TEPEX

The straight burden checker

INSTRUCTION MANUAL

LASER PROFILER - TABLET

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A - INSTRUCTION MANUAL OF LASER-TABLET PROFILER

I - MATERIALS NEEDED

The Laser-Tablet profiler is composed of :

- a « TruPulse 200 » precision laser rangefinder,
- a tablet « PA7 » set in English language and provided with « profiling » application,
- a Micro SD card.

II - START UP

Bluetooth with automatic connection

II A - Bluetooth activation on the laser rangefinder

- Press the <FIRE> button **(1)** to turn on the rangefinder.
- Press the button ▼ **(3)** for four seconds ; « UnitS » is displayed.
- Press button ▲ **(2)** once to display the « bt » option.
- Press the <FIRE> button to enter the Bluetooth menu.
- Press button ▼ or ▲ to display « bt_on ».

Bluetooth is now activated.

At each start-up, the laser rangefinder takes the last Bluetooth configuration used.

Information *:*
with Bluetooth enabled, the laser range finder automatically turns off after 10 minutes of inactivity. This is a long time and the battery load level decreases.

It is therefore preferable to stop it once the measurements have been made by pressing the ▲ and ▼ buttons until the display disappears in the laser. Preferably use two 1.5 V lithium batteries (or one CRV3 battery).

Important : before any measurement, check that the laser stays horizontal on its tripod

II B - Bluetooth association procedure

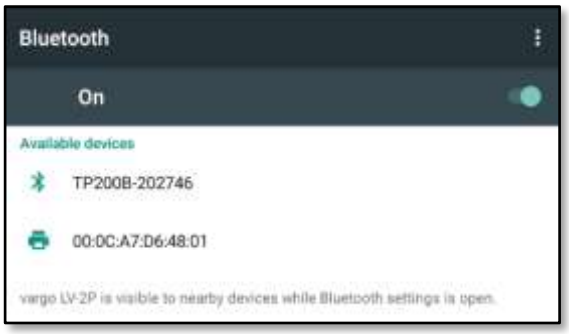
1

Turn on the tablet **(1)** and start the application ⇒

(on screen).

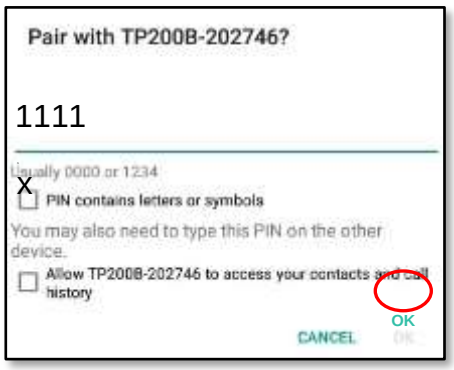
If Bluetooth is not enabled, the application prompts for activation.

If no Bluetooth device has been previously associated, the application automatically opens the Bluetooth settings and the combination of « laser rangefinder → tablet » can be performed.



Proceed to the association by clicking in the list of Bluetooth devices on the laser rangefinder with the name « TP200B-XXXXXX » where XXXXXX is its serial number (here 203706).

A window opens ; enter a PIN.



Type 1111, check the first option and click OK.

The laser appears in the associated devices.

Press the back button (◀ bottom left of the screen) to close the Bluetooth settings on the tablet and return to the profiling application.

III - REINSTALLING THE APPLICATION

During a new installation, the application requires several permissions absolutely necessary for its proper functioning.

Simply allow the requested permissions when the application makes the request by pressing « **ALLOW** »

IV - USE OF THE APPLICATION

IV A - MAIN MENU

Three possibilities are offered on the homepage :

1. To profile, click on the Bluetooth laser you want to use in the list and follow the profiling section of this manual.

2. The opening of an existing profile is done by pressing the « **OPEN AN EXISTING FILE** » button.

   During the first press, the application will ask for read permission on the Micro SD card.

