically. At least one displacement transducer is required in order to carry out a test with control in displacement.

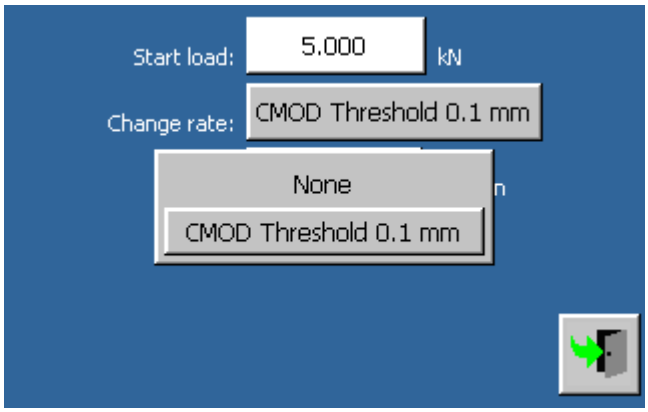


to activate the panel with the advanced setting parameters.



❑ Parameters

Parameter	Values
Start load	➢ It checks the specimen breakage only after going over this load threshold, in order to avoid interruptions caused by oscillations.
Change rate	➢ Setup of the threshold after which the test execution gradient varies
Rate 2	➢ New gradient to be applied.



❑ Commands

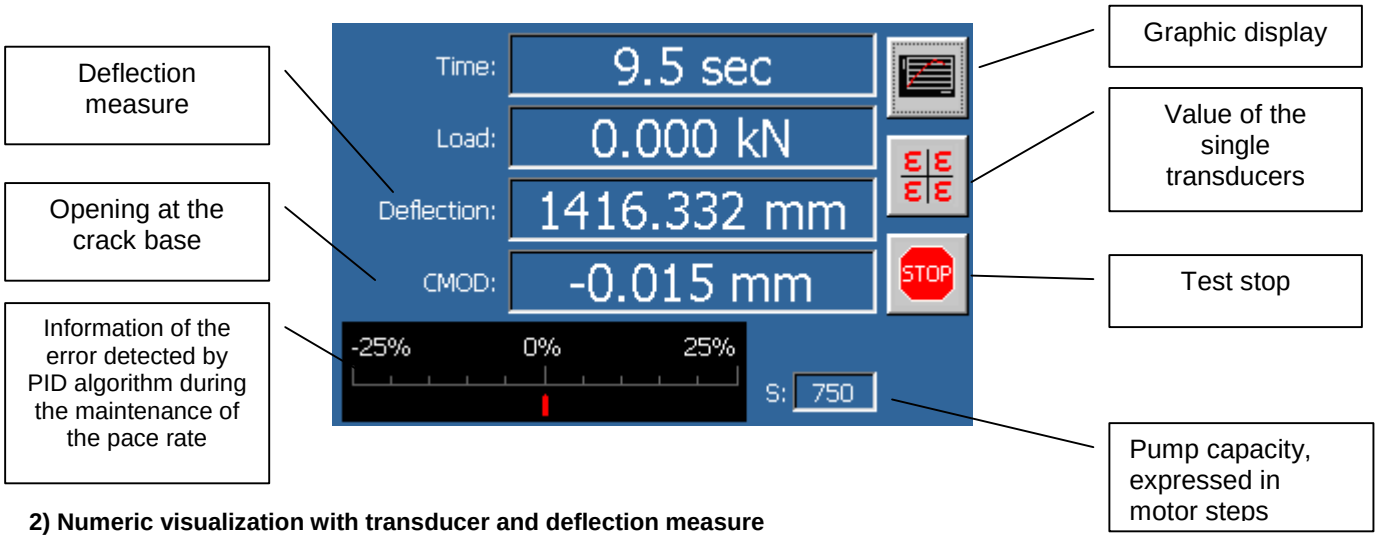
1. to start the test execution with the set parameters.

2. to close the test execution screen.

❑ Test execution

During the test execution, the progress can be visualized through different screens:

1) Numeric visualization with deflection and CMOD

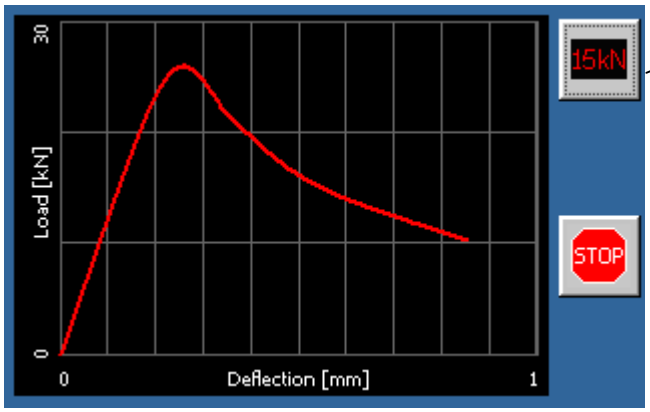


2) Numeric visualization with transducer and deflection measure

3) Numeric visualization with transducer and CMOD measure

4) Numeric visualization with single transducers' values

5) Graphic visualization load/deformation.



❑ **Test stop**

Touch

or press **to stop the test execution.**

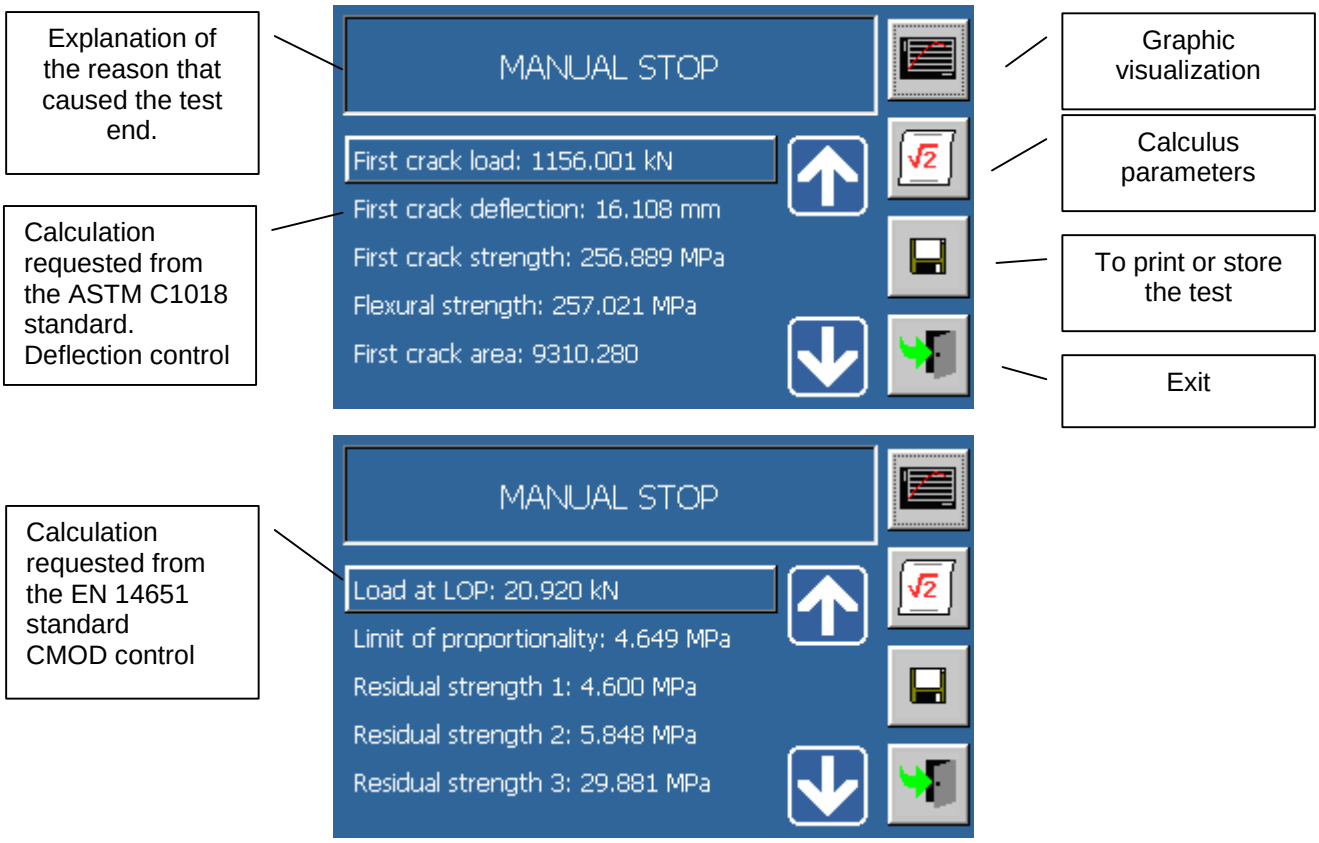
To stop the machine during a critical phase, press the red emergency button placed above the control unit.

❑ **Test results**

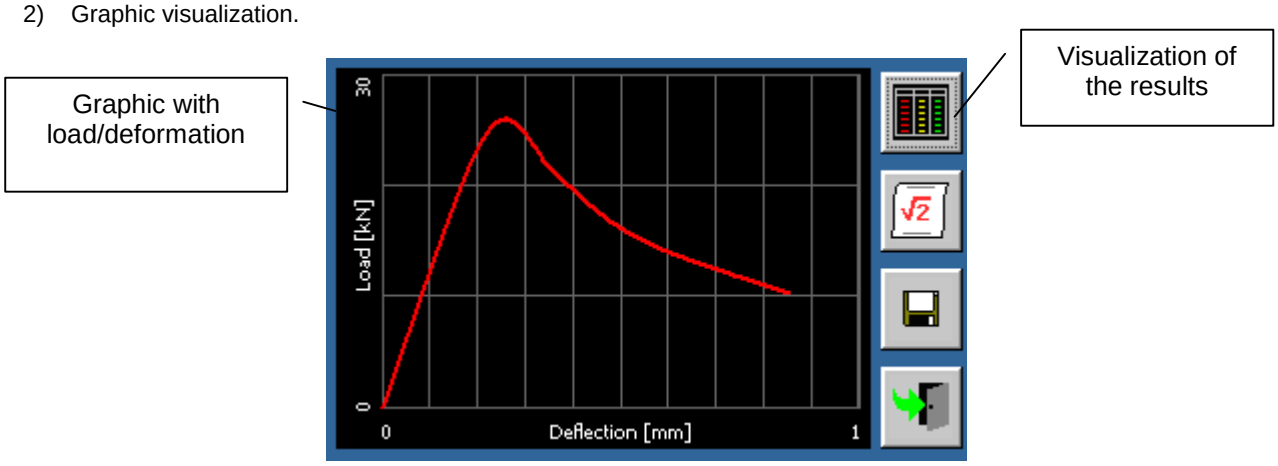
When the test ends, it is possible to visualize the test results in two different screens:

1) Numeric visualization.

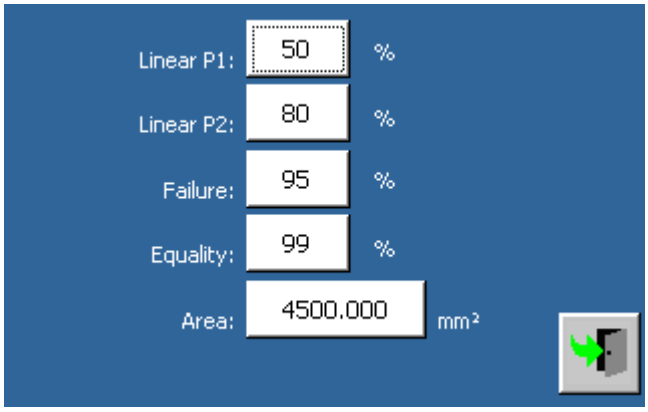
	WARNING IMPORTANT	Besides the visualization of the test results, the screen also shows the reason why the test has been stopped (specimen breaking, alarm, manual interruption). According to the control selected (deflection gradient control or CMOD gradient) , the calculations at the end of the test refer to different standards.



2) Graphic visualization.



