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Manual
Material Tester
PCE-HT 225E



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1 Introduction

The digital concrete test hammer PCE-HT-225E is a device with digital display and voice function. It is a high-tech product which has been tested specially for concrete compressive strength when the material even with a low compressive strength must not be damaged. The digital test hammer is suitable for quick and easy determination of concrete strength and hardness of building materials. The digital and voice function enables a high number of tests with better quality results.

2 Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. There is no warranty of damages or injuries caused by non-observance of the manual and safety notes.

- The device and its accessories should be used according to the manual.
- The device should be protected from water, form falling, from strong external pressure, explosions and high temperatures.
- The circuit of the unit should not be removed or changed.
- The replacement of the batteries or the internal circuit should be performed by a qualified person.
- Always use the device with both hands.
- During the calculation of the test values errors can occur due to algorithmic rounding and inaccuracies. If the values of the device and self-calculated values differ a lot, take the self-calculated values.
- The device should to be used and stored with great care.
- The device itself should not be located close to strongly magnetic environments.
- If the device is damaged, switch it off immediately and contact the manufacturer.
- The test intervals must not be less than one second as this could lead to accuracy errors.

This user's handbook is published by PCE Instruments without any guarantee.
Failure to comply with these operating instructions and the disregard of safety will void the warranty.

We expressly point to our general guarantee terms which can be found in our general terms of business.

If you have any questions please contact PCE Instruments.

3 Specification

Nominal kinetic energy	2,207 J (2.207 Nm)
Spring constant	785 N/m
Elongation of the spring	75 mm ±0.3 mm
Average rebound value	80 ±2
Radius of the spherical tip	25 mm ±1 mm
Adhesion of the measurment tip	0.65 … 0.15 N
Interface	USB 2.0
Memora capacity	Memory for more than 200 standard components
Display	LCD 176 x 220
Power supply	1 x 3.6 V rechargeable Lithium battery
Weight	1.1 kg
Dimensions	ø 54 x 280 mm

3.1 Delivery

1 x concrete test hammer PCE-HT-225E

1 x carrying case

1 x USB cable

1x grinding stone for smoothing the rough surfaces

1 x software

1 x user manual

4 Instructions

4.1 Structure





4.2 Switching on

Press and hold the power button (red button) until the welcome display appears. If the battery is completely disacharged, the internal clock must be reset. A window will open automatically.



4.3 Operation

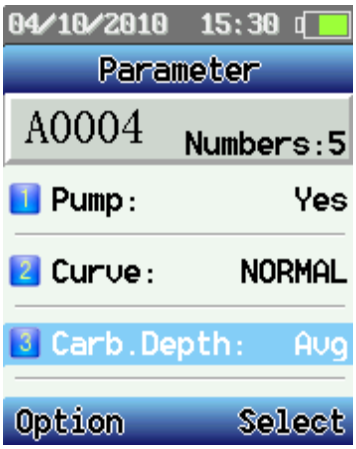
During operation, Power is the main button used to return or stop, unless there is something else on the screen. OK is to confirm the operations.

Menu and functions:

[Sampling]:	Surface for entering the parameter settings; in order to enter parameters for new components and start the recordings.
[View Data]	Review or deletion of the tested data.
[Setting]	Functions and system settings
[Communication]	Only if you have selected this, you can connect the tester to the computer.
[Shut down]	Turns off the device with the software. Manually it works with the Power button.

4.3.1 Measurement instructions

Select the main menu [sampling] and press OK to open a window [parameter] to set the next test components. The components number is created by the device automatically.
The following settings are possible:
• Pump marking (“pumping marker”): Select with the left or right arrow key. When you have pumping concrete, select "Yes".
• Measuring curve ("curve"): Set a suitable curve.
• Carbonation depth: set a carbonation depth.



Press Power to enter the options menu. There are various options:
• [sampling]: when you are in the Options menu, then select "Sampling" and press OK.





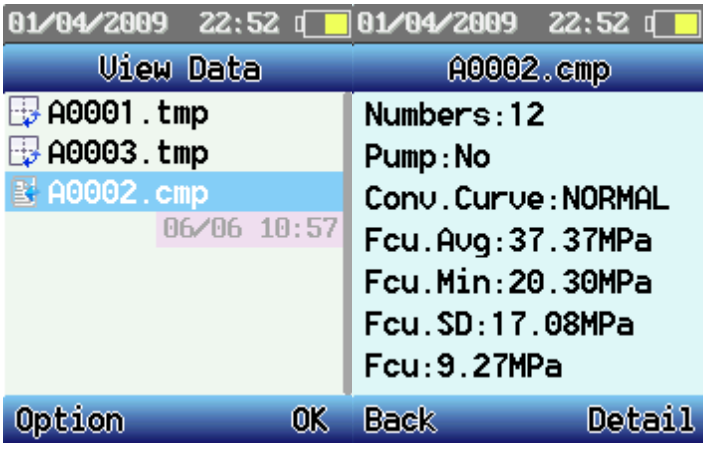
Go into the [Sampling] selection to start the measurement. When you measure the impact direction, impact angle and carbonation depth, press Set – now you can set the parameters, change or delete the last recorded value.



