TESTMAK
MATERIAL TEST EQUIPMENTS

HSB AUTOMATIC BLOCK COMPRESSION TESTING MACHINE

CONCRETE

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HSB Automatic Block Compression Testing Machines

PRODUCT MODEL

C5232/E	2000 kN Automatic Block Compression Testing Machine, EN - 220-240 V 50-60 Hz
C5232/A	2000 kN Automatic Block Compression Testing Machine, ASTM - 220-240 V 50-60 Hz
C5234/E	3000 kN Automatic Block Compression Testing Machine, EN - 220-240 V 50-60 H
C5234/A	3000 kN Automatic Block Compression Testing Machine, ASTM - 220-240 V 50-60 Hz

STANDARDS

Standards	ASTM E447 | EN 772-1 | BS 6073 | UNE 83304 | BS 1610 | NF P18-411 | UNI 6686 Part 1 and 2 | ASTM C39 | AASHTO T22

INFORMATION

Manufacturer	TESTMAK INS.LAB.MAK.SAN.VE TİC. PAZ. ITH. IHR. LTD. STI
Country of Origin	TURKEY
Product Name	Automatic Block Compression Testing Machine

HSB Automatic Block Compression Testing Machines

DESCRIPTION

The Testmak HSB series Automatic Block Compression Testing Machines are to test block specimens maximum 500x300 mm, cubes up to 300 mm side and cylinders up to diameter 160x320 mm. Exceeding of the ASTM E447, ASTM C39 standard provisions (starts with the 10% of the machine capacity), the TCM-5232 and TCM-5234 are supplied in Class 1 starting from 50 kN. This exceptional performance enables the machines to be used for a considerable number of applications including:

HSB Automatic Block Compression Testing Machines supplied complete with following accessories;

1- Spacer Discs;

• Diameter 165 mm x Height 90 mm spacer disc 1 piece

• Diameter 165 mm x Height 50 mm spacer disc 1 piece

• Diameter 165 mm x Height 30 mm spacer disc 2 piece

2- Upper Platen;

• Upper Platen 310x500x38 mm (with ball seating assembly)

3- Lower Platen;

• Lower Platen 310x500x38 mm

4- Piston;

• Piston Diameter 250 mm (For 2000 kN Capacity Models)

• Piston Diameter 300 mm (For 3000 kN Capacity Models)

5- Automatic Hydraulic Power Pack ;

• Automatic Hydraulic Power Pack, 410 bar (For All Models)

Testable Specimens

• Rectangular platens 310x410x90 mm (12.2”x16.1”x3.5”) for testing blocks according to ASTM C140 and ASTM C1314. Traceable certificate of surface hardness available on request. For EN Standards Concrete Block: Maximum 500x300 mm.

• Concrete Cubes: 100 mm, 150 mm, 200 mm concrete cube sample or any other custom cube and prism size can be tested with this machine.

• Concrete Cylinder: 100x200 mm, 150x300 mm, 160x320 mm concrete cylinder samples or any other custom diameters cylinder can be tested with this machine.

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Safety Features

- Maximum pressure valves to avoid machine overloading
- Piston travel limit switch
- Emergency stop button
- Front and rear transparent durable plexiglas guards
- Software controlled maximum load value

TECHNICAL SPECIFICATIONS

Product Code	C5232/E	C5234/E	C5232/A	C5234/A
Standards	EN	EN	ASTM	ASTM
Capacity	2000 kN	3000 kN	2000 kN	3000 kN
Frame Type	Welded Frame	Welded Frame	Welded Frame	Welded Frame
Sample	Concrete Block: Maximum 500x300 mm Cylinders: 100x200 mm, 150x300 mm Cubes 100,150,200 mm	Concrete Block: Maximum 500x300 mm Cylinders: 100x200 mm, 150x300 mm Cubes 100,150,200 mm	Rectangular platens 310x410x90 mm (12.2"x16.1"x3.5") for testing blocks according to ASTM C140 and ASTM C1314.	Rectangular platens 310x410x90 mm (12.2"x16.1"x3.5") for testing blocks according to ASTM C140 and ASTM C1314.
Upper Platens Dim.	310x510x50 mm	310x510x50 mm	310x410x90 mm	310x410x90 mm
Lower Platens Dim.	310x510x50 mm	310x510x50 mm	310x410x90 mm	310x410x90 mm
Max. Vertical Clearance	340 mm	340 mm	370 mm	370 mm
Max. Horizontal Clearance	360 mm	425 mm	360 mm	425 mm
Piston Diameter	250 mm	300 mm	250 mm	300 mm
Max. Piston Movement	50 mm	50 mm	50 mm	50 mm
Max. Working Pressure	410 Bar	410 Bar	410 Bar	410 Bar
Oil Capacity	18 Liters	18 Liters	18 Liters	18 Liters
Power	1100 W	1100 W	1100 W	1100 W
Dimensions	920x580x1500 mm	1020x620x1550 mm	900x500x1550 mm	900x500x1550 mm
Weight Power Pack	820 kg	1080 kg	790 kg	1020 kg