❑ Setting up the calculation parameters



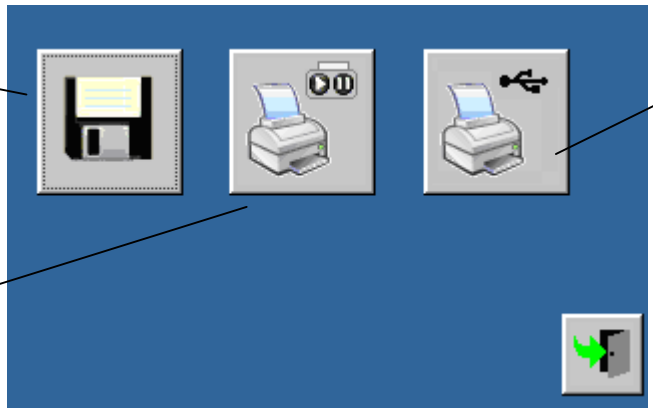
To recalculate the values and go back to the test results screen

❑ Parameters

Parameter	Values
P1 linear	➢ This is the first point on the graphic where a linear behaviour of the curve is determined (percentage compared to the first decrease of the specimen).
P2 linear	➢ Together with P1, defines a part of the load/deformation curve with linear behaviour.
Failure	➢ Percentage of the max. load; it is the threshold to determine the first decrease.
Equality	➢ Used to recognise tangents with same inclination.
Area	➢ The area could be changed if the specimen has failings. It affects the calculation of the resistance.

❑ Test results printing and storage.

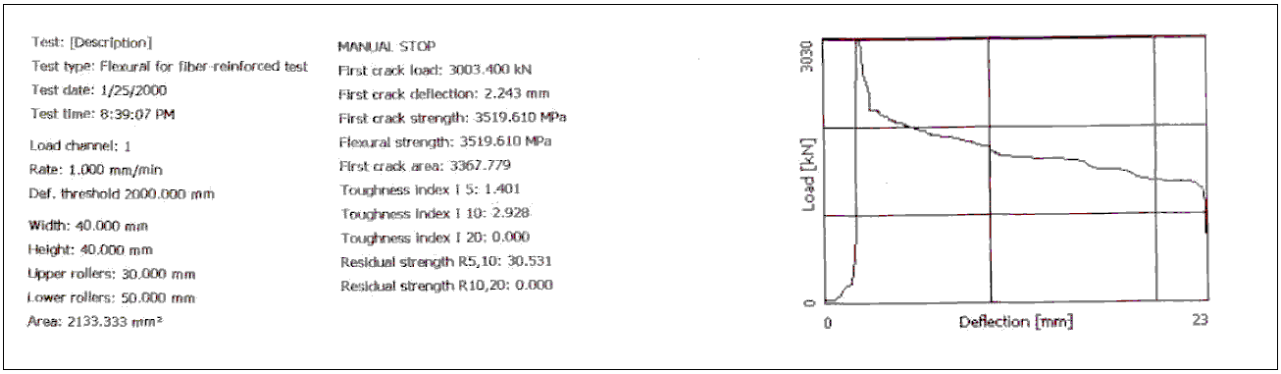
To save the test results on SD-Card or Pen-Drive



To print the results with a printer connected to the unit by USB port (PCL compatible)

To print the results with the thermic printer.

When the test data are sent to the printer on thermic-paper, a report is produced such as the one shown in the below picture:

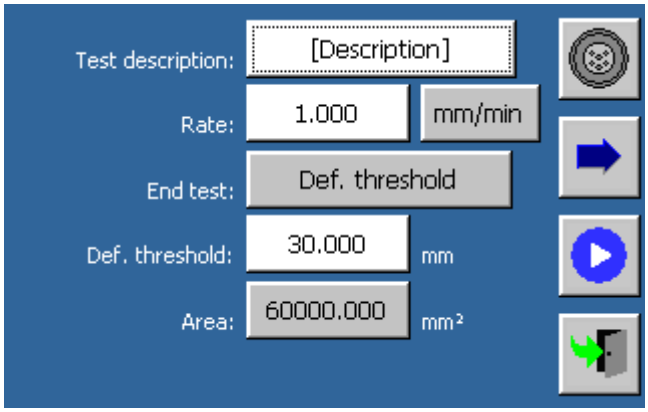


6.09 ENERGY ABSORPTION TEST ON SPRAYED CONCRETE

ENERGY ABSORPTION TEST ON SPRAYED CONCRETE SPECIMENS

WARNING	Energy absorption test can be performed only if the appropriate licence has been purchased.

Test configuration



Parameters

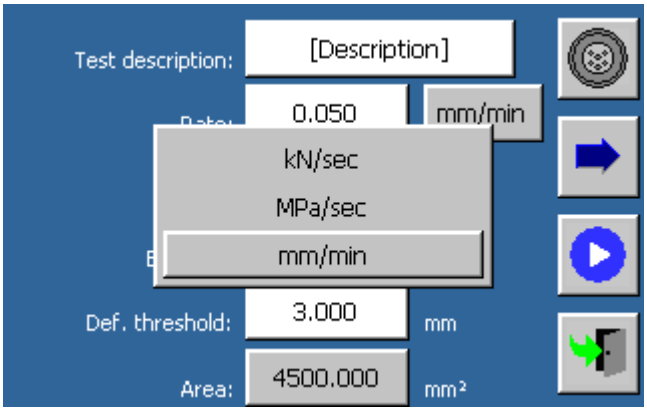
1) Test description

Alphanumeric value: it is a description saved along with test results.

2) Gradient

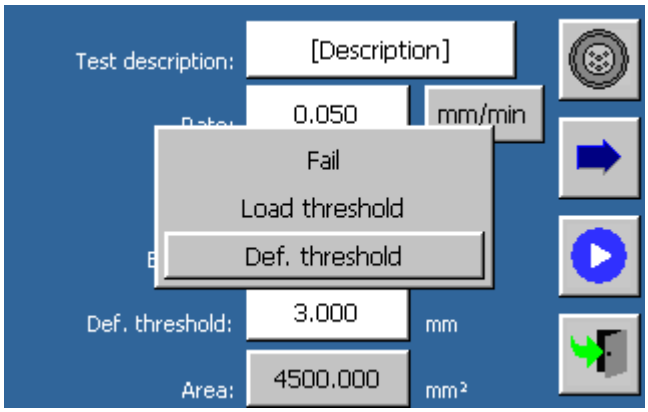
The gradient of the test execution could be one of the following:

Gradient	Metric unit system	U.S. unit system	Notes
Load	kN/sec	lb/sec	
Pressure	Mpa/sec	Psi/sec	
Displacement	mm/min	in/min	A displacement transducer is required

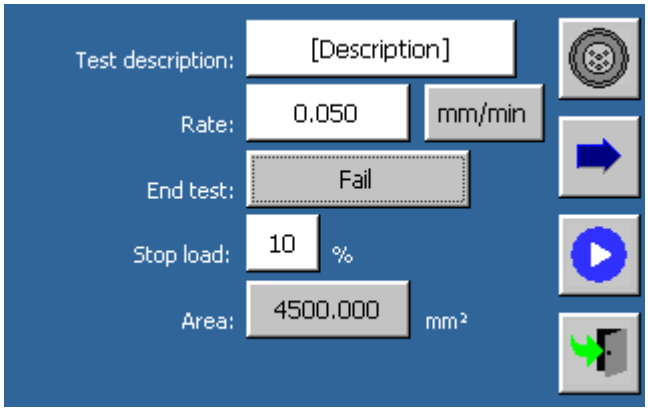


3) Test end conditions

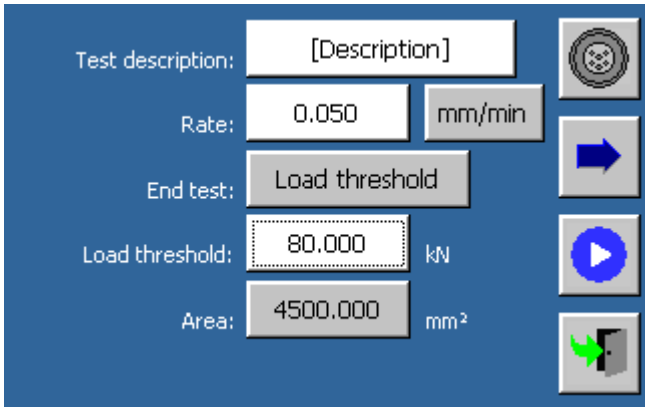
The test end conditions are as follows:



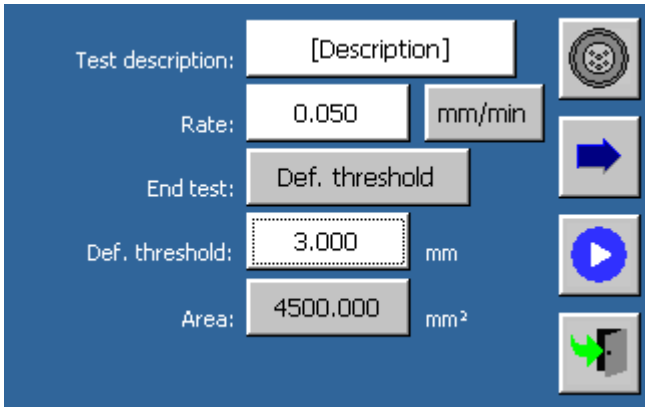
1. Breakage:
   The specimen breakage is detected in correspondence to a load downfall (expressed as percentage of loss compared with the maximum value detected).



2. Threshold achievement:
   The test stops when the load threshold is reached.

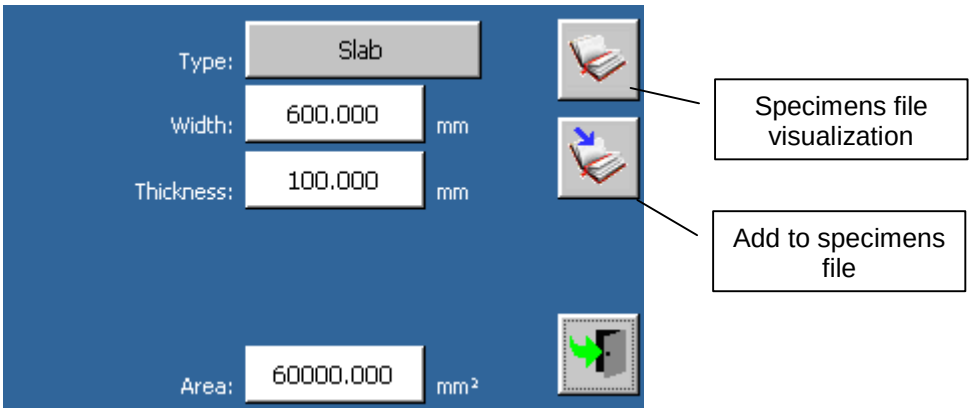


3. Strain threshold achievement
   The test stops when the strain threshold is reached.



4) Area

Specimen contact area, used for the load-pressure conversion.
A new control panel will be displayed when this button is selected:

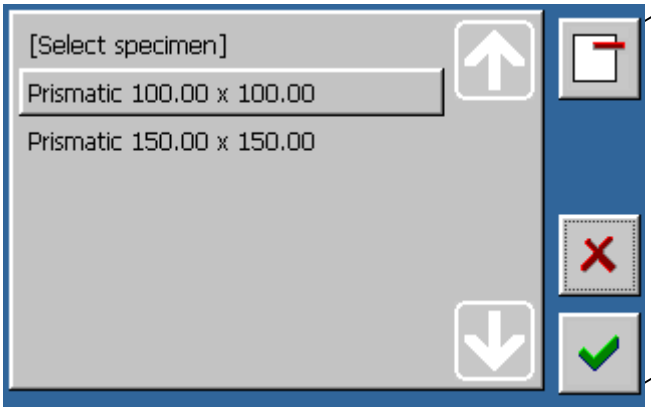


Parameters

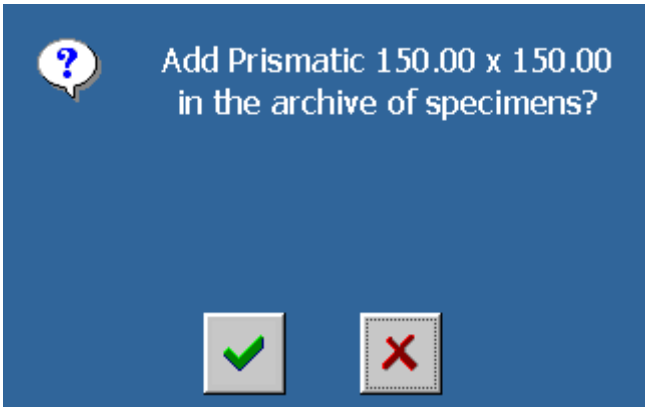
Parameter	Values
Width	➢ Slab width
Thickness	➢ Slab thickness

The value of the Area will be automatically calculated when the operator exits the screen.

