TESTMAK
MATERIAL TEST EQUIPMENTS

Automatic Cement Compression and Flexural Testing Machine

CEMENT

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Automatic Cement Compression and Flexural Testing Machine

PRODUCT MODEL

M2550/250	Automatic Cement Compression and Flexural Testing Machine 250/25 kN, 220-240 V 50/60 Hz
M2550/300	Automatic Cement Compression and Flexural Testing Machine 300/30 kN, 220-240 V 50/60 Hz
M2550/500	Automatic Cement Compression and Flexural Testing Machine 500/50 kN, 220-240 V 50/60 Hz
M2560	Automatic Cement Compression Testing Machine 250 kN, 220-240 V 50/60 Hz
M2550/AC5	Compression Jig Assembly to test 50 mm (2") mortar cubes, ASTM
M2550/EC4	Compression Jig Assembly to test portions of 40x40x160 mm mortar prisms, EN
M2550/BC7	Compression Jig Assembly BS, to test 70,7 mm mortar cubes
M2550/AF4	Flexure Jig Assembly to test 40x40x160 mm mortar prisms, ASTM
M2550/EF4	Flexure Jig Assembly to test 40x40x160 mm mortar prisms, EN

PRODUCT STANDARDS

Standards	EN 196-1 | BS 3892 | ASTM C109 | NFP18-411 | DIN 1164 | UNE 80101 | EN ISO 679

INFORMATION

Manufacturer	TESTMAK INS.LAB.MAK.SAN.VE TİC. PAZ. ITH. IHR. LTD. STI
Country of Origin	TURKEY
Product name	Automatic Cement Compression and Flexural Testing Machine

Automatic Cement Compression and Flexural Testing Machine

DESCRIPTION

The TESTMAK Automatic range of single testing chamber and double testing chamber compression and flexure testing machines have been designed for reliable and consistent testing of mortar samples. These compression and flexure testers are in suitable international standards (EN 196-1, 459-2, 1015-11, 13454- 2; ASTM C 109, C348, C349 and BS 3892-1, 4551-1). Automatic cement compression and flexural machines are manufactured in terms of its technical properties taking into account client requirements by using suitable accessories. These machines also meet the requirements of CE norms for safety and health of the operator. Compression and flexture jigs should be ordered separately.

The TESTMAK automatic cement compression and flexure testing machines consist of very rigid two column single or double chamber frames, automatic hydraulic power pack with data acquisition and control system TCM.

The TESTMAK automatic cement compression and flexure testing machines allow less experienced operators to perform the tests. Once the machine has been switched on and the specimen is positioned and centered by the help of centering apparatus. The only required operations are;

Choosing the compression or flexure test by using the changeover valve.

Pressing the START button on the control unit.

Automatically saves the test parameters and test results.

Power Pack

M2550/05 Automatic Hydraulic Power Pack, dual stage, controlled by TCM is designed to supply the required oil to the load frames for loading. Very silent power pack can load the specimen between 50 N/sec to 2.4 kN/sec with an accuracy of ±5%. A Rapid approach pump is supplied as standard. Safety valve (maximum pressure valve) is used to avoid machine overloading.

Motor

The motor which drives the dual pump is an AC motor, 220 V, 50-60 Hz, 1 phase, 1 hp and 1.1 kW and it is controlled by motor inverter. The variation in the oil flow is executed with the variation of the rotation speed of the motor.

Distribution Block

A distribution block is used to control the oil flow direction supplied by the dual stage pump, the following parts are fitted to the distribution block;

- Solenoid valve
- Safety valve (maximum pressure valve)
- Transducer
- High pressure radial piston pump

