

CONCRETE
PRODUCT BROCHURE

CONCRETE RAILWAY SLEEPERS & BEARERS
STATIC TESTING MACHINE

C5600





PRODUCT MODEL

C5600 Concrete Railway Sleepers and Bearers Static Testing Machine, 600kN Capacity - 220-240 V 50-60 Hz

STANDARDS

Standards EN 13230-2, EN 13230-3 and EN 13230-4

INFORMATION

Manufacturer TESTMACLAB LABORATUVAR TEST CIHAZLARI PAZ. VE DIŞ TIC. LTD. ŞTİ

Country of Origin TÜRKİYE

Product name Concrete Railway Sleepers and Bearers Static Testing Machine

DESCRIPTION

Concrete Railway Sleepers and Bearers Static Testing Machine, has been designed basically to perform static tests according to EN 13230-2, EN 13230-3 and EN 13230-4 (Prestressed monoblock and twin-block reinforced sleepers and bearers tests) and also low vibrating track system (LVT-System) tests.

The machine consists of a testing frame with accessories and Advanced servo controlled hydraulic power pack, control electronics and a data acquisition system are also build in power pack unit. Main differences between static and dynamic test systems are the loading actuator and power pack.

The Testmak C5600 capacity of the frame is 600 kN. Load cell is used for load measurements to have better accuracy. The frames is supplied complete with test sample carrying and holding apparatus for easy test setup, upper and lower Articulated supports for static tests. Moreover this system may perform three and four point flexure test on concrete beams.

The load frame is a four column design carrying the piston fitted to the upper crosshead. The frames has a double acting stroking piston with over travel switch protection to shut the machine down when maximum piston travel is reached. A 600 kN Capacity load cell is used for load measurements on the frame.

The maximum oil flow is 2 liters per minute, at 300 bar pressure. Accuracy of the system is 0.1 kN and minimum controllable load is around 10kN. Control unit can be connected to the computer through USB for advanced test cycles, data acquisition and reporting. All the calibration values of the transducers and also all the test parameters for the last test is automatically stored on the control unit. Power pack incorporates a pressure safety valve and a cooling unit.

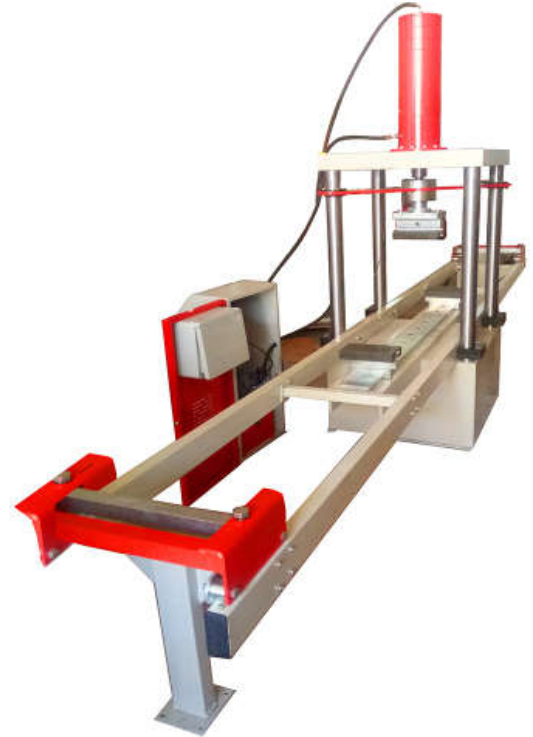
Characteristics:

- High stability four column design
- 400 mm piston stroke with safety limit switch
- High accuracy load measurement with strain gauge load cells
- Can accept wide range of accessories for mentioned standards
- The distance between lower rollers can be set up to 2000 mm
- Can be connected to any TESTMAK compression machine or TESTMAK power pack

Automatic Power Packs with Proportional Valve, are advanced power packs with P.I.D. closed loop control. They can perform tests under load and displacement controls. The frequency of the P.I.D controller and data acquisition is 1000 Hz. Power pack is designed to supply the required oil to the load frame for loading and unloading. All the operations of Data Acquisition and Controls System can be controlled from the touch screen front panel of a 800x48 pixel LCD display or computer. There are total 4 analogue input channels. One is used for load cell and remaining three analogue channels can be used for other sensors such as LVDT's, strain gauges, built in the system.