8. Specimen file display:

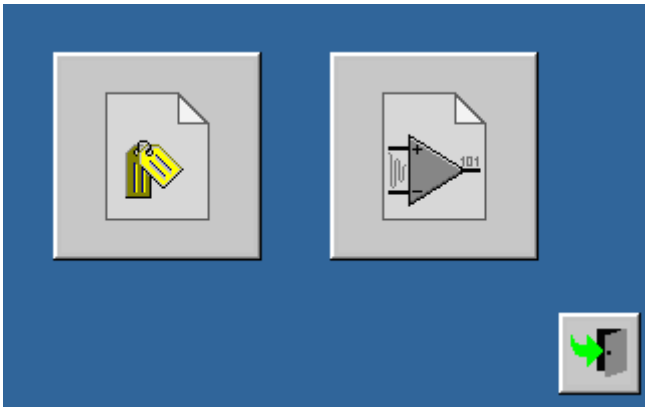


9. Add to the specimens file:

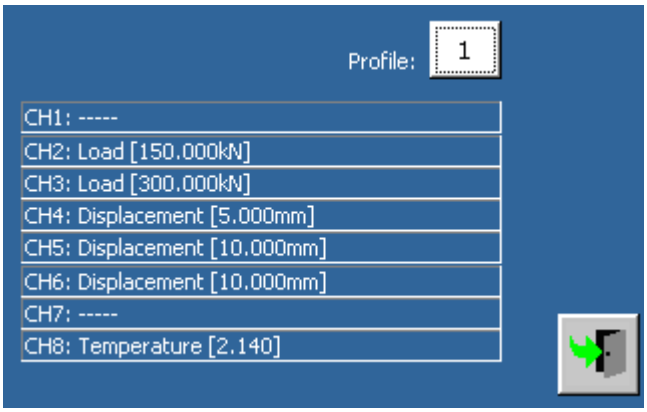


Commands

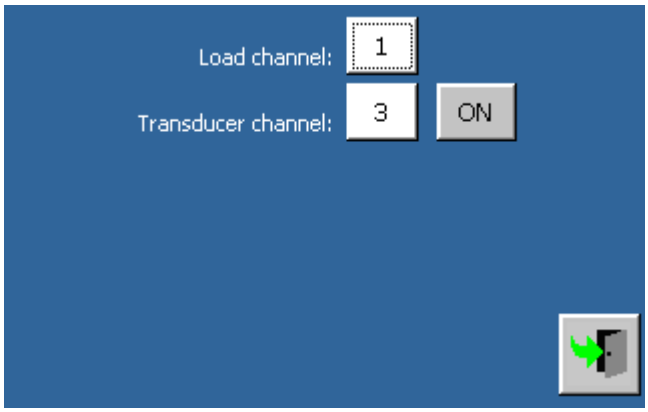
4. to associate the machine functions with the available transducers.



5. Profiles configuration



6. Analog channels configuration

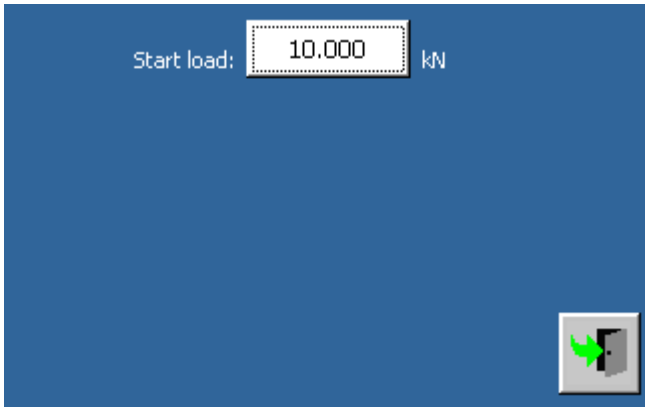


Parameters

Parameter	Values
Load channel	➢ 1-8 it shows the pressure transducer channel the operator would like to use
Transducer channel	➢ 1-8 it shows the displacement transducer channel the operator would like to use.

to activate the panel with the advanced setting parameters

7.



Parameters

Parameter	Values
Start load	➢ It checks the specimen breakage only after going over this load threshold, in order to avoid interruptions caused by oscillations.

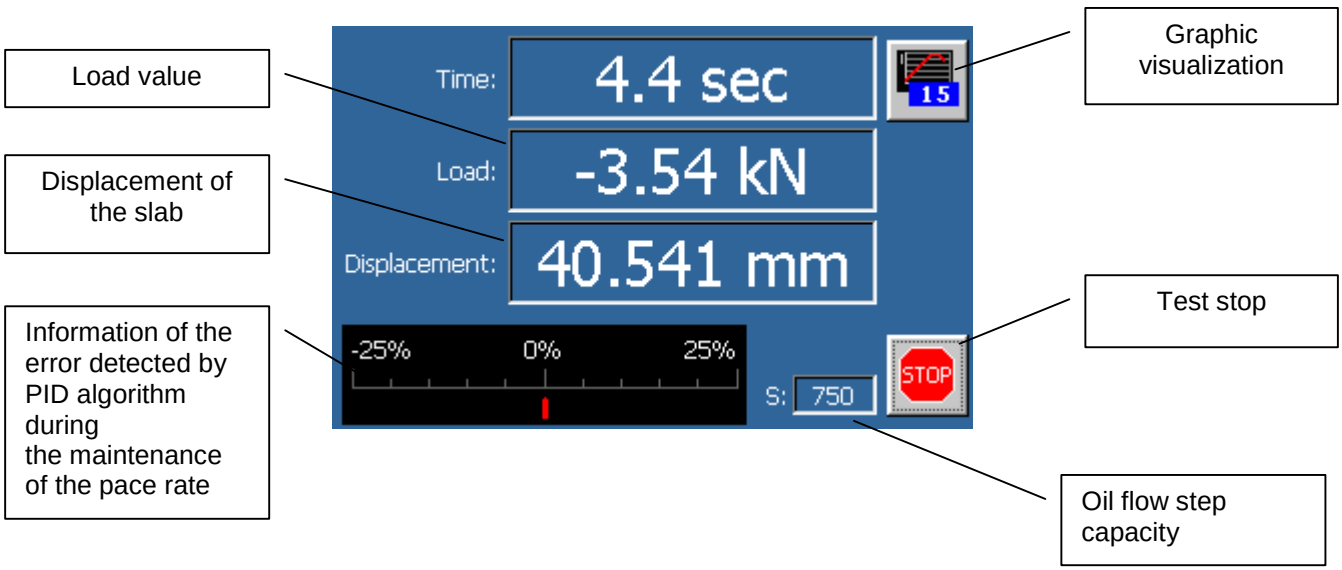
Commands

1. to start the test execution with the set parameters.
2. to close the test execution screen.

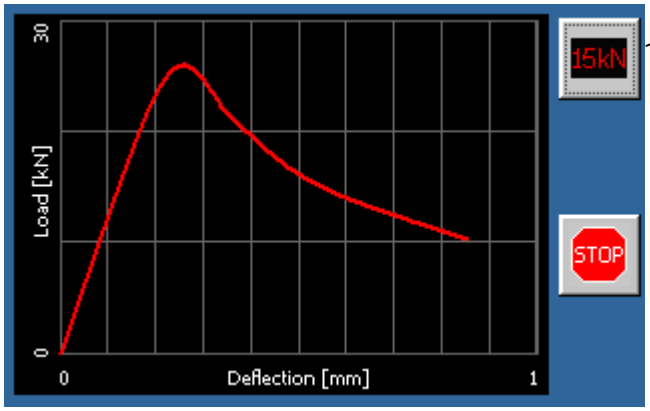
Test execution

During the test execution, the progress can be visualized by means of different screens:

1) Numeric visualization with time, load, and displacement



2) Load/deflection graphic visualization



Numeric visualization

❑ **Test stop**

Touch

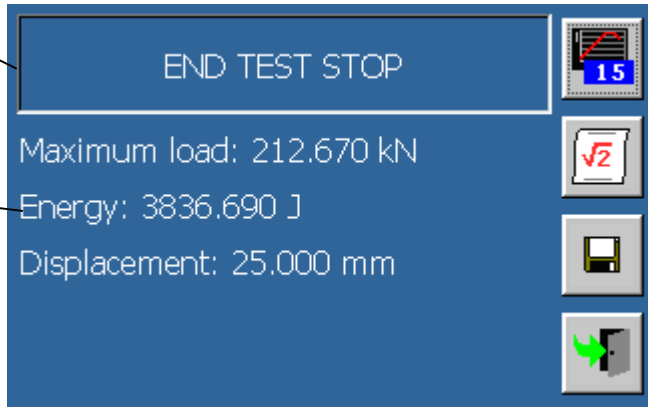
or press **to stop the test execution.**

To stop the machine during a critical phase, press the red emergency button placed above the control unit.

Test results
At the end of the test, the results could be displayed through two different screens:

1) Numeric visualization

IMPORTANT! The test results are displayed along with the explanation of the reason that caused the test end. (i.e. specimen breakage, alarm, manual interruption…).