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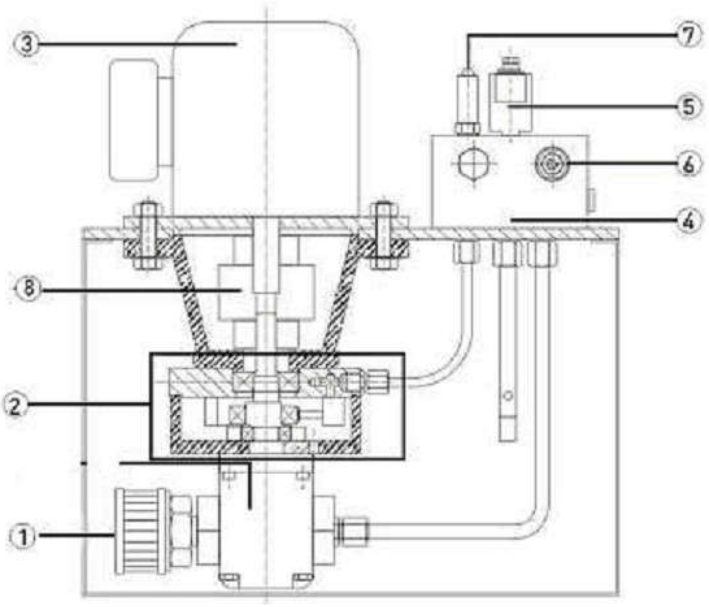
Oil Tank

The tank includes enough oil to fill the mechanism which pushes the ram during the test. The level and oil temperature can be seen on the indicator fitted to the tank. It has 18 L capacity. Hydraulic motor oil, number 46, must be used.



1- FILTER FOR POMP
2- HIGH PRESSURE RADIAL PISTON POMP
3- MOTOR
4- DISTRIBITION BLOCK
5- SELONOID VALVE
6- SAFETY VALVE
7- TRANSDUSER
8- COUPLING COMPONENTS

TCM LCD Graphic Display

Color TFT display supports 16 lar and 7 800 screen sizes, supports 16M colors and supports 800x480 pixel screen resolution

Firmware

The TCM LCD graphic display is controlled using the function keys on the front panel. Two analog channels for the load cell and two digital channels for there is a displacement sensor. Simultaneous load mapping of specific operating conditions, actual load speed and load / time schedule; USB connection to PC; Multi calibration coefficient.

Data collection and PC software

The testing software compression machine is designed for both ASTM, EN and BS STANDARTS compression testing. This software includes controlling the machine, collecting load data and moving, saving them and reports. The compression test of the software samples takes the diameter and height as the input parameter. It automatically calculates the correction factor, coming with respect for the sample size standards. Graphical results and reports can be saved as a MS Excel sheet.

MAIN CHARACTERISTICS

• 3 universal analog input sockets (ADC)

• Each analog input with 18 bit precision (1/256000)

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• 1 replacement analog input
• A total of 4 analog high-precision measuring capacities
• 2 analog output sockets (DAC)
• Analog outputs generate a 0-10V DC output signal
• Motor speed control devices, servo valves with this output signal, proportional valves, etc. The reference signal is produced.
• PULSE / DIR outputs (PULSE / DIR / ENA) to control the servo and stepper motor drives
• 5 digital outputs for general purpose (can pull relays and control different electrical units)
• 5 digital inputs for general purpose (receives and evaluates input signals like limit contacts from the environment)
• Potentiometer input (reference signal input for calibration and remote control)
• 2 RS 232 serial communication signal outputs (communicates with computers)
• It also connects to motor drives via serial communication via MODBUS connection
• USB communication signal output (communicates with computers)
• Connects to local networks and the Internet with Ethernet 10/100 network connection output (optional)
• Connects to portable devices via Bluetooth wireless connection (optional)
• 500 test results can be stored in internal memory
• Due to the SD (memory) card connection, a large number of test results can be stored in the device memory (40,000 test results).
• In addition, the results can be taken from the device memory and transferred to the computer as an Excel table. (Optional)
• Color TFT display supports 16 lar and 7 800 screen sizes, supports 16M colors and supports 800x480 pixel screen resolution
• Resistive touch screen allows easy operation of device functions by touching the screen
• Access to frequently used functions with 6 membrane keypads
• The industrial standard operates with 24VDC supply voltage. Built-in voltage filter and regulator protects against input signal fluctuations
• Sensor modules are compatible with loadcell (load cell), pressure sensor (4-20 / 0-20 mA), potentiometric distance sensors, strain washers, thermocouples and all kinds of mV output sensors.
• Provides precise calibration with multi-point calibration (up to 10 points)
• Setting and calibration menus are password protected and prevent unauthorized use
• Allows testing with a computer or device
• There are many test sample information screens and test methods in the device memory and tests can be performed easily

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• Different menu languages can be selected via the device via language support

• Speed control algorithm is closed loop PID control and all parameters can be adjusted on user side.