TECHNICAL SPECIFICATIONS

| | |
|--------------------------------------|---------------------------------------|
| Capacity | 600 kN static |
| Load Measurement Accuracy | +/- 1 % from 1 % of the full capacity |
| Resolution | 1/256000 |
| Piston Stroke | 400 mm |
| Max. Vertical Clearance | 930 mm (Without accessories) |
| Max. Horizontal Clearance | 640 mm |
| Upper Rollers | 2 Qty Diameter: 38 mm x 160 mm Length |
| Lower Rollers | 2 Qty Diameter: 38 mm x 160 mm Length |
| Max. Clearance Between Lower Rollers | 2000 mm |
| Dimensions | 990x7690x2550 mm (Installed) |
| Weight | 2600 kg |



LCD DATA ACQUISITION & PC SOFTWARE

CONCRETE RAILWAY SLEEPERS & BEARERS STATIC TESTING MACHINE can be controlled by a computer with the software (given free of charge by TESTMAK). The advanced functions for data base management provide an easy navigation of all saved data. The test results certificate includes all descriptive information. Therefore, test parameters can be set and details about the test carried out such as client details, test type, specimen type, user info and other information required can be entered and printed out as well as test report and graph.

The software is developed for making test respect to EN 13230 standard. On the software there are submodules for making test on LVT samples, positive negative bending tests on sleepers. Loading rates, dwell times, delays and unloading are performed as in standard.

The software also includes an easy calibration check facility. The machine gives some constant load values and waits there for easy check mechanism. As standard requires the pace rate of 2kN/sec is suggested, but user can modify the test rate. For each type of different tests an easy report generation is available.

Data Acquisition Control

- 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 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 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 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.

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



Test Parameters

F [1]

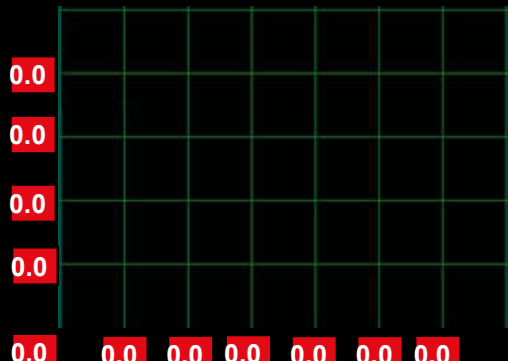
6


Test nr:


Fmax


s.


Set Speed






















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.

Stop 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.

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 Parameters

F [1] 0.0

6 0.0

Test nr: 0.0

Fmax 0.0

s. 0.0

0.0

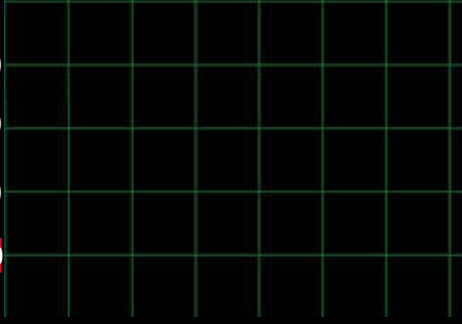
Set Speed 0.0

0.0







0.0

0.0

0.0



0.0
0.0
0.0
0.0
0.0
0.0
0.0



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.

Test Results 1

| No | Sample | Fmax | 6 (Mpa) | (s.) |
|----|--------|------|---------|------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |











SOFTWARE

The software is developed for making test respect to EN 13230 standard. On the software there are sub-modules for making test on LVT samples, positive negative bending tests on sleepers. Loading rates, dwell times, delays and unloading are performed as in standard.

The software also includes an easy calibration check facility. The machine gives some constant load values and waits there for easy check mechanism. As standard requires the pace rate of 2kN/sec is suggested, but user can modify the test rate. For each type of different tests an easy report generation is available.



THANK YOU

FOR CHOOSE US

Dear business partners, thank you very much for believing in us and recommending our products to your customers; We sincerely believe that our company will grow even more thanks to you, our esteemed business partners.

You can reach us than our phones or e mail address 24 hours a day.

CONTACT US



Ağaç Metal Sanayi Sitesi 1354 Cadde
1436 Sokak No:16 İvogsan Yenimahalle -
ANKARA / TÜRKİYE



info@testmak.com
marketing@testmak.com



TÜRKİYE / HEAD Office : +90 312 395 44 57
UKRAINE Office : +380 63 741 29 20
SOUTH AMERICA / Cuba Office : +53 5 073 96 12



www.testmak.com