Explanation of the reason that caused the test end

Absorbed energy

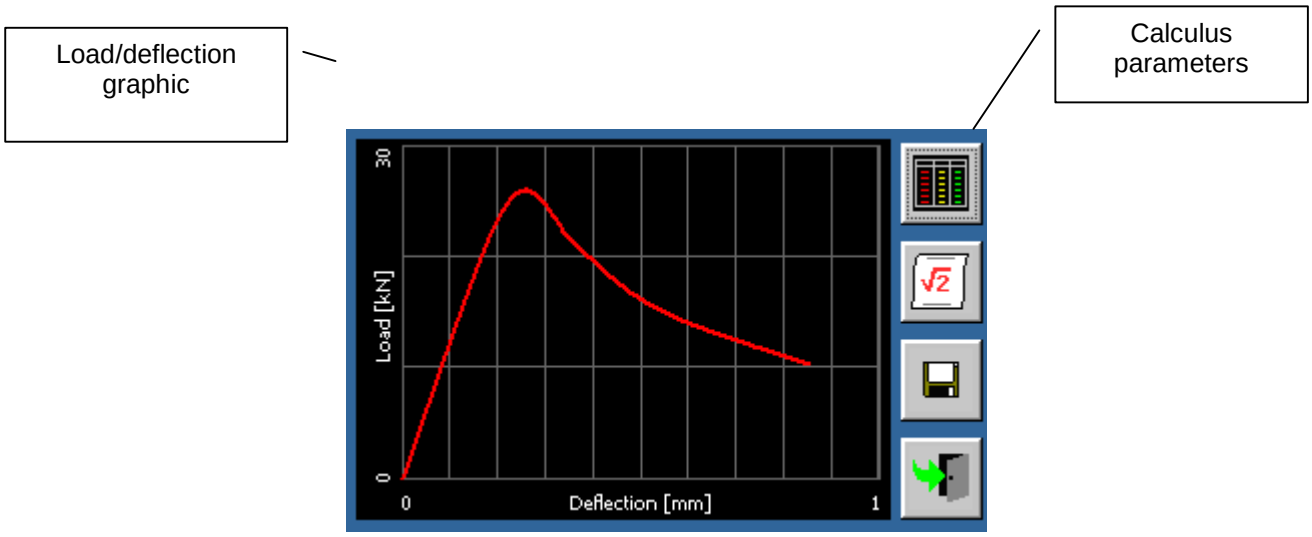
Graphic visualization

Calculus parameters

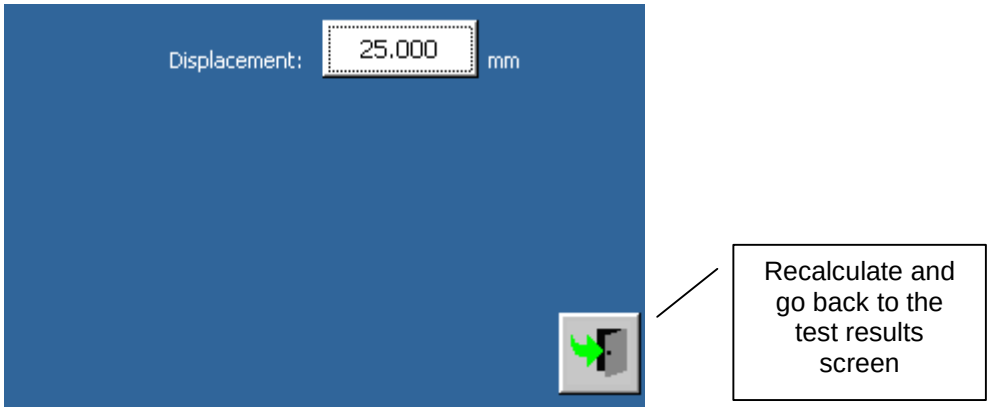
Print or store the test

Exit

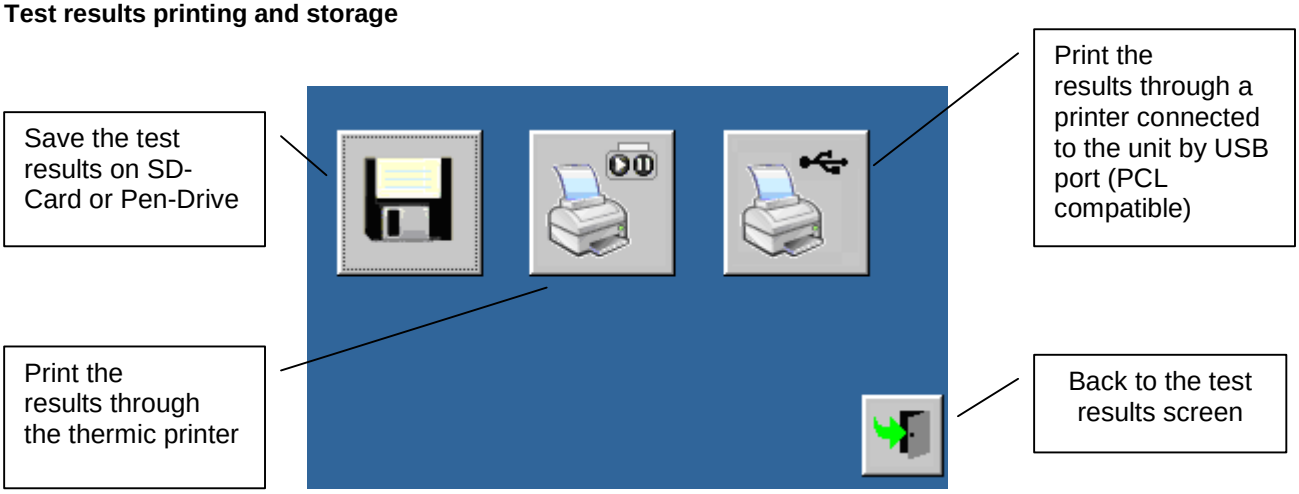
2) Graphic visualization



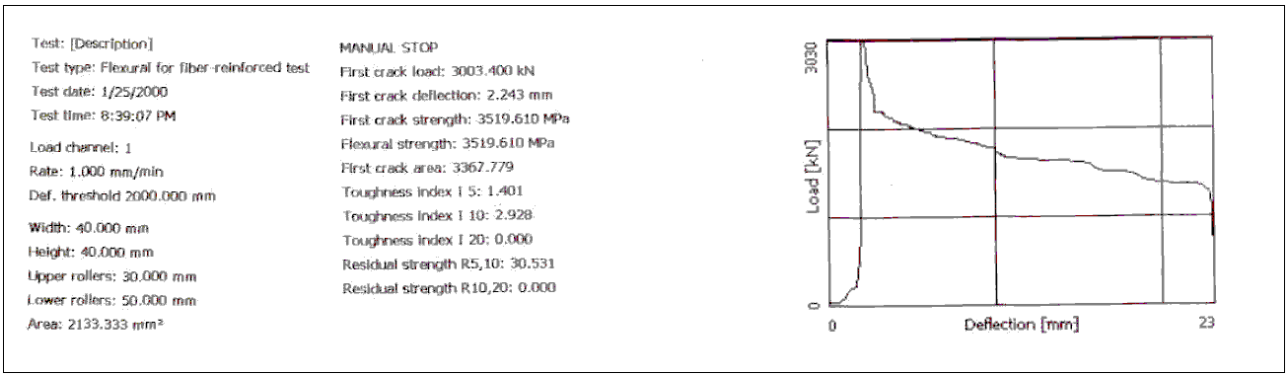
Setting of the calculating parameters:



Test results printing and storage



The following report will be issued when the test data are sent to the thermic printer:



6.10 TENSILE TEST

TENSILE TEST

WARNING	Tensile test can be executed only by purchasing the relevant licence.

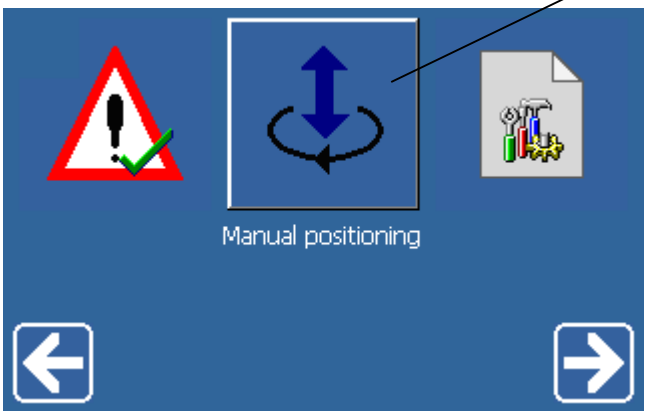
❑ **Specimen positioning**

Pull down the lower knobs and position the specimen. Turn up and lock the upper knobs. Put the hydraulic selector on compression and press the pace rate in order to lift the lower grip until the specimen is inserted in the upper grip. Unscrew the upper knobs, then pull them down completely in order to take the specimen.

WARNING	When the upper knobs are lowered, unscrew them with 3 turns at least in such a way that a clearance is obtained between the knobs and the upper grip.

Close the protection device of the upper grip, then re-position the hydraulic selector on tensile.

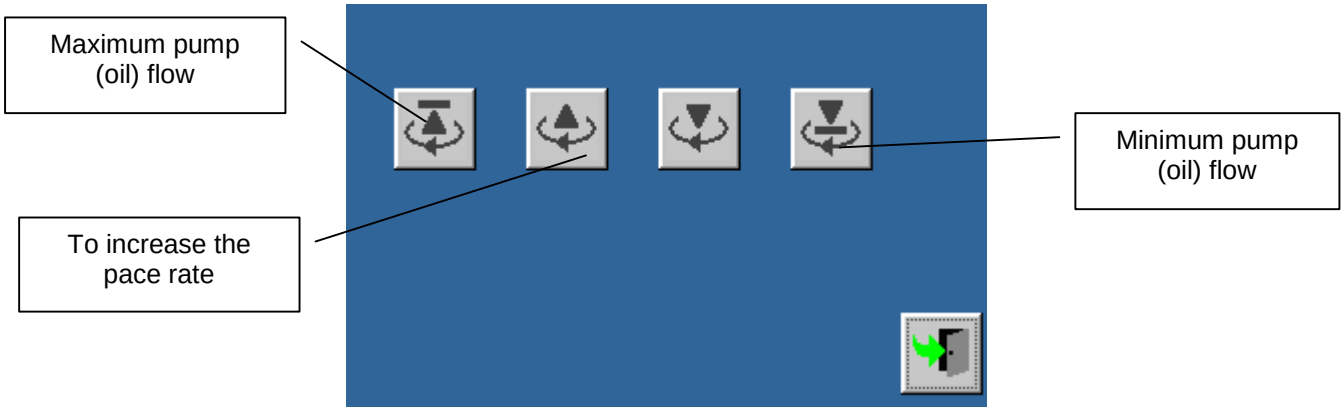
Switch the engine on from the main menu:



Press here to switch on the engine.

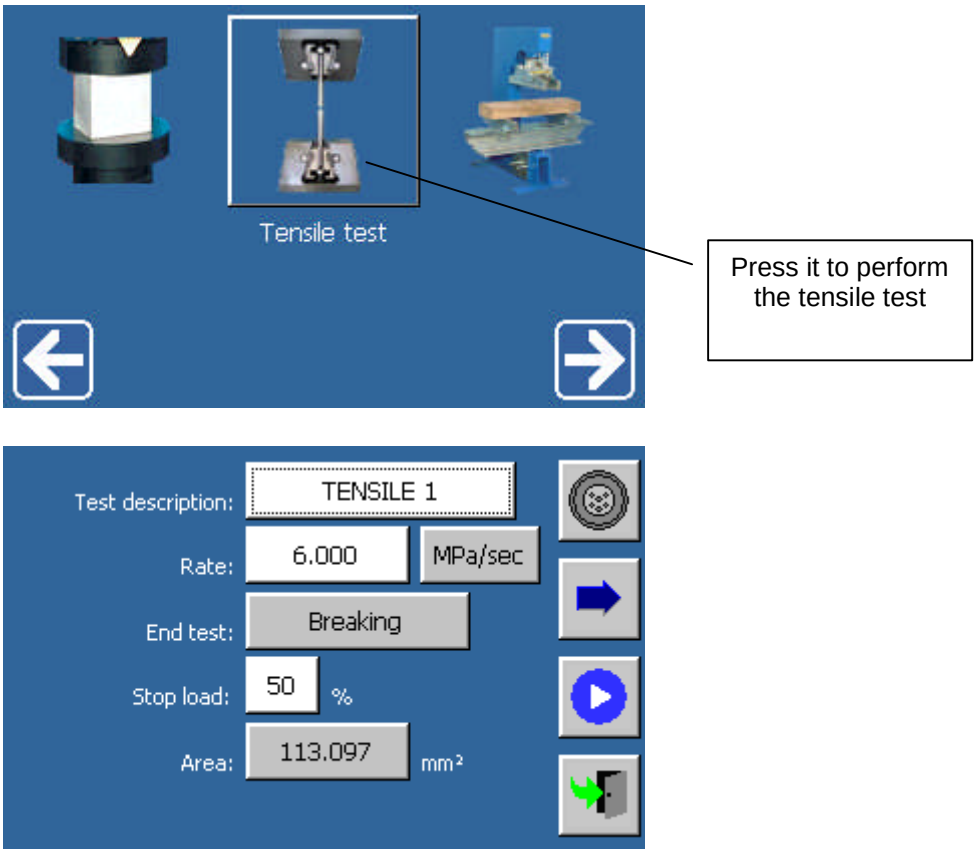
Only for the servo-controlled model:

To decrease the pace rate



The rising or descending movement is always selected through the hydraulic selector.

❑ **Test configuration**

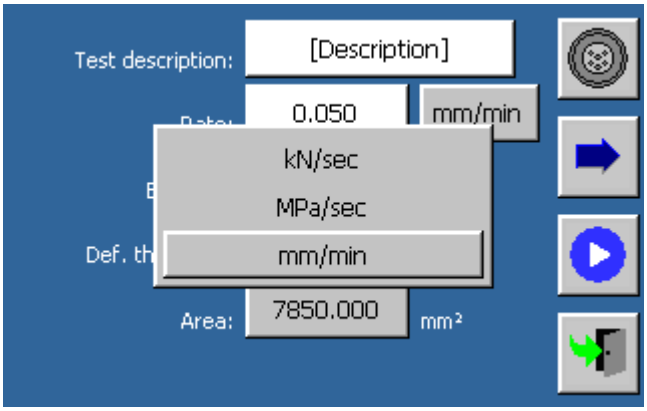


❑ **Parameters**

5) Test description
Alphanumeric value; it is a description saved along with test results.

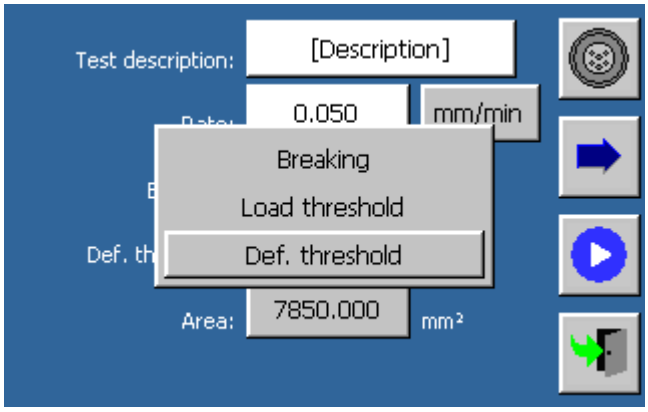
6) Gradient
The gradient of the test execution could be one of the following types:

Gradient	Unit of Measurement (metric system)	Unit of Measurement (U.S.)	Notes
Load	kN/sec	lb/sec	
Pressure	Mpa/sec	Psi/sec	
Displacement	mm/min	in/min	A displacement transducer is required.