• The device can switch between one-touch load and deformation control modes

• The graphical field that visualizes the test results on the screen has the ability to change the scale automatically and automatically adjusts the optimal scale as the values change

• Firmware updates can be made via USB input. In addition, via the computer allows remote or internet update.

Test Type	Flexure	Compression
Capacity	25 kN	250 kN
Class 1 Measuring Range	0.5 to 25 kN	2.5 to 250 kN
Accuracy	0.01 kN	
Lower Platen Dimensions	165 mm	165 mm
Lower Platen Dimensions	165 mm	165 mm
Upper Platen Dimensions	165 mm	165 mm
Max. Vertical Clearance	263 mm	263 mm
Piston Diameter	80 mm	160 mm
Maximum Piston Movement	50 mm	50 mm
Horizontal Clearance	200 mm	300 mm
Power	1100 W	
Oil Capacity	18 Liter	
Maximum Working Pressure	30 Bar	125 Bar
Rapid Approach Rate	80 mm	50 mm
Dimensions	1150x550x1700 mm	
Weight	470 kg	

Standard Accessories:

• Standard Accessories:

• Flexural Strength Test Machine

• Jig for Compression Test Device

• Compression Test Device for cube

• Suitable Distance Piece

• Graphic Printer for direct print of test results

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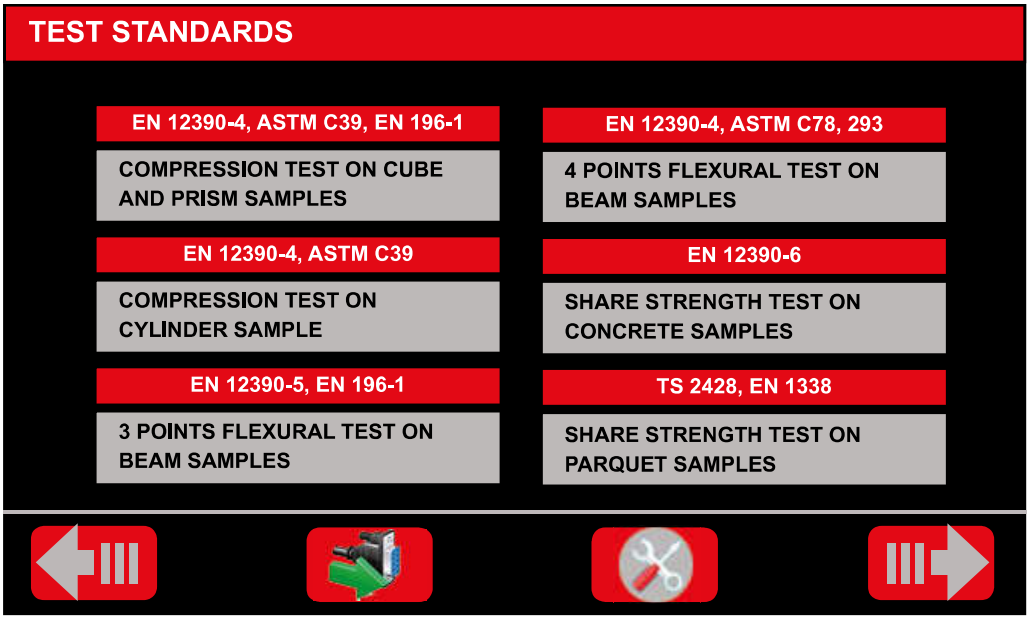