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UPPER & LOWER PLATENS

C3070/A-01 | Upper Platen (with ball seating assembly) Ø 165 mm, Lower Platen Ø 165 mm

C3070/A-02 | Upper Platen (with ball seating assembly) Ø 216 mm, Lower Platen Ø 216 mm

C3070/E-03 | Upper Platen (with ball seating assembly) Ø 300 mm, Lower Platen Ø 300 mm

C3070/A-04 | Upper Platen (with ball seating assembly) 310x410x90 mm, Lower Platen 310x410x90 mm

C3070/E-04 | Upper Platen (with ball seating assembly) 310x500x50 mm, Lower Platen 310x500x50 mm

The platens enable the testing of a wide variety of cylinder, cube blocks or similar samples. Produced from high quality steel, which is then hardened. Surface hardness 55HRC, flatness tolerance 0.02 mm. Traceable certificate of surface hardness available on request. Have centering rings on the lower platens for proper centering of 100 mm and 150 mm cube, 100 mm and 150 mm cylinder samples.

Product Code	C3070/A-01	C3070/A-02	C3070/E-03	C3070/E-04
Desctription	Upper Platen (with ball seating assembly) Ø 165 mm, Lower Platen Ø 165 mm	Upper Platen (with ball seating assembly) Ø 216 mm, Lower Platen Ø 216 mm	Upper Platen (with ball seating assembly) Ø 300 mm, Lower Platen Ø 300 mm	Upper Platen (with ball seating assembly) 310x500x50 mm, Lower Platen 310x500x50 mm
Sample	4" , 6" dia. cylinders 100 mm cubes	6" dia. cylinders 100, 150 mm cubes	Cylinders: 100x200 mm, 150x300 mm, 160x320 mm Cubes 100,150,200 mm	Blocks up to 310x500 mm
Used with Frames	TMC-3200, TMC-3201, TMC-3204, TMC-3206, TMC-3208, TMC-3209	TMC-3200, TMC-3201, TMC-3203, TMC-3204, , TMC-3205, TMC-3206, , TMC-3207, TMC-3208, TMC-3209	TMC-3203, TMC-3205, TMC-3207, TMC-3209	TMC-3202, TMC-3203, TMC-3204, TMC-3205, TMC-3206, TMC-3207, TMC-3208, TMC-3209
Standards	ASTM C39	ASTM C39 and EN 12390-4	EN 12390-4	EN 772-1
Hardness	≥ 55 HRC	≥ 55 HRC	≥ 53 HRC	≥ 600 HV
Dimensions	170x170x145 mm	220x220x145 mm	310x310x175 mm	320x510x175 mm
Weight	21 kg	38 kg	78 kg	135 kg

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DISTANCE PIECES

C3060/A-01 | Distance Pieces, Ø 165x15 mm
C3060/A-02 | Distance Pieces, Ø 165x30 mm
C3060/A-03 | Distance Pieces, Ø 165x40 mm
C3060/A-04 | Distance Pieces, Ø 165x90 mm
C3060/E-05 | Distance Pieces, Ø 205x30 mm
C3060/E-06 | Distance Pieces, Ø 205x50 mm
C3060/E-07 | Distance Pieces, Ø 205x90 mm

Distance pieces are used to reduce the amount of vertical clearance between the upper platen and the lower platen. 600 to 3000 kN machines are supplied with 205 mm and 165 mm dia distance piece.

Model	Dimensions	Weight (approx.)
C3060/A-01	165x165x15 mm	2,5 kg
C3060/A-02	165x165x30mm	5 kg
C3060/A-03	165x165x40 mm	7 kg
C3060/A-04	165x165x90 mm	14 kg
C3060/E-05	205x290x30 mm	8 kg
C3060/E-06	205x290x50 mm	13 kg
C3060/E-07	205x290x90 mm	22 kg

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LCD DATA ACQUISITION CONTROL SYSTEM

The Data Acquisition Control provides real-time graphical indication. Automatically determines the load rate in accordance with the international standards upon sample type. With the STOP and START buttons, the test will automatically stop or start.

LCD Data Acquisition Control System has different units are available (kN / kgf / lbf). Can do Automatic Load Rate upon Sample Type. Total load and also per area are given. and has real time graph indication. Stops Automatically, when Test is completed. Test results can be send printer to with software or from the thermal printer. Can do calibration easily from 5 points. Manual Control is available. Computer and printer are not included in the price.