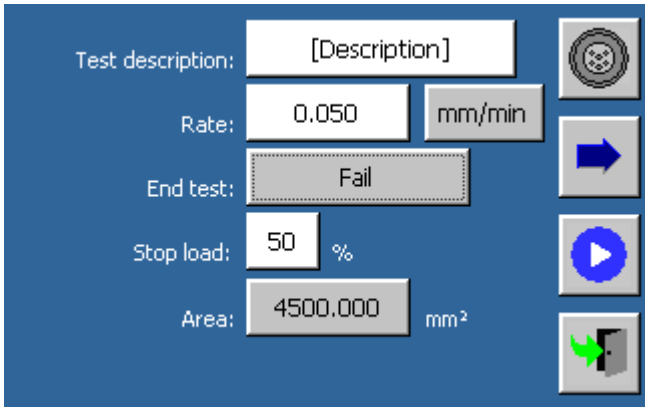
7) Test end conditions

The test end conditions are as follows:

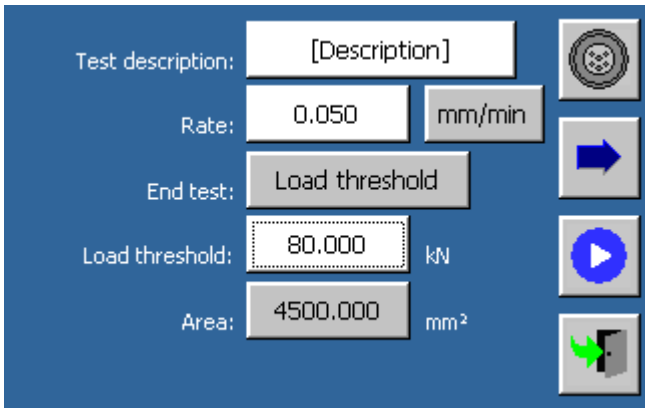


4. Breaking

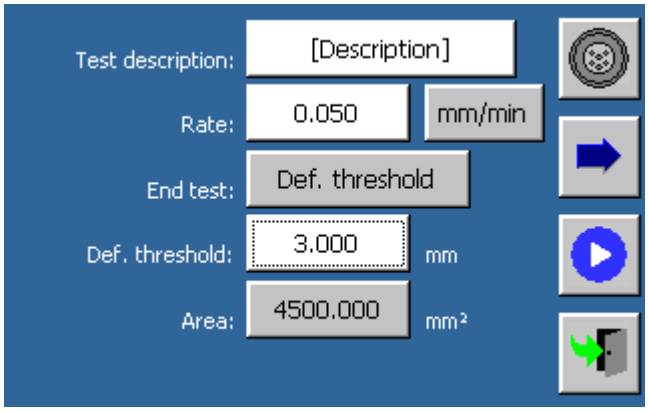
The specimen break is detected in correspondence to a load downfall (expressed as percentage of loss compared with the maximum detected value).



5. Load threshold achievement:
The test stops when the load threshold has been reached

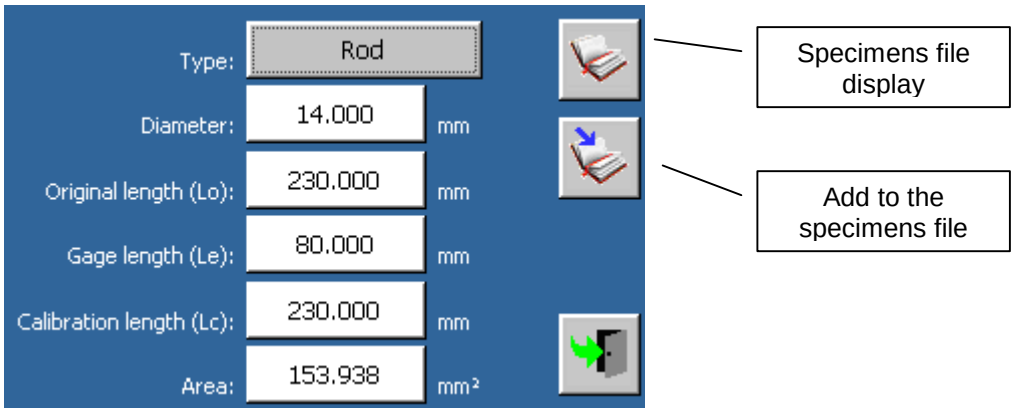


6. Deformation threshold achievement:
The test stops when the deformation threshold has been reached.



4) Area

Area of the initial cross section of the specimen for the load-pressure conversion. When selected, a new screen will be displayed:

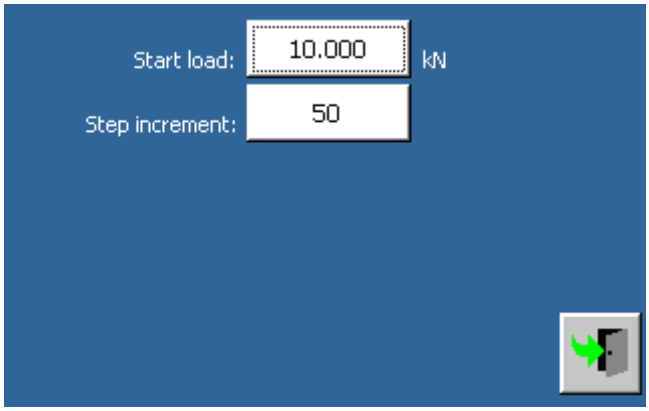


❑ **Parameters**

Parameter	Values
Type	➢ Type of specimen
Diameter	➢ Diameter of the specimen cross section
Original length (Lo)	➢ Initial length between the references
Gage length (Le)	➢ Extensometer base length
Calibration length (Lc)	➢ Length of the calibrated part.
Area	➢ Area of the specimen initial cross section (automatically calculated from the diameter or entered manually by the operator).

❑ **Commands**

1. to activate the screen with the advanced setting parameters.

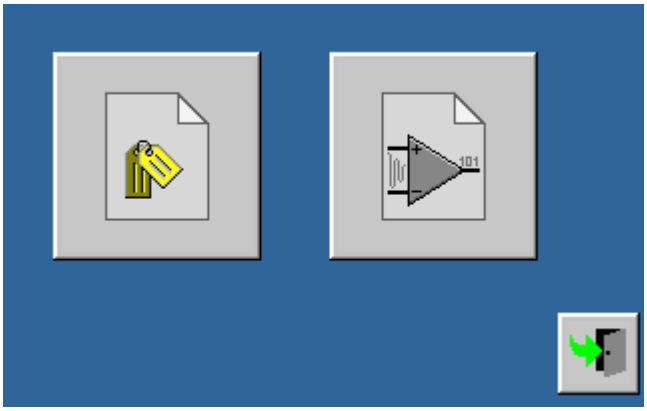


❑ **Parameters**

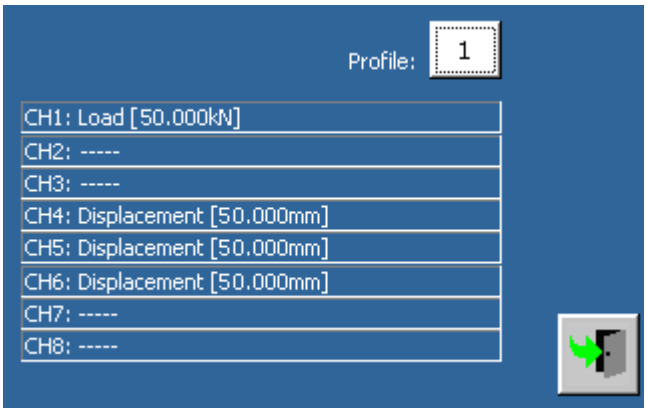
Parameter	Values
Start load	➢ It checks the specimen break only after the load threshold has been overcome, in order to avoid interruptions caused by oscillations.
Step increment	➢ Increase of the pace rate given by the apposite button. This function can be activated only during the elongation phase

❑ **Commands**

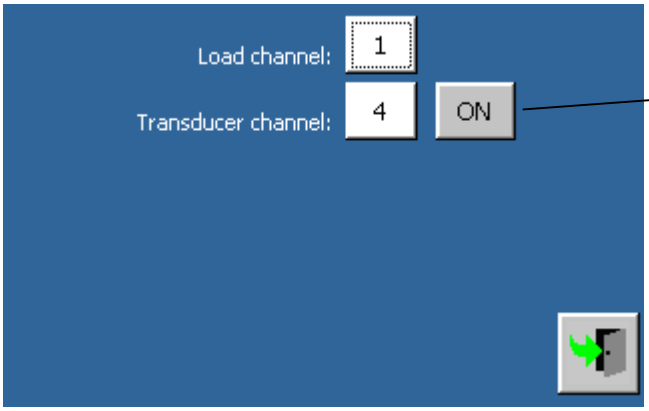
1. to associate the machine functions with the available transducers



2. Profile configuration:



3. Analog channels calibration:



Activation of the deformation measurement

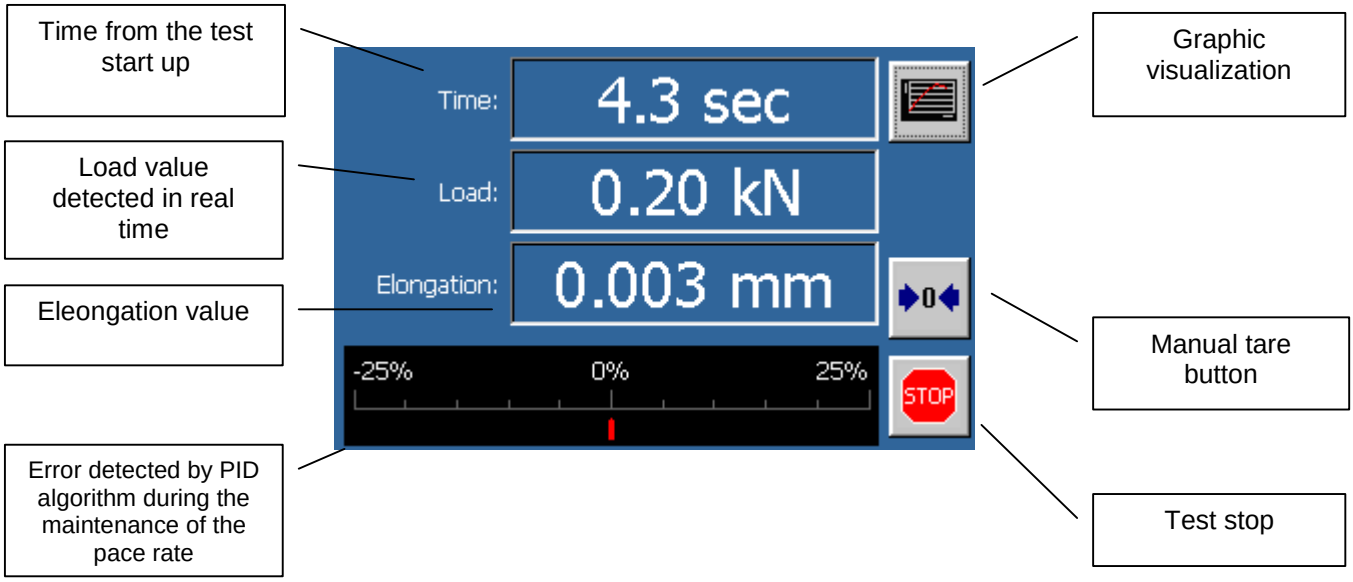
4. to activate the test execution with the set parameters.

5. to close the test execution screen.