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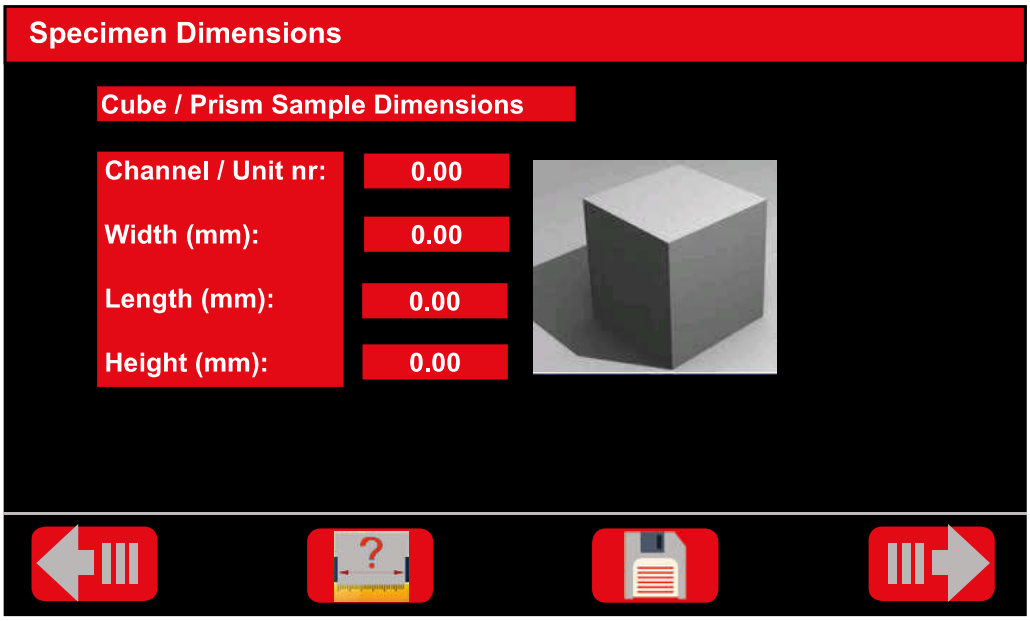