Data Acquisition Control

Technicial Specifications

• 3 universal analog input sockets (ADC)
• Each analog input with 18 bit precision (1/256000)
• 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. 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 RS232 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

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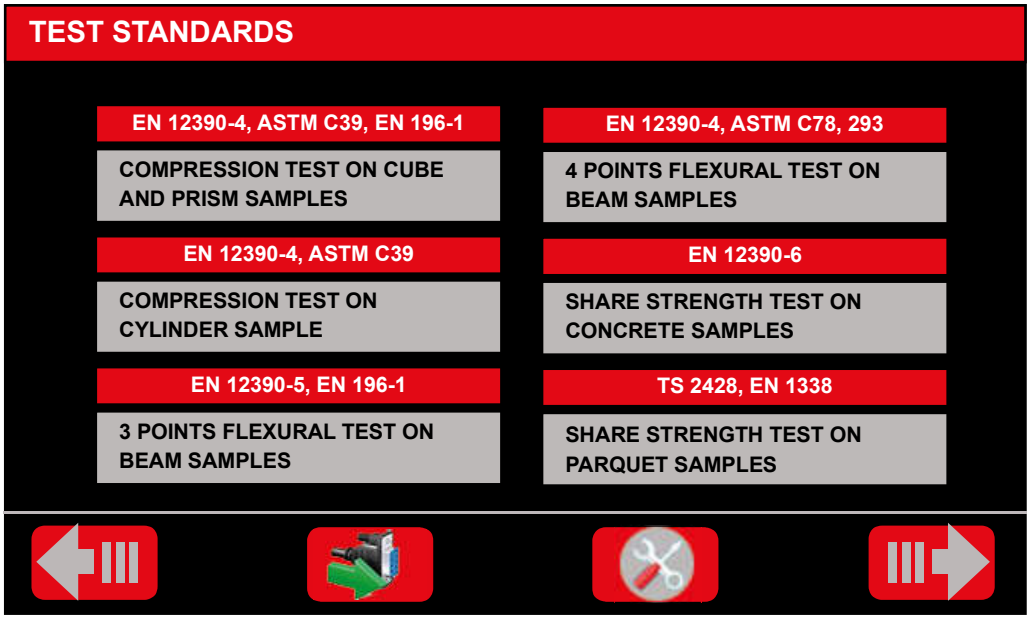
• Resistive touch screen allows easy operation of device functions by touching the screen
• Access to frequently used functions with 6 membrane keypads
• The industrial standard operates with 24V DC supply voltage. Built-in voltage filter and regulator protects against input signal fluctuations
• Sensor 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
• 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 modesCihaz farklı makinelere kolayca adapte edilebilir ve en uygun kontrol sağlanır
• 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.

When energized to the device, on the digital indicator display will show the following information.



Tel : +90 312 395 36 42
Fax : +90 312 395 36 01
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info@testmak.com
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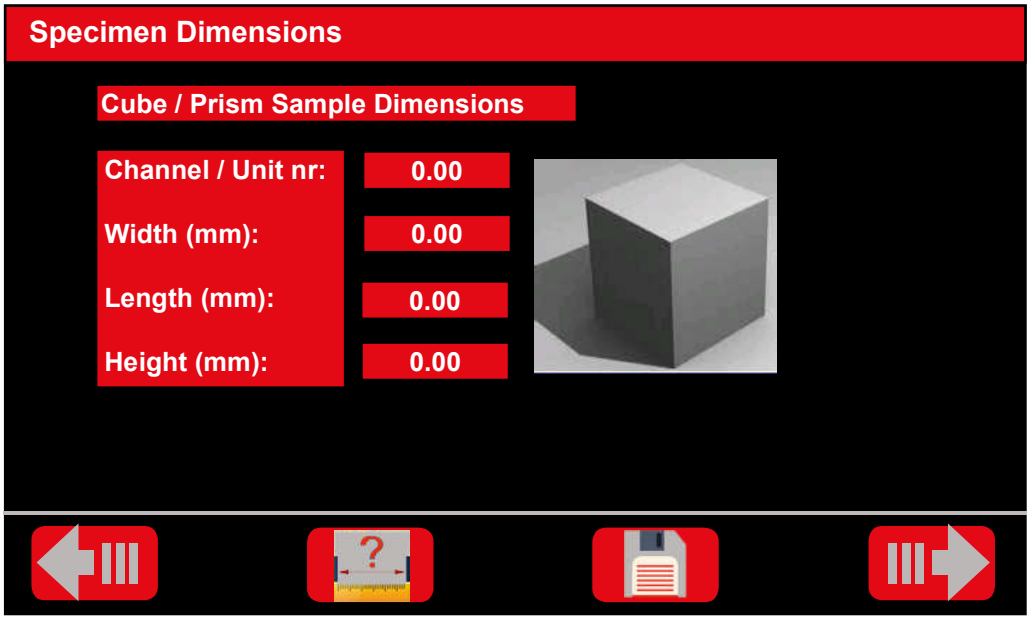