❑ Test execution

During the test execution, the progress can be visualized by means of two screens:

➢ Numeric visualization

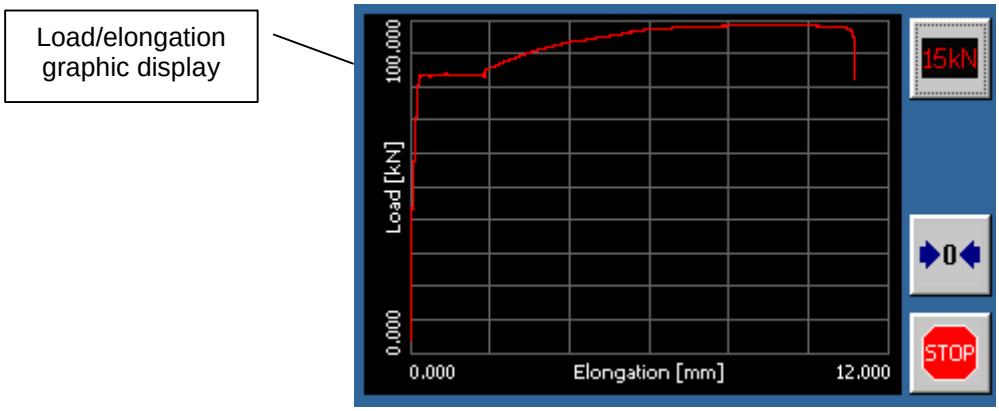


If necessary, press to make the manual tare.

❑ Commands

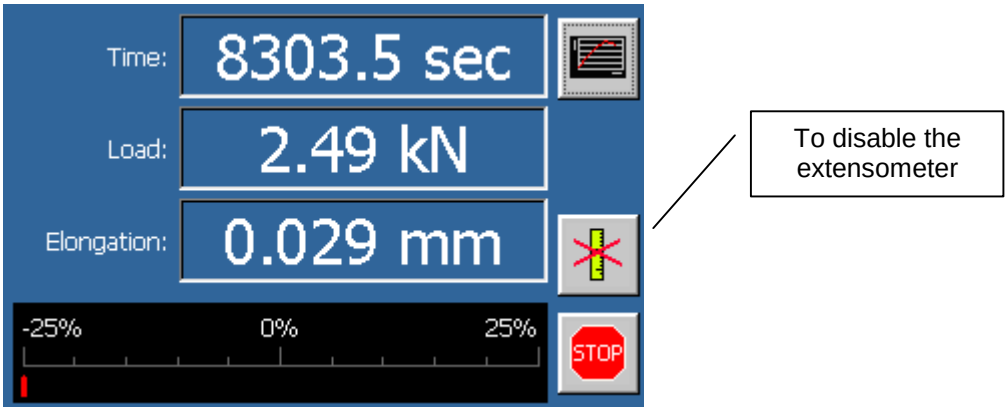
1. to switch to the graphic visualization (from the numeric one)
2. to switch to the numeric visualization (from the graphic one).
3. to stop the test execution.

- Graphic visualization

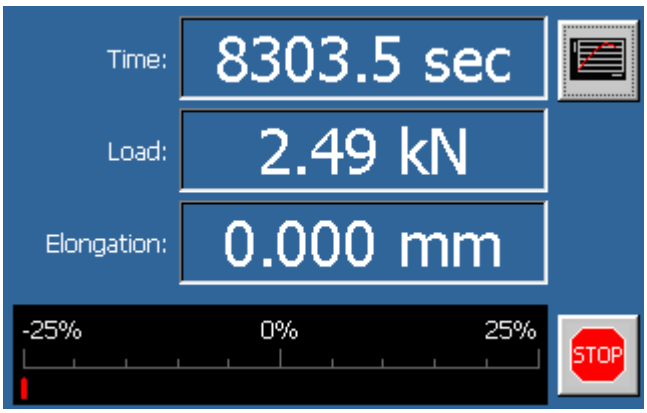


❑ Extensometer disabled

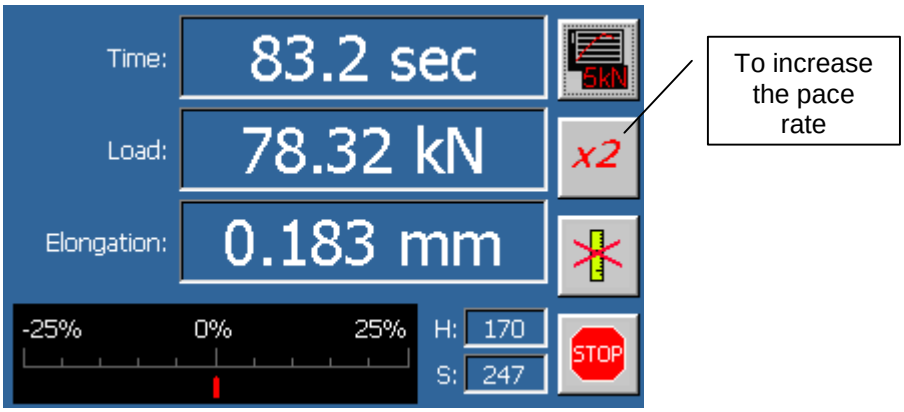
If is required to remove the extensometer during the test execution and before the overcome of the elongation maximum threshold, press the appropriate button:



The elongation will remain fixed at 0, and the extensometer can be removed without recording values not in compliance with the ones requested by the Standard.



Pace rate manual command



When using a servo-controlled testing machine, this function allows to increase the pace rate during the elongation phase in order to avoid delays and waste of time..

- **Test stop**

Touch

or press **to stop the test execution.**

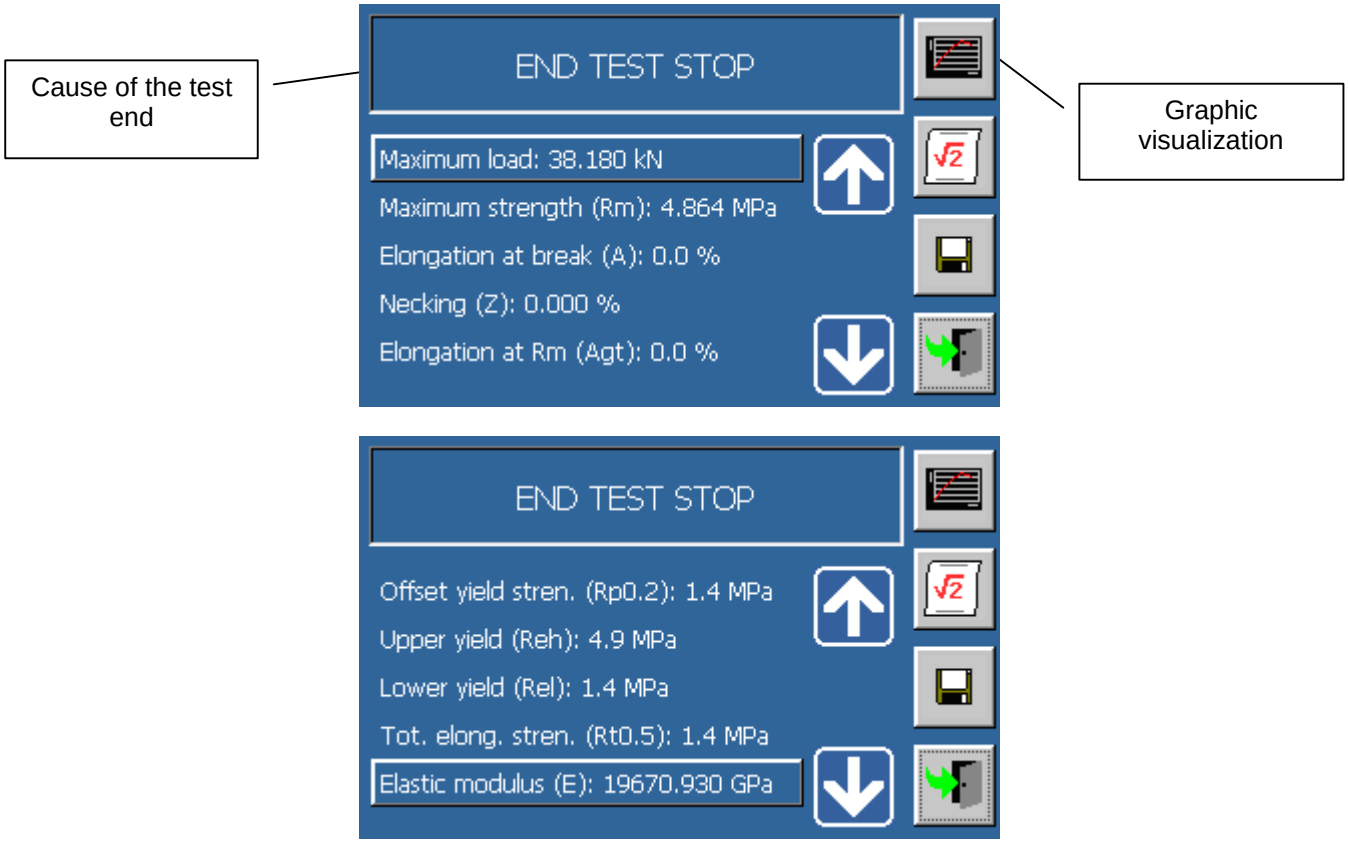
To stop the machine during a critical phase, press the red emergency button placed above the control unit.

❑ Test results

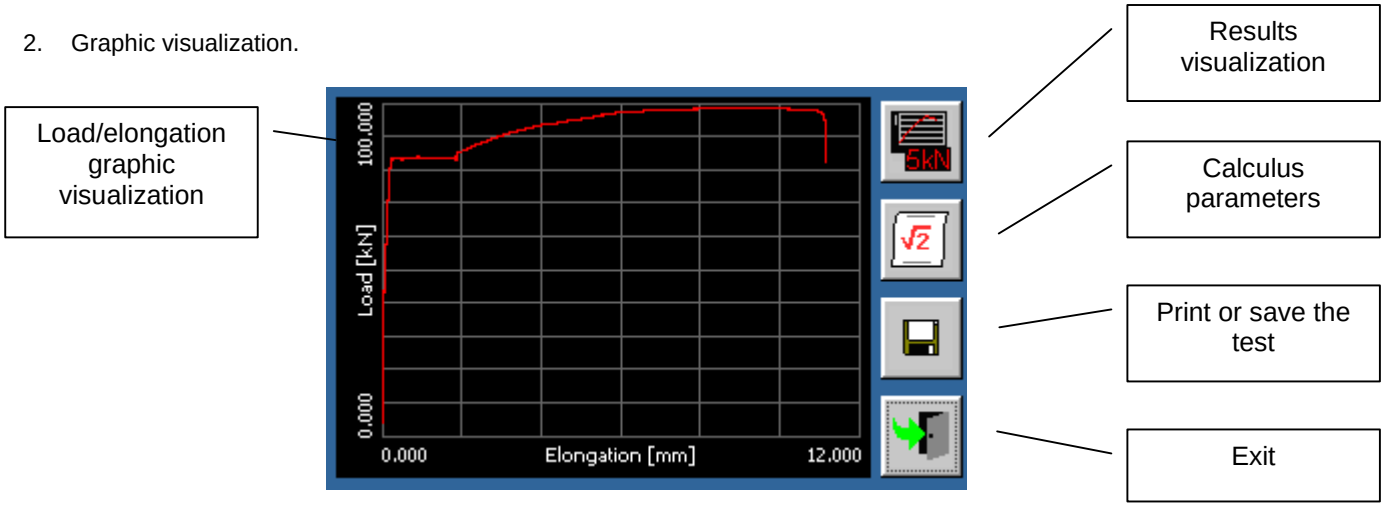
At the end of the test execution, the results can be visualized by means of two screens:

1. Numeric visualization.

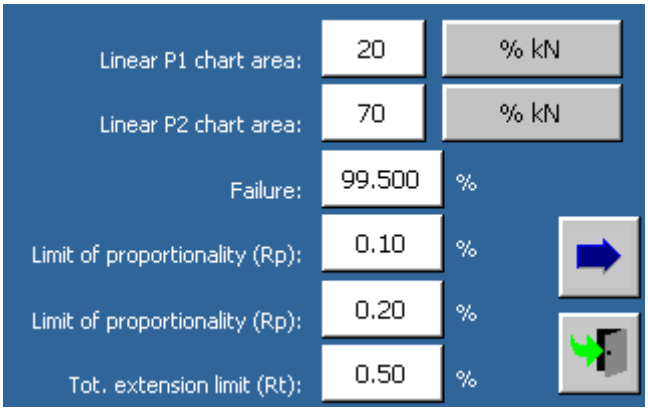
IMPORTANT! The test results are visualized along with the cause that has led to the test end (specimen breaking, alarm, manual interruption, remote interruption).