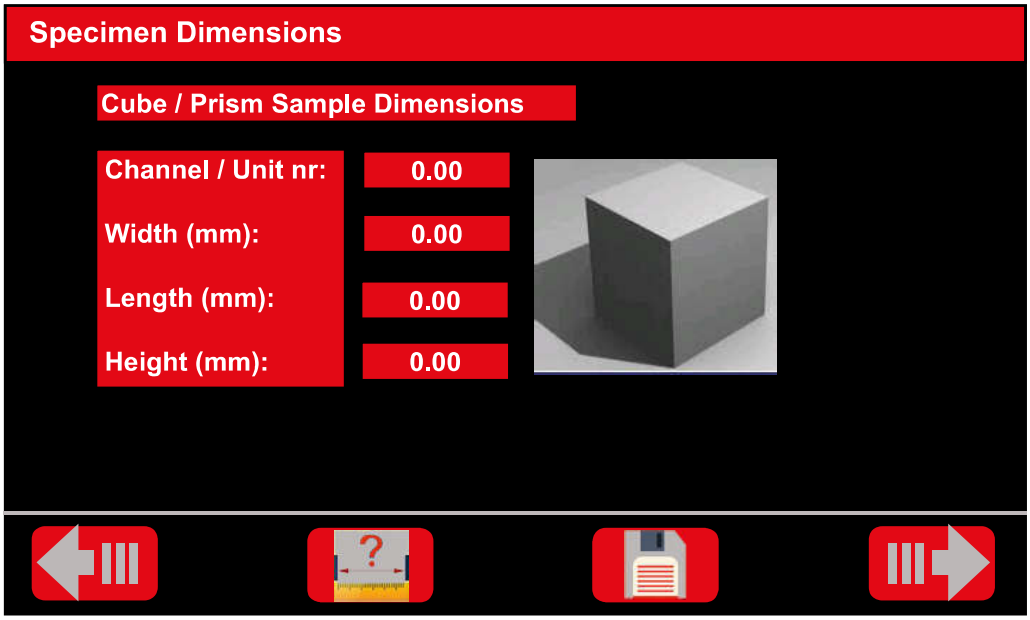

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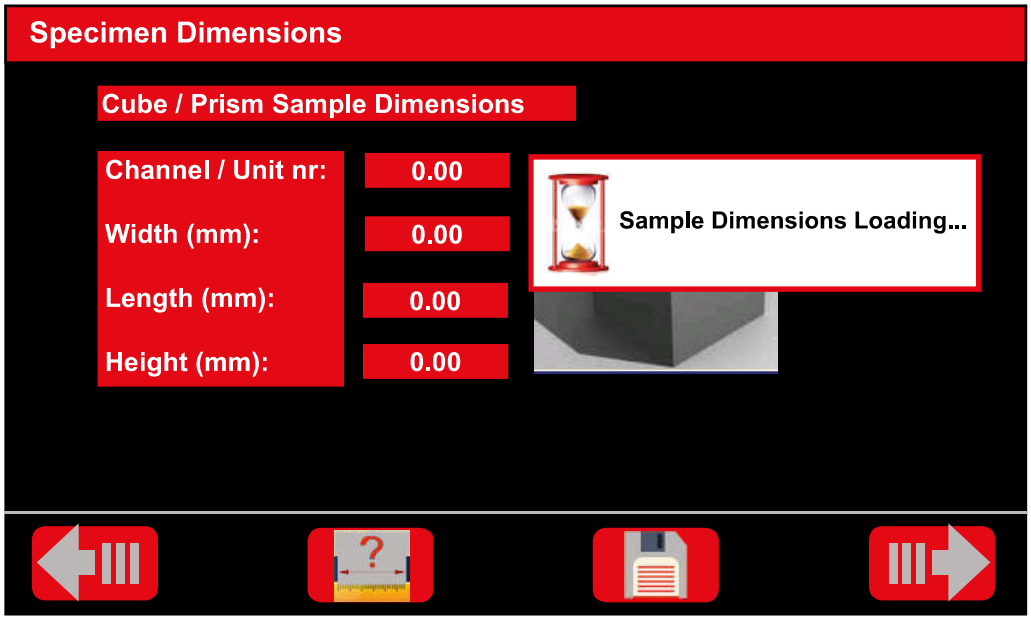