• [Carb. Depth]: When you are in the parameter menu, go to [Carb. Depth] using the arrow keys; with their help you can select the carbonation depth and confirm with OK. When the carbonation depth input mode is set to "Avg" (incomplete carbonation depth values are allowed but must be not less than 30%) and the test areas have differences in carbonation depth values of more than 2 mm, then the device warns you and asks if you want to select the carbonation depth. You can suppress this message by pressing Exit and change the values chronologically.
• [Calculate]: When you have recorded one component, you go back to the Options menu. Here you select [Calculate]. Then you can save the recorded data and the calculated results (with file extension .cmp). After saving, the device skips to the next component. If you want to continue with the measurements, then press Power.
• [Save Component]: Save a temporary file without calculation. (file extension: .tmp)
• [Quit]: you go back to the main menu.

4.3.2 How to see the measurements values

Here you can see the recorded data again.



Select a component by pressing OK and press Detail to see the details.



If you select the option, you have the following possibilities:
• Add Data: Press OK to go to the [Parameter] menu. There you can add data or change the parameters for the test components.
• Del Component: deletes the current components
• Del All Component: deletes all of the components that are on the device
• Print: Prints the data of a component via a portable printer. Aim the infrared LPT of the device at the infrared interface of the printer, which must be located within 0.8 meters. For larger distances printing fails.
• Quit: back to the main menu

4.3.3 Settings



• Lower Limit: sets the lower limit for permissible values
• Higher Limit: sets the upper limit for permissible values
• Backlight: adjusts the screen brightness. Reducing the brightness prolongs the battery life
• Volume: adjusts the volume of the voice function. Reducing the volume extends the battery life
• Auto Off: Sets the auto power off after a prolonged disuse. This helps to preserve the batteries (this setting does not take place while the device is in a recording mode)
• Sensor Adjust: If there are discrepancies between the digital and analog display, or when you have replaced the mechanical parts, you should adjust the zero point. When you calibrate the steel anvil, you can adjust the display value using the arrow keys till both values match. Then press "Safe" to save the adjustment or press "Back" to cancel it.
• Setting Time: sets the time.
• Product Info: Here you can view the information about the device: device number, serial number, inspection number, memory capacity etc.

4.3.4 Communication

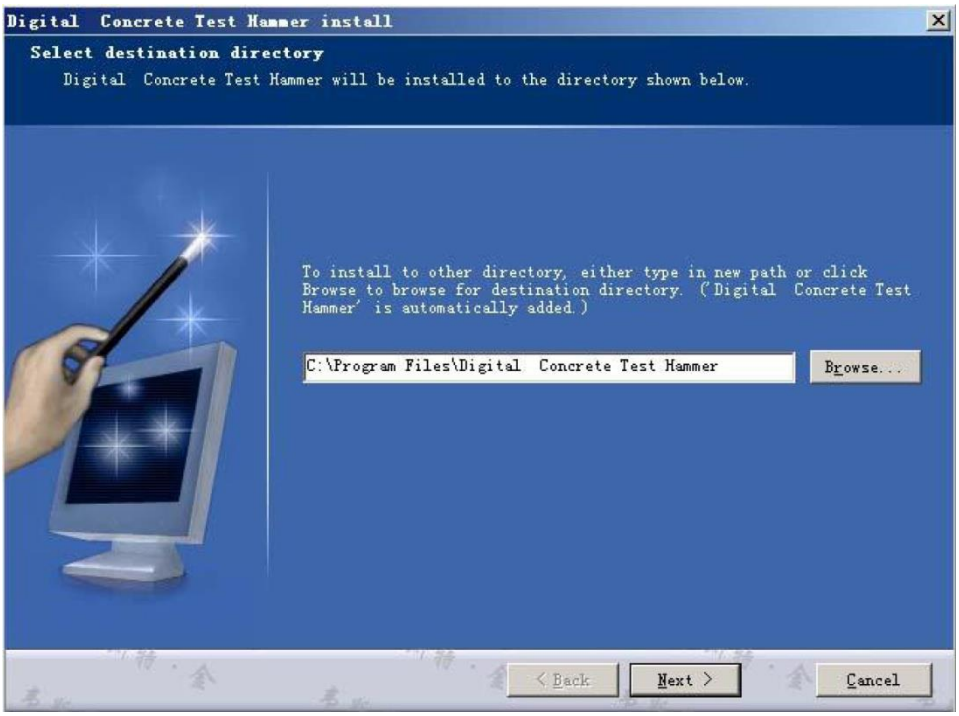


With this function the device is displayed as in USB stick. The computer can upload and download the data and measurement curves from the device.