2. Graphic visualization.



❑ Configuration of the calculus parameters



Parameters next page

To recalculate the values and go back to the test results

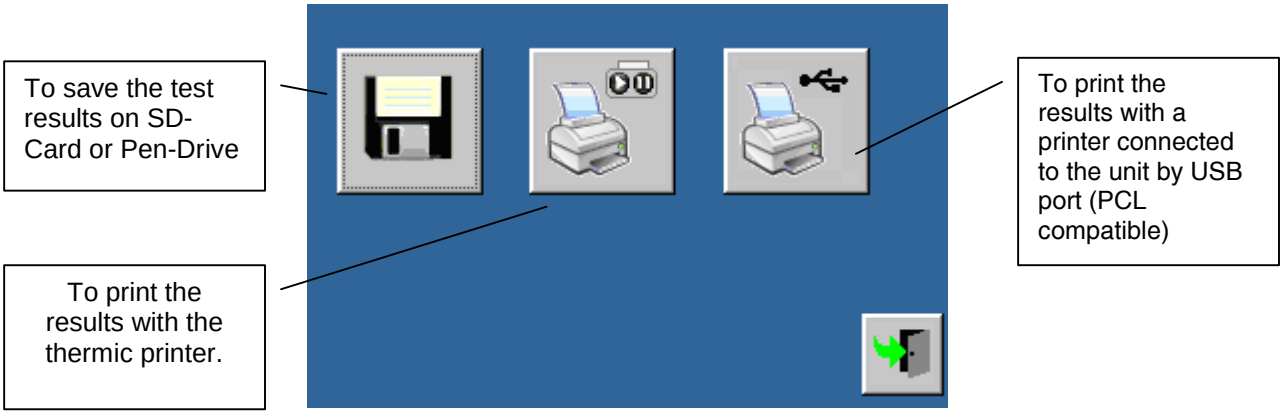
Parameters former page

To recalculate the values and go back to the test

❑ Parameters

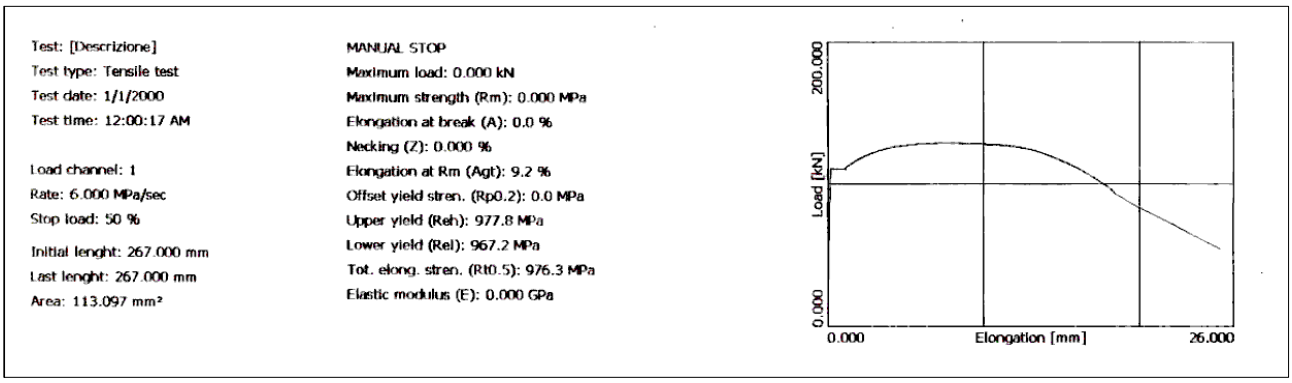
Parameters	Values
P1 linear chart area	➢ It determines the first point of the graphic where a linear behaviour of the curve is obtained (expressed as percentage in respect to the maximum load)
P2 linear chart area	➢ Together with P1, it defines an area of the load/elongation curve having a linear behaviour.
Failure	➢ It is the threshold to detect the first failure, expressed as percentage of the maximum load.
Limit o f proportionality	➢ Prescribed percentage plastic elongation percentage established, used for Rp calculus
Total extension limit	➢ Prescribed percentage total extension, used for Rt calculus.
Original length (Lo)	➢ Original length between the reference points (to be used for the extension percentage calculus).
Last /final length (Lu)	➢ Length between the reference points after the specimen break (to be used for the extension percentage calculus).
Last/final area (Su)	➢ Area of the final cross section (to be used for the necking calculus).

- **Test results printing and storage.**



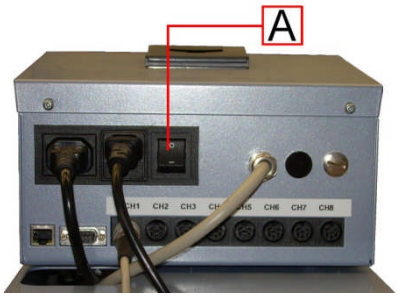
1. to close the screen of the test results printing and storage.

When the test data are sent to the printer on thermic-paper, a report is produced such as the one shown in the below picture:



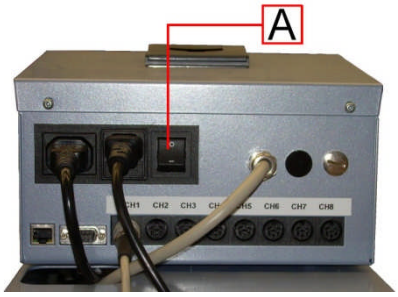
6.11 NORMAL STOP

When the tests are over, turn off the machine simply by turning the switch **"A"** to "0".



6.12 EMERGENCY STOP

In case of emergency turn off the machine simply by turning the switch **"A"** to "0".



6.2 RESTART OF THE TEST AFTER AN EMERGENCY STOP

WARNING DANGER	Before restarting the equipment, check and remove the causes that had led to the emergency stop.

Position the general switch **"A"** on "I" to start the machine.

6.14 TEST START UP

Before using the appliance regularly check it is working correctly by carrying out at least one complete empty cycle according to the previous instructions.
Should there be any problem consult the chapter "DIAGNOSTICS".
If the instructions in this manual do not provide the solution to the problem, contact Sales Assistance.

Chapter 7 MAINTENANCE

7.01 ORDINARY MAINTENANCE

	DANGER WARNING	Do not perform maintenance – interventions on the machine which have not been quoted and described in this instructions manual without first contacting the manufacturer. Periodically clean all machine parts and oil the unpainted parts in order to preserve the machine and its efficiency. Avoid the use of solvents which damage paint and parts in synthetic material.

7.02 EXTRAORDINARY MAINTENANCE

For information on the extraordinary maintenance it is essential to contact only the manufacturer.

	DANGER	The removal of the safety devices or any tampering of the machine could cause risks to the operator or to any other people.

The manufacturer assumes no liability for any damages to people, things or animals due to the tampering of the safety devices.

The load-reading unit has a termic motor safety switch. In case of intervention of such a device, to reset its working, follow the instructions given here below:

1. Turn off the appliance.
2. Insulate the appliance from the main supply disconnecting the main cable.
3. Open the digital unit (taking away the PVC cover) and pay attention to the inside cables connecting the components fixed on the cover with the main card,
4. Push the key on the termic switch marked by “R”.
5. Close again the digital unit, connect the main cable, turn on the appliance and check its proper working.
6. If the termic switch interrupted again the working of the motor, check the good working of the motor or get in touch with the after sale service.

In case of special maintenance operations (repairs, replacement of parts and any other operation not described in this manual) ask directly o the manufacturer.

7.03 AUTHORISED MAINTENANCE CENTRES

For information on the nearest authorised help centre it is essential to contact the manufacturer.

Chapter 8 GUIDE TO RECOGNISING DAMAGE AND ANOMALIES

This chapter presents and discusses all the simple problems which could occur during machine use. The appropriately qualified, professional personnel must carry out all the maintenance procedures, check and control, as well as all the repair operations on parts of the machine or the electrical system.
Contact Technical Sales Assistance for any other problem not listed on the previous table or should the malfunctioning persist after the intervention of the operator in accordance with the previously mentioned courses of action.

PROBLEM	POSSIBLE CAUSE	REMEDY
The machine does not start after pushing the general switch	No supply	Check if the plug is properly plugged in
		Check the correct operation of the main switch
	Failure to the electric system	Check if the wires and the connections of the electric circuit are interrupted.
		Contact the Technical Assistance Service

	WARNING	Contact the technical assistance service to solve problems that are not in the previous list or if the malfunction persists after operator assistance, act in accordance with the modalities shown in the table.

Chapter 9 ACCESSORIES

WARNING DANGER	Only original spare parts can be used. Use of unoriginal spare parts exempts the manufacturer from all responsibility. Procedures for substitution of spare parts will be provided by the manufacturer along with the part. For spare parts contact the manufacturer's Sales Service department.

C109-10 SOFTWARE UTM2 (Universal Testing Machine 2)
Developed for the managing and the remote control of the MATEST Testing machines from a PC .
License for COMPRESSION tests on concrete.

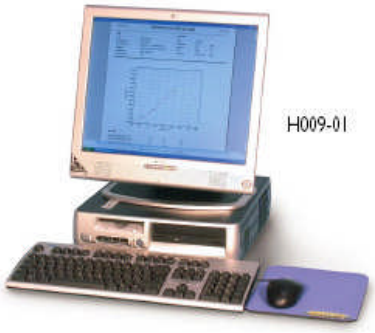
C109-11 SOFTWARE UTM2 (Universal Testing Machine 2)
Developed for the managing and the remote control of the MATEST Testing machines from a PC.
License for FLEXURE tests on concrete.

C109-12 SOFTWARE UTM2 (Universal Testing Machine 2)
Developed for the managing and the remote control of the MATEST Testing machines from a PC.
License for TENSILE SPLITTING on cylinders and cubes.

C127 GRAPHIC PRINTER ON THERMO PAPER ON BOARD

C127-11 THERMO PAPER ROLL FOR C127 PRINTER
Pack of10 rolls.

H009-01 PERSONAL COMPUTER
Personal Computer complete of LCD 17" display, keyboard, mouse, connection cables.
The supply also including the installation of purchased Software.



H009-02 SOFTWARE FOR ON LINE TECHNICAL SUPPORT
It allows the technical support to the customer without physical intervention of an After Sale specialist, and to use the machine on line for calibrations or other support activities.

C116 PRESSURE TRANSDUCER
To be used with the Cybertronic mod. C 109, it is supplied complete of connection cable and calibration certificate.

Chapter 10 INACTIVITY

Ensure all machine parts are in safe working order before operating it again should the machine be inactive for a long period of time. When in doubt contact the Manufacturer.