3. Finally, the button « **ADD LASER** » allows to add a Bluetooth device, for example a replacement laser.

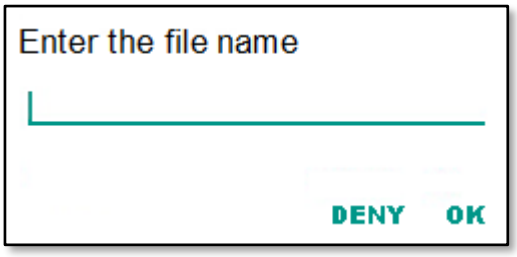
   After pressing this button, refer to the « Bluetooth Association Procedure » above.

In general, follow the instructions highlighted in yellow to perform profiling.

IV B - Application « Profiling »

Step 1 : enter the filename

After clicking on the name of the Bluetooth device in the main menu, a screen appears when connecting the tablet and the laser rangefinder. When the connection is established, the reference measurement screen appears and asks for the name of the job file for the profile.



This file will be saved on the Micro SD card installed in the tablet.

The file name is automatically complemented by the current date. For example if the user says « test » the file name will be :

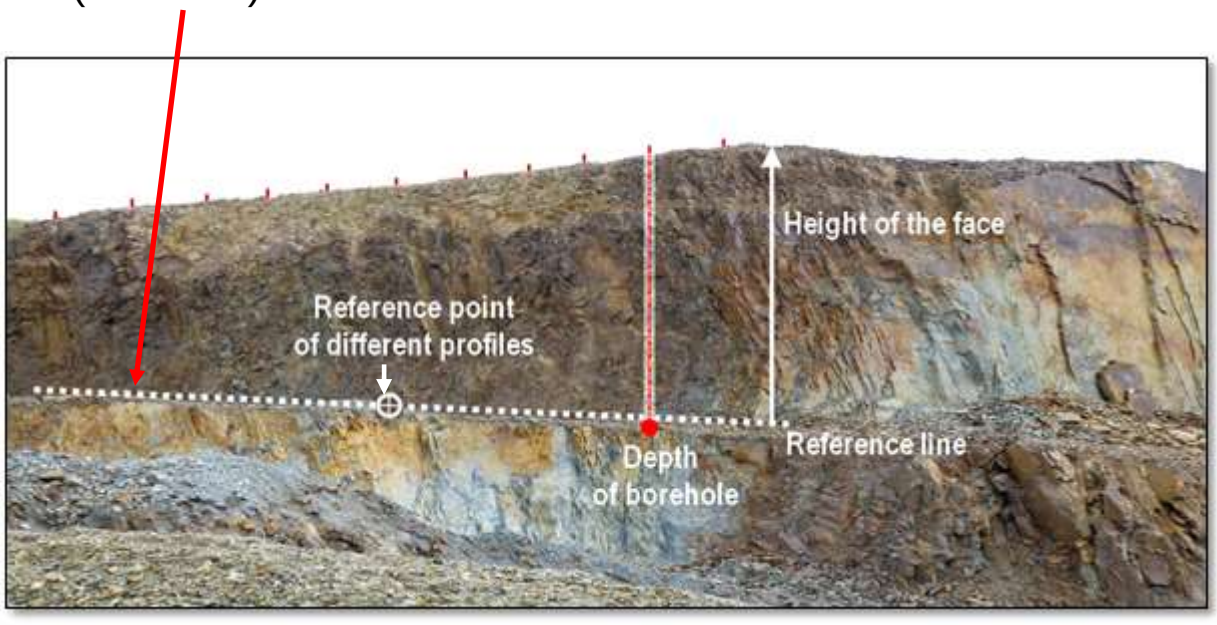
test_jj_mm_aaaa.log

Step 2 : setting of the height reference

All the profiles are bound to a reference level.