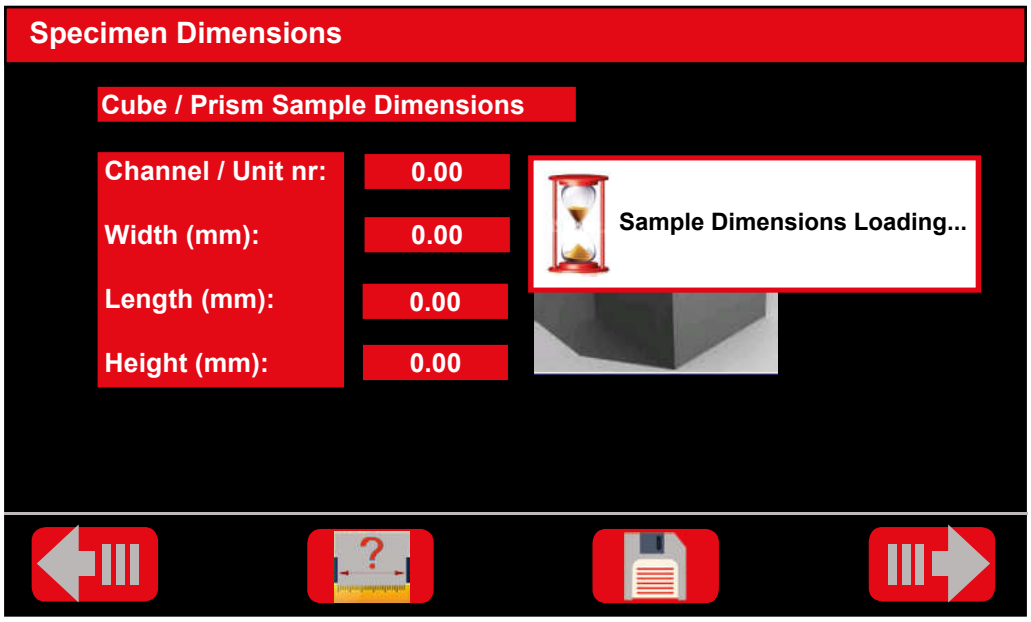

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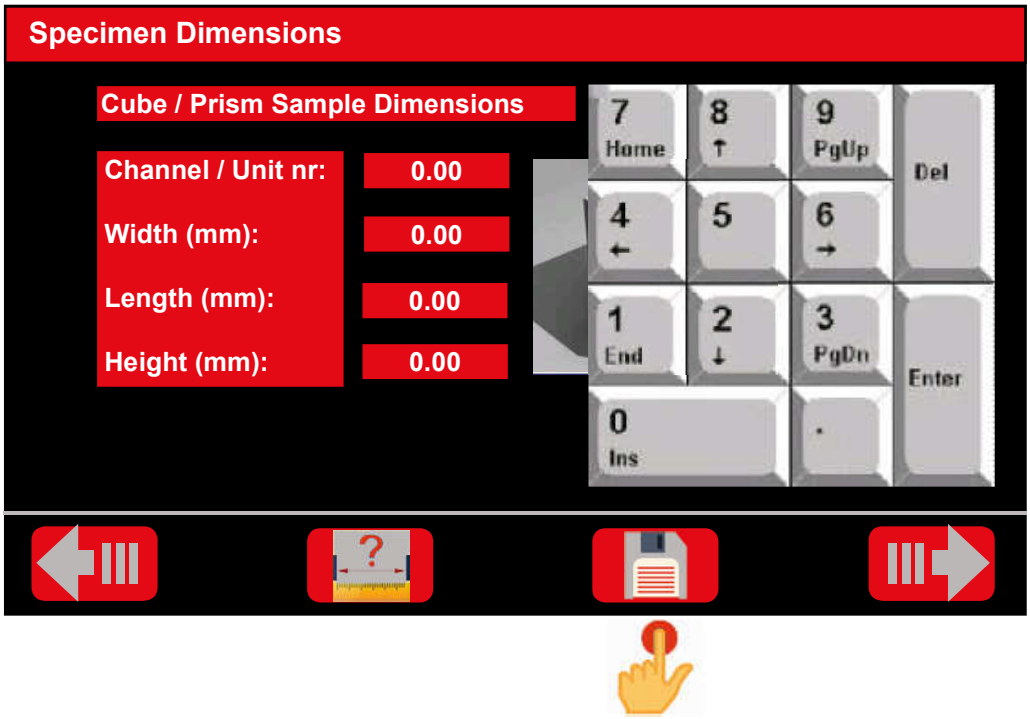