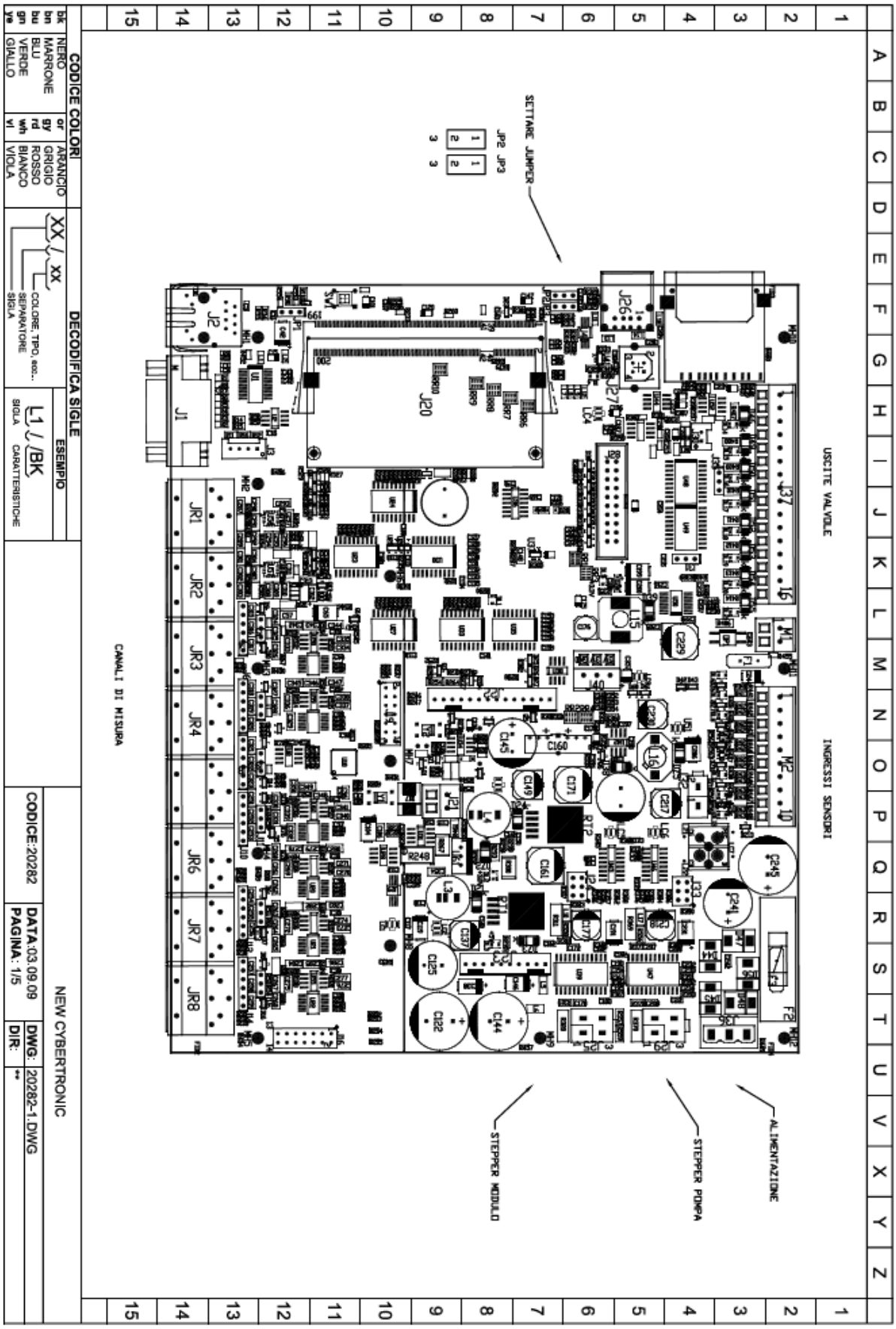
Chapter 11 DECOMMISSIONING THE MACHINE

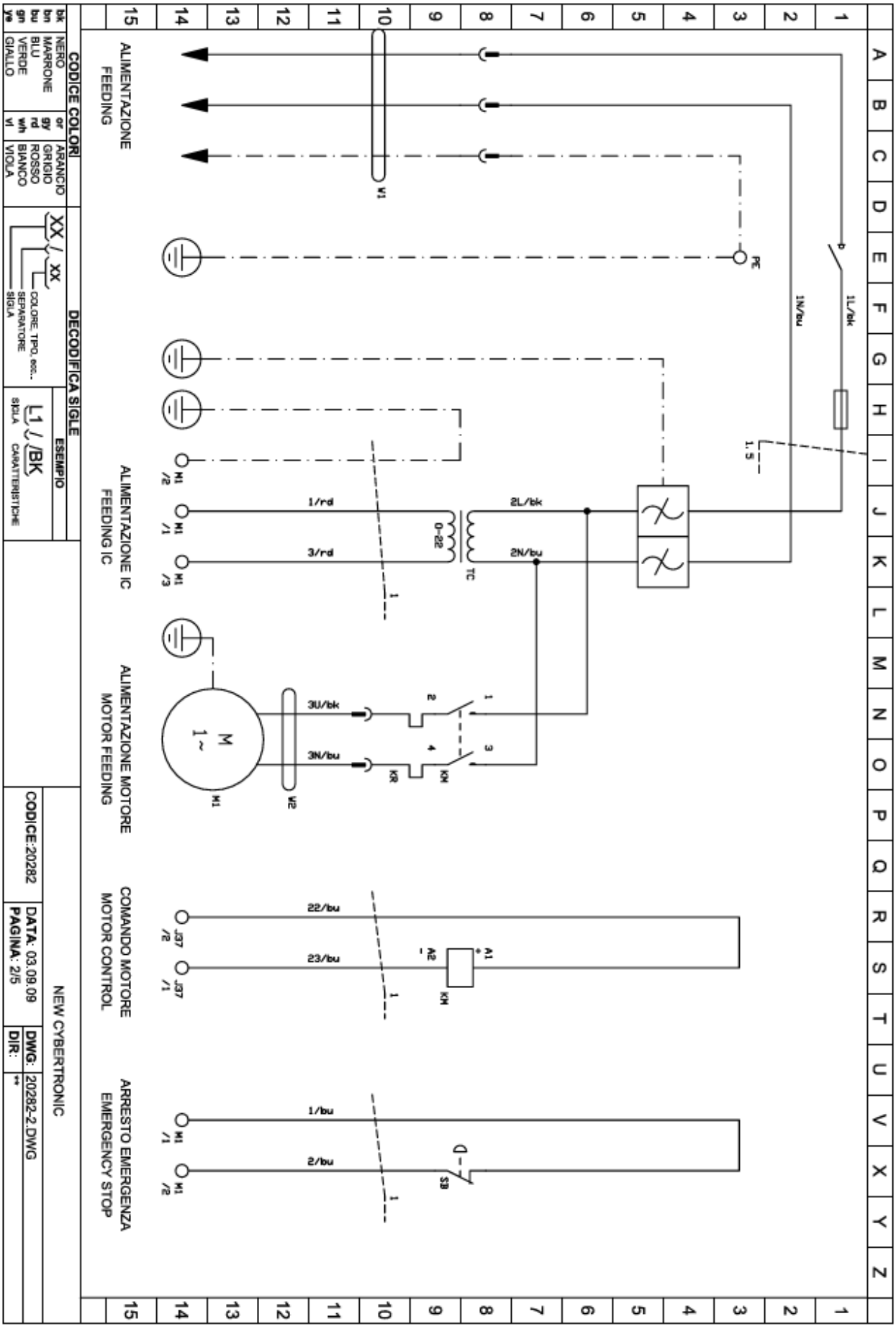
Should it be decided that the machine is to be no longer used, proceed as follows:
- Disconnect the electrical supply network by removing the connecting cable therefore making it unusable.
- Make the potential sources of danger harmless, such as sharp or protruding parts.
- Dismantle the machine; divide it into similar parts and dispose of according to the standards in force.

Recycling notice for the disposal of electrical and electronical devices

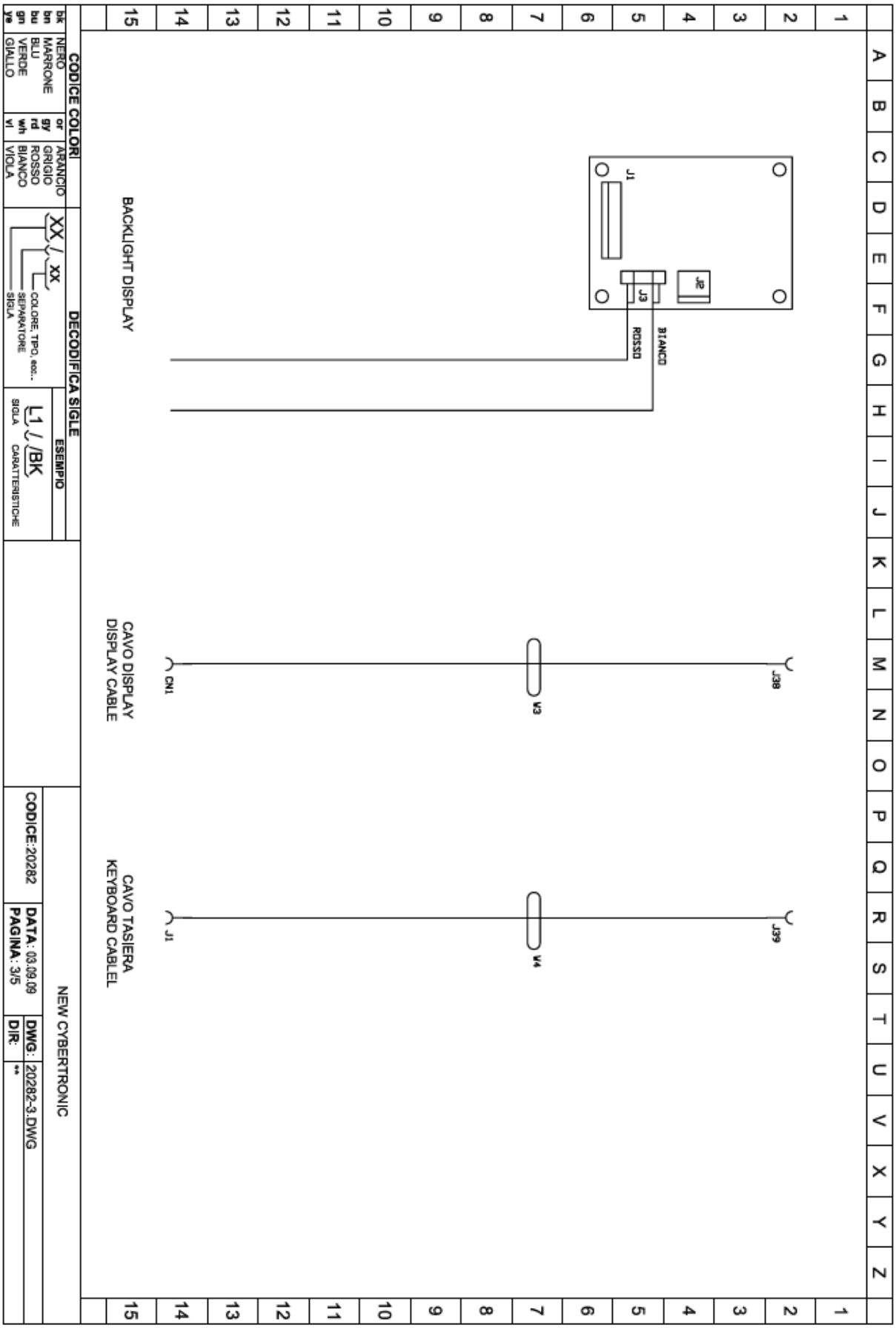
This symbol, shown on the device or on the package and/or the documentation, suggests that the device should not be disposed together with other home garbage at the end of its life cycle.
To avoid further environment, or health-care damage, caused by the unsuitable disposal of garbage, the user should separate this device from other different types of garbage and recycle it in responsibly to avoid the reuse of material resources. Users must take care at the disposal of the equipment by taking it to the nearest recycling site for appropriate recycling treatment for electrical and electronical devices. Gathering and Recycling deplete devices allow the preservation of natural resources and grant them the adequate treatment by respecting health and environment.
For further information on your local recycling site please contact your local council or city waste treatment department. The developer, as producer of electrical and electronical devices, will provide to finance the recycling and treatment services for deplete devices that will come back through these recycling sites, according to the local statement.

ATTACHED - A — WIRING





ALIMENTAZIONE FEEDING
ALIMENTAZIONE IC FEEDING IC
ALIMENTAZIONE MOTORE MOTOR FEEDING
COMANDO MOTORE MOTOR CONTROL
ARRESTO EMERGENZA EMERGENCY STOP
CODICE COLORI
DECODIFICA SIGLE
ESEMPIO
NEW CYBERTRONIC
CODICE:20282
DATA: 03.09.09
PAGINA: 2/5
DWG: 20282-2.DWG
DIR:


BACKLIGHT DISPLAY
J1
J2
J3
BIANCO
ROSSO
CAVO DISPLAY
DISPLAY CABLE
CN1
J38
V3
CAVO TASIERA
KEYBOARD CABLEL
J1
J39
V4
CODICE COLORI
bk NERO
bn MARRONE
bu BLU
gn VERDE
ye GIALLO
gr ARANCIO
gy GRIGIO
rd ROSSO
wh BIANCO
vi VIOLA
DECODIFICA SIGLE
XX / XX
COLORE, TIPO, ecc..
SEPARATORE
SIGLA
ESEMPIO
L1 / BK
SIGLA
CARATTERISTICHE
NEW CYBERTRONIC
CODICE:20282
DATA: 03.09.09
PAGINA: 3/5
DWG: 20282-3.DWG
DIR: **