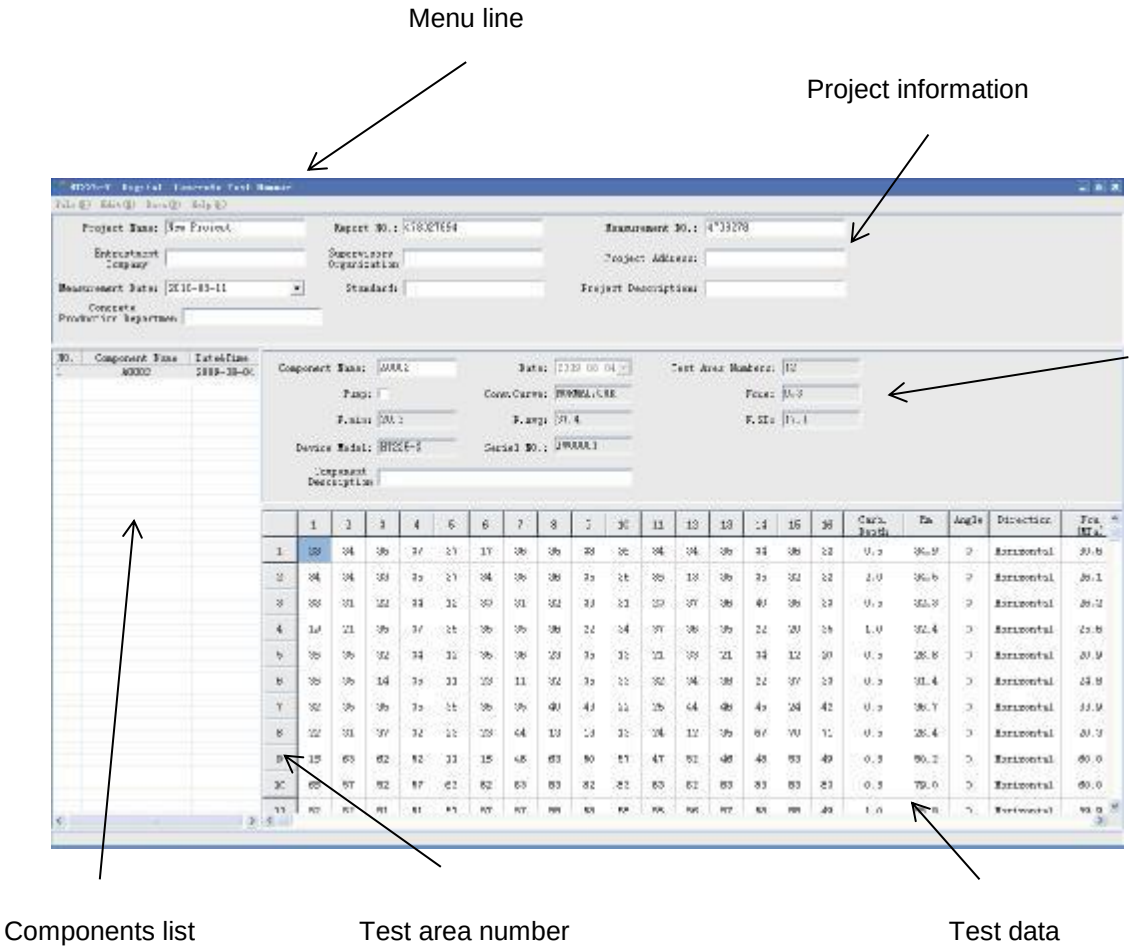
5 Software

5.1 Installation

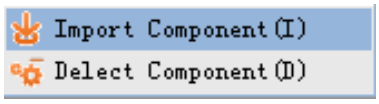
Insert the CD into your computer and follow the instructions.
Double click on the Setup program, then select the target folder. The installation is finished.



5.2 Operation



The program allows you to:
1. start a new project – click [New] in the [File] menu
2. open an existing project – click [Open] in the [File] menu
3. Import the component data – make a right click in the component list. Then a dialog window appears. Select "Import Component".



Now you can open the data from your computer or from the test instrument (if the device was connected to the computer). The component data are displayed in the component parameters. You can also add and edit them.
4. Delete component data – make a right click on a component. Then a dialog window appears. Select "Delete Component". Now the component is deleted from the project.
5. Print – you can print the test data. Click [Print] in the [File] menu. This will open the printer settings window.

6 Disposal

For the disposal of batteries, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

If you have any questions, please contact PCE Instruments.



7 Contact

If you have any questions about our range of products or measuring instruments please contact PCE Instruments.

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