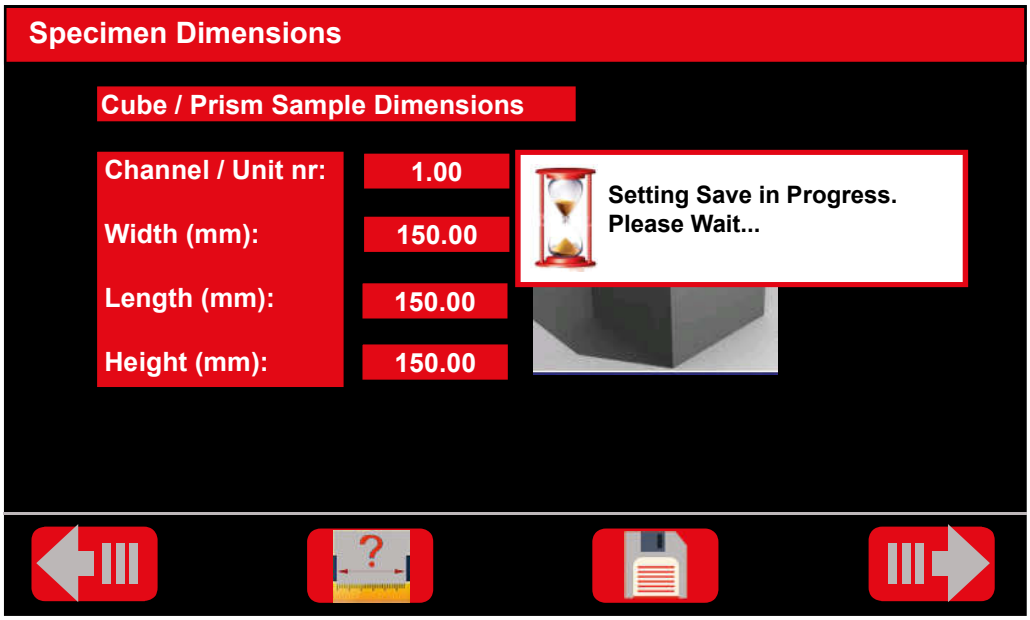

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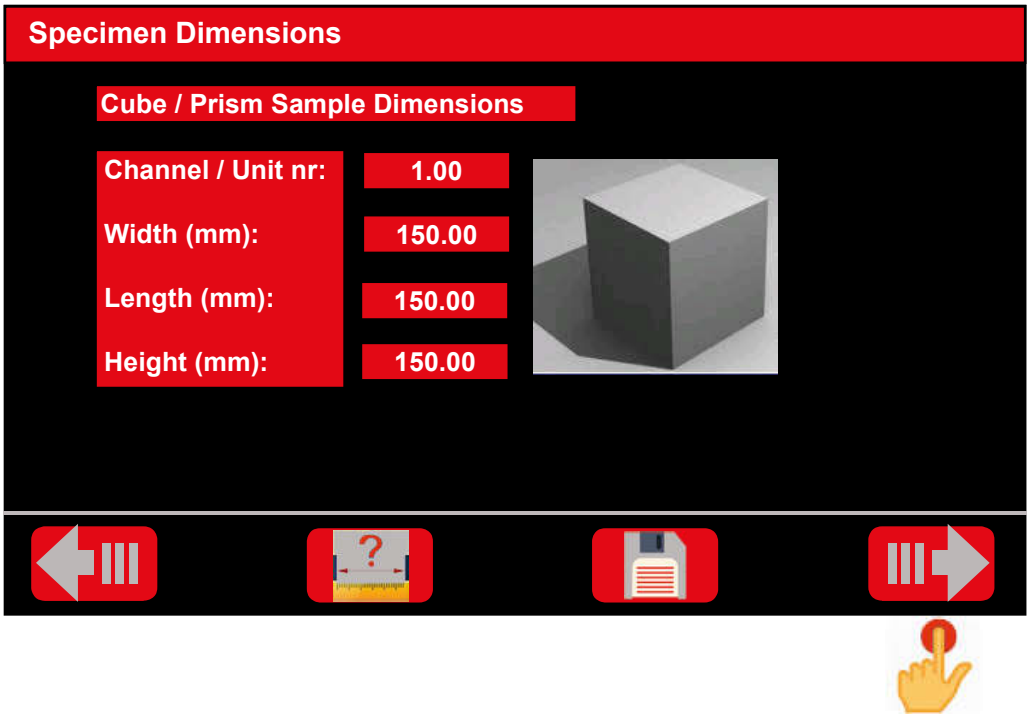