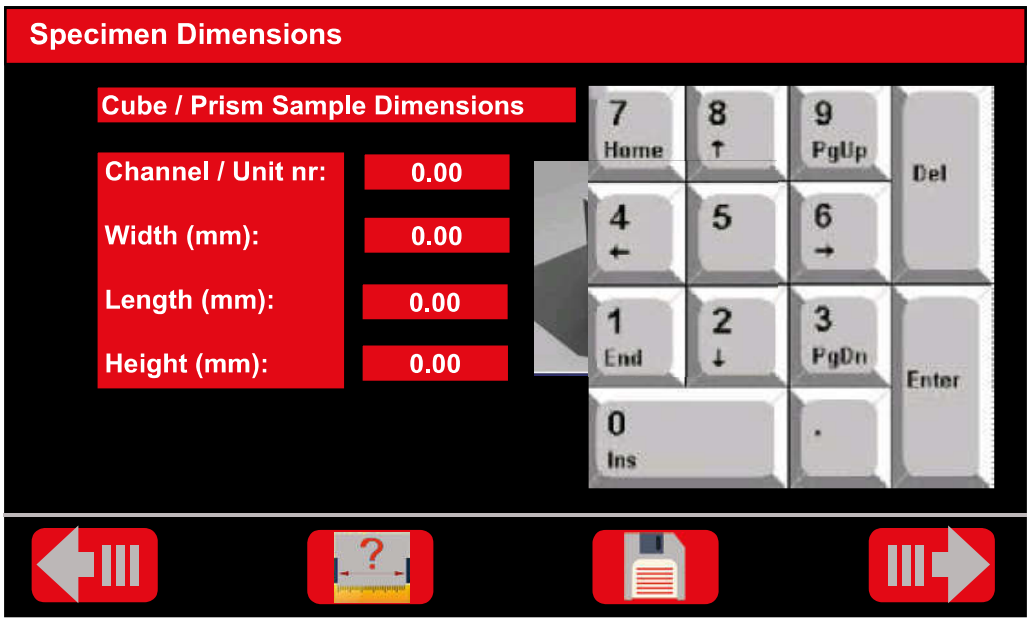

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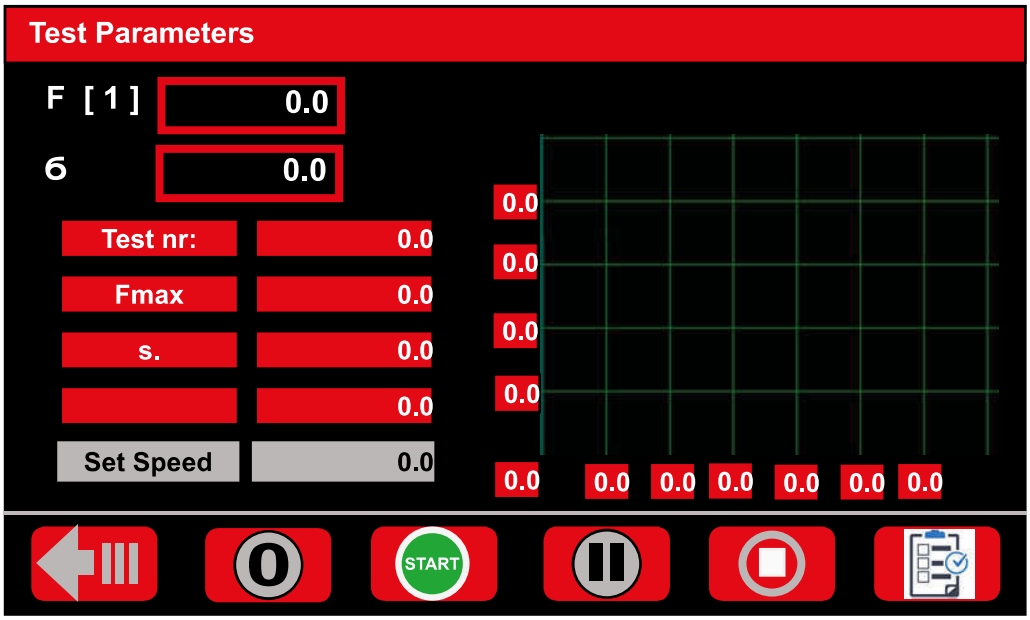

Start the Test

Press (START) to start the test. First, the device performs a bit of fast loading up to the boot value. When the boot value is reached, the speed is automatically set to the test speed level and kept constant at this level until the end of the test.

Pause on Load

If you want to stabilize the load at any load level during the test (PAUSE), press the hold button. In this case, the load is fixed at the load value level when the hold button is pressed and the device starts to wait. If this button is pressed again, the load will resume.

Pause on Load

The device automatically terminates the test when the condition specified for the end of the test occurs.

This condition is usually a decrease in the load as a result of the breakage of the test specimen, but sometimes the test can be completed when a certain load or deformation value is reached.

The user can also end the test at any time by pressing the STOP key at any time (STOP). The unit automatically terminates the test to protect the machine and the sensors when the device detects that the specified loading capacity has been reached.