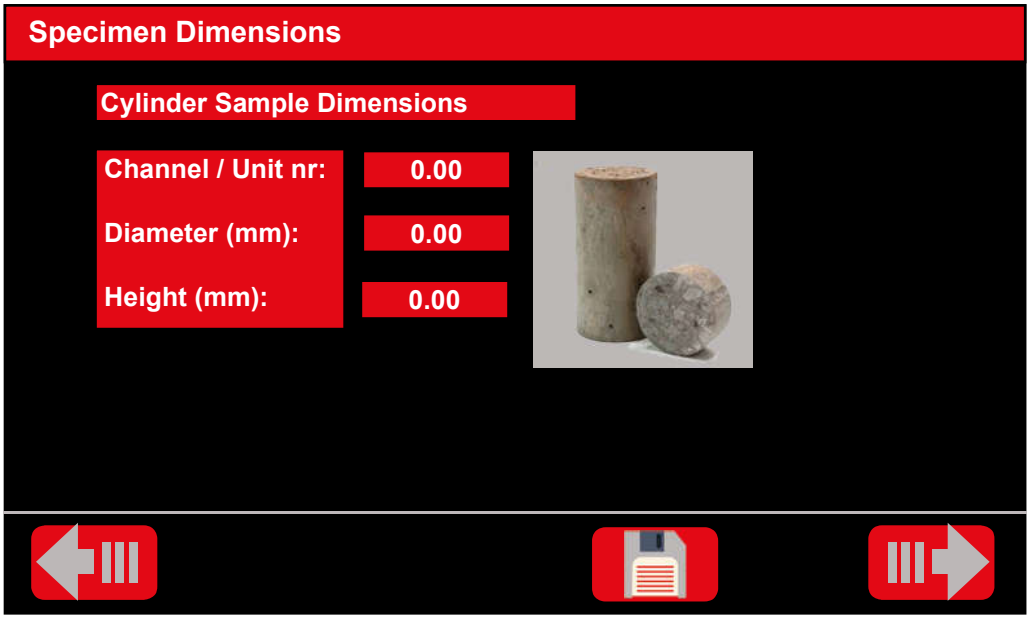

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Specimen Dimensions

Beam Sample Dimensions

Channel / Unit nr:	0.00
Width (mm):	0.00
Length (mm):	0.00
Height (mm):	0.00
Distance Between Supports (mm):	0.00

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Channel / Unit nr:	0.00
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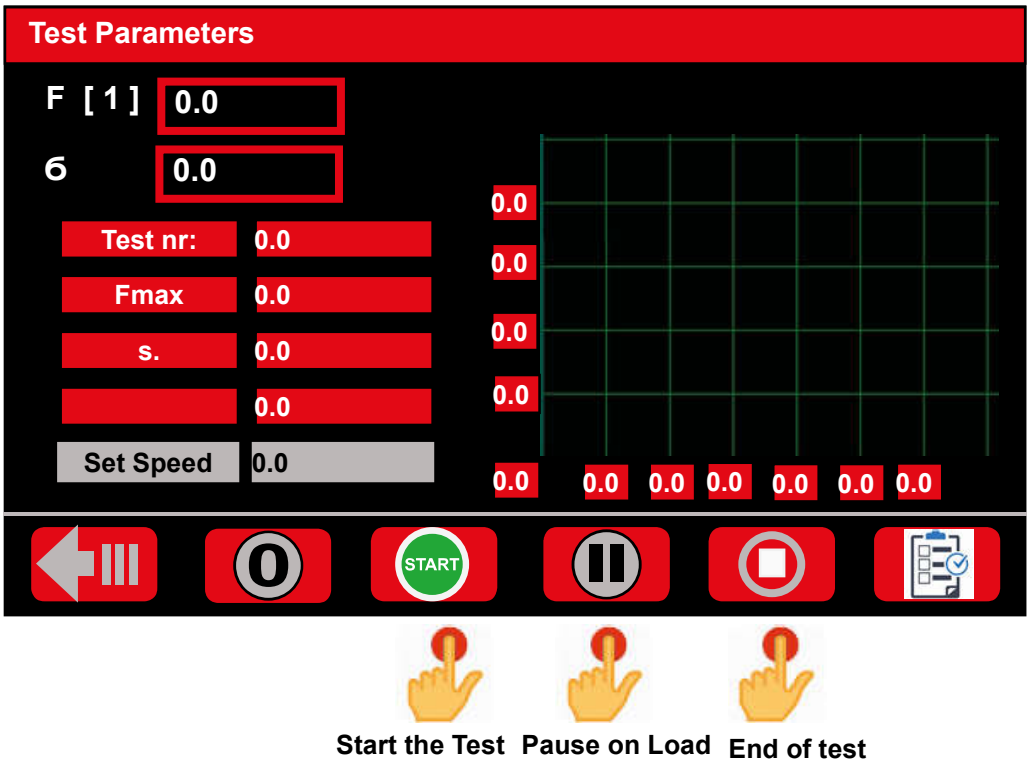

Start the Test Pause on Load End of test

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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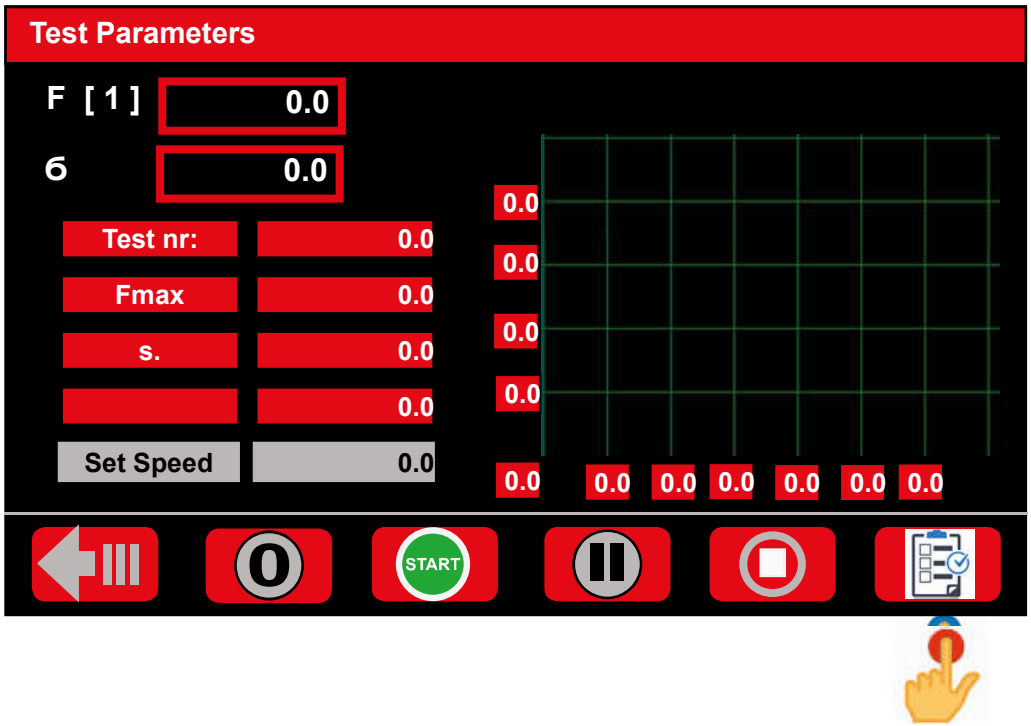
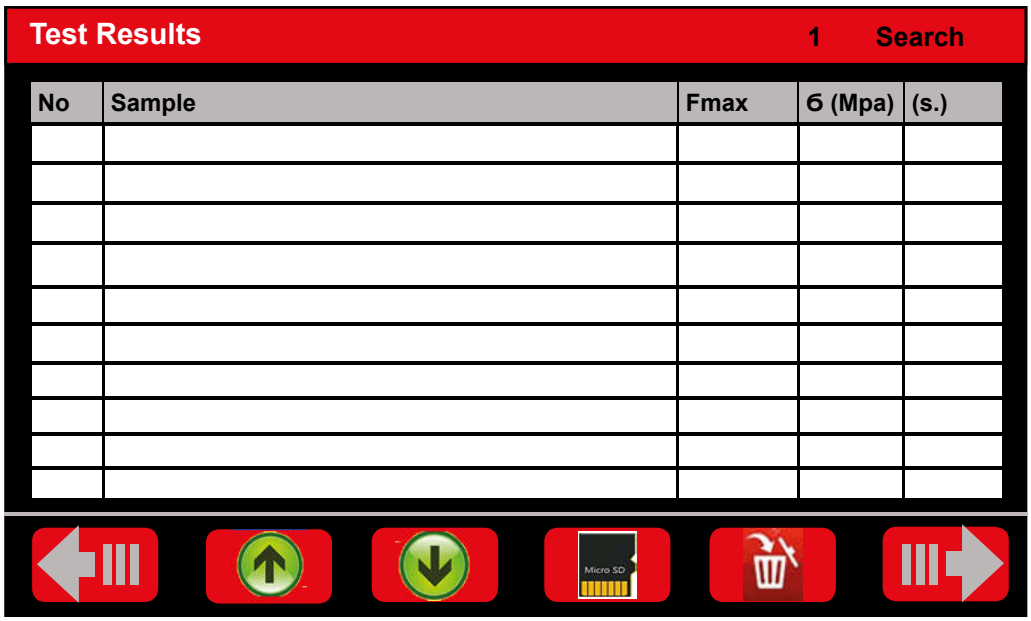
Test Results