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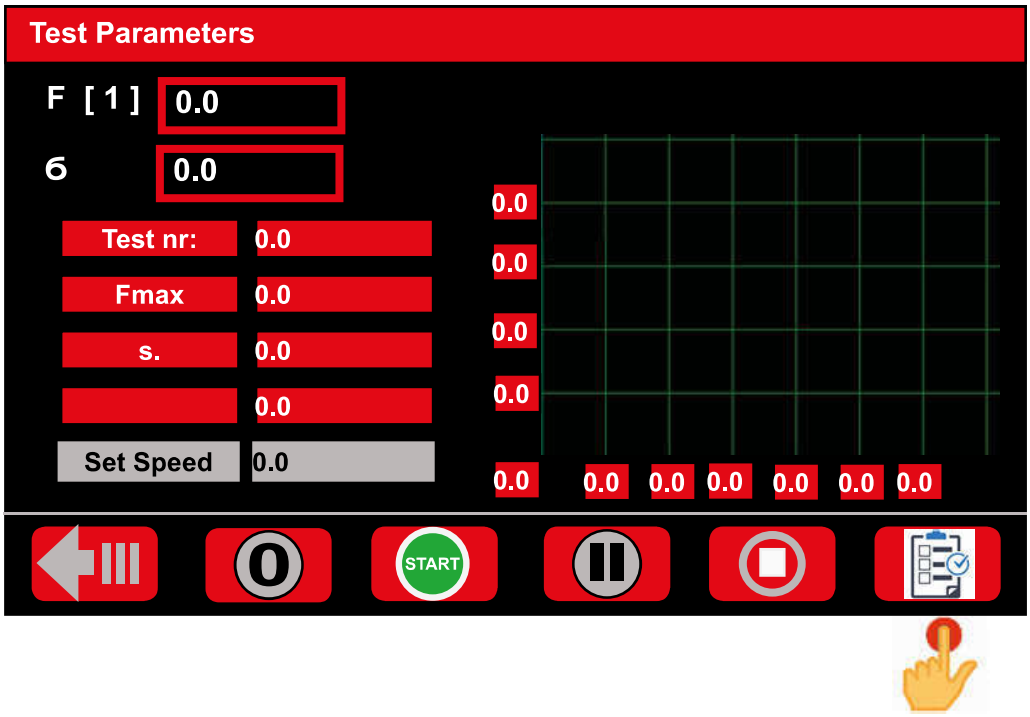
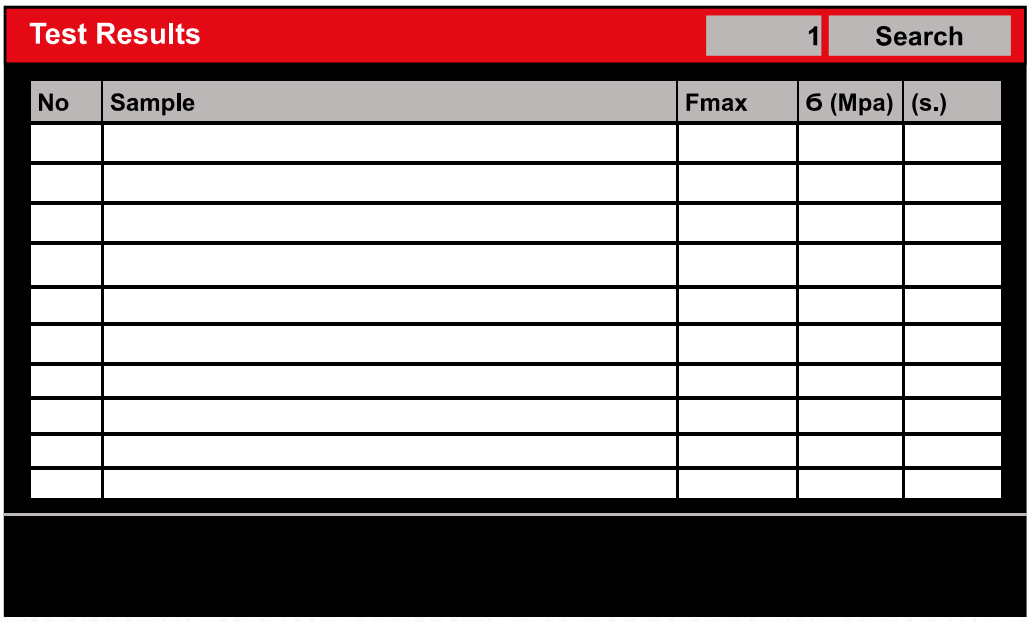
Test Results

The test results are saved as a table in the device memory. To access this table, press the test button on the test screen. In this case, the test results are displayed.



Test Results

When the test results are displayed in a table, the test result is displayed on each page. Use the up / down arrow keys to scroll through the pages. This allows switching between 500 test results in the device memory.



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SOFTWARE

The tests and calibration can be done and monitored with a computer by connecting it to the machine. LCD Control unit can connecting with RS232 or USB port to the machine. Using the state-of-the-art software provided by TESTMAK with the machine will help performing and managing the tests in a very easy and fast way. By performing the tests via computer, the results can be saved and recalled when required. Reports can be generated automatically by the software and sent to printer.

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