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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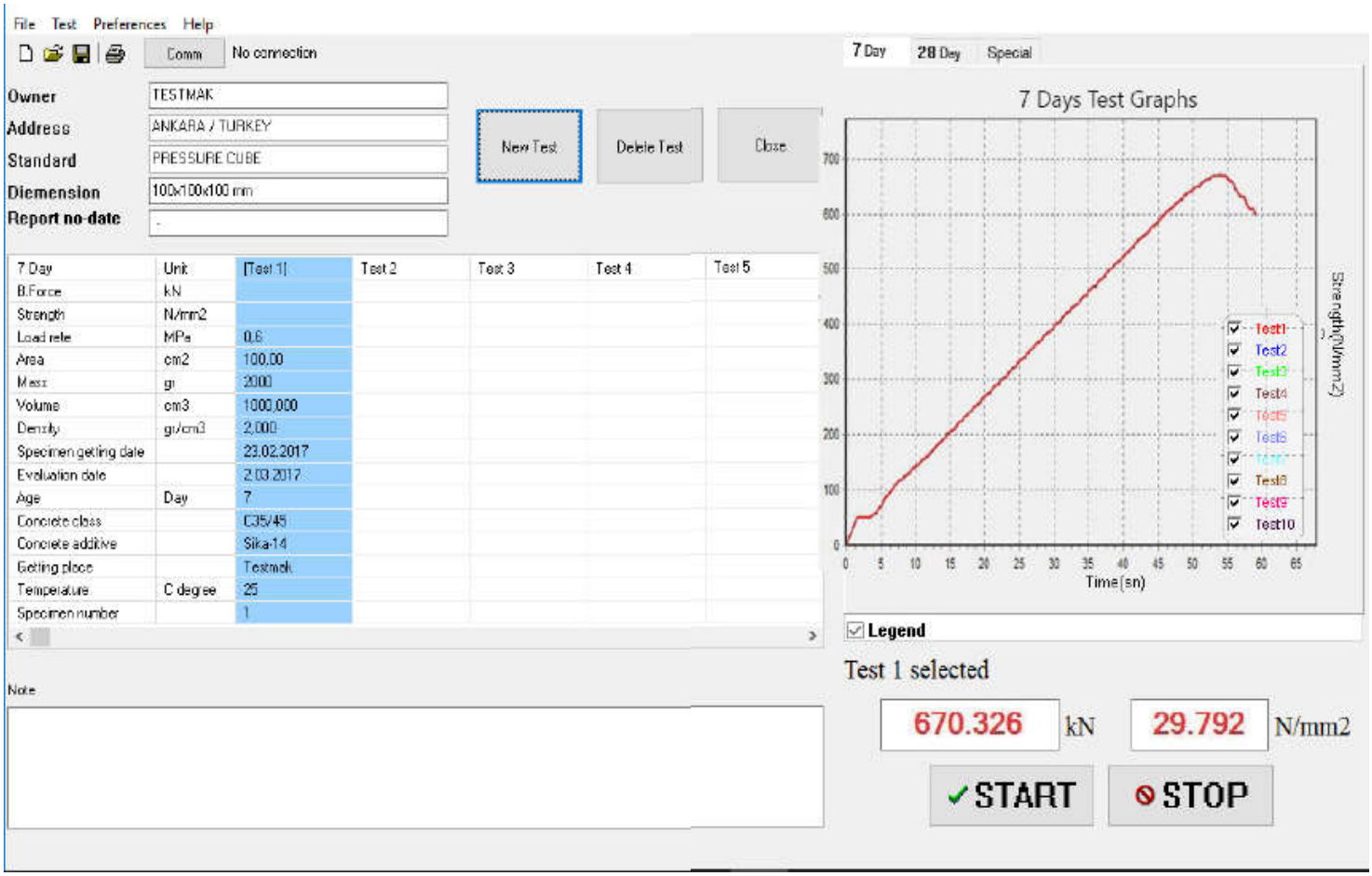
SOFTWARE

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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