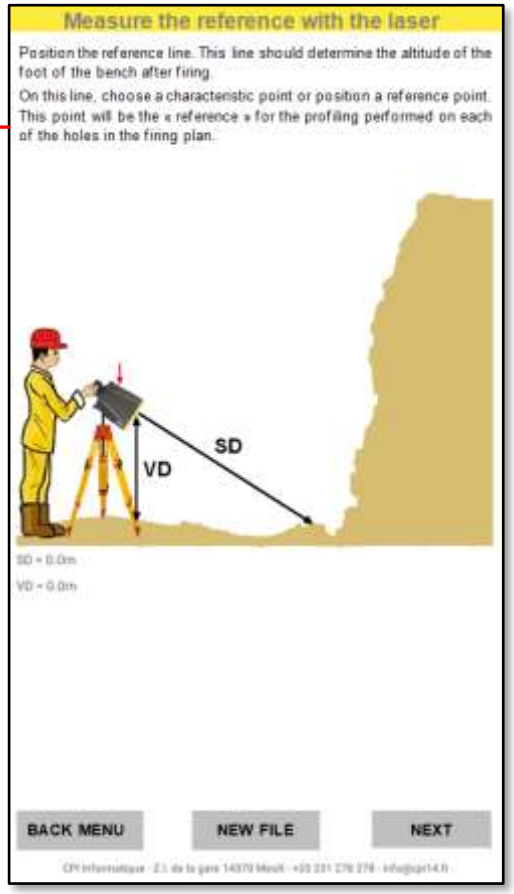
(All heights measured points are referenced to this level 0 - ⊕ on the picture below)

The calculation of the depth of each hole will be linked to the searched mark (mark line).



Position the reference line. This line should determine the altitude of the foot of the bench after firing.

On this line, choose a characteristic point or position a reference point. This point will be the « reference » for the profiling performed on each hole in the firing plan.



- Aim at the reference point and press the <FIRE> button of the rangefinder until you hear a beep (+ vibration of the tablet) **(1)**. Check the consistency of the measurement on the display screen.

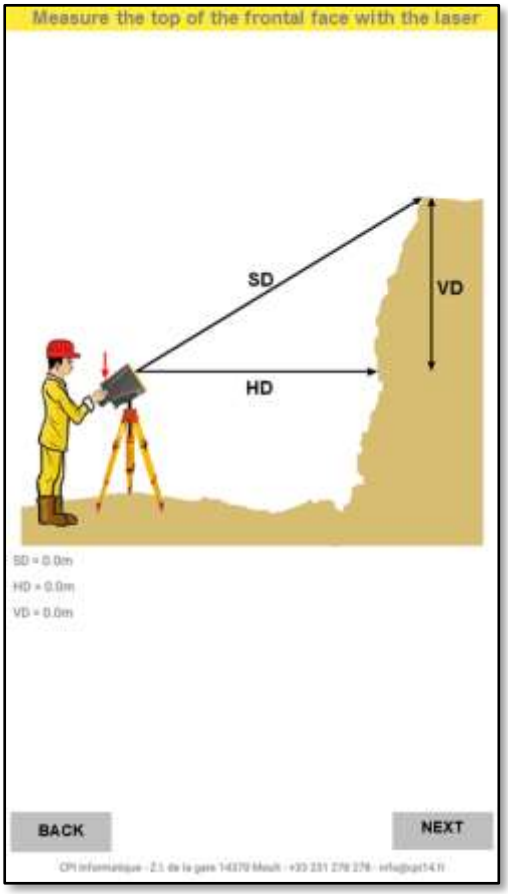
  (1) To hear the beep sound, go to Settings ⇒ Sound and check that the « **Alarm volume** » est au maximum is at maximum (cf. the user's manual of the tablet)

- Press the « **NEXT** » button to proceed to the next step.

Description of the buttons :

- The « **BACK MENU** » button is used to return to the main menu of the application.
  - The « **NEW FILE** » button is used to change the name of the job file for future profiles.
  - The user enters « profil1 » as file name, measures a profile and saves.
  - The reference measurement screen is displayed again.
  - The user presses « **NEW FILE** » and enters « profil2 », measures a profile and saves.
  - There will be two files « profil1_jj_mm_aaaa.log » and « profil2_jj_mm_aaaa.log », each containing a profile.
- The « **NEXT** » button allows to proceed to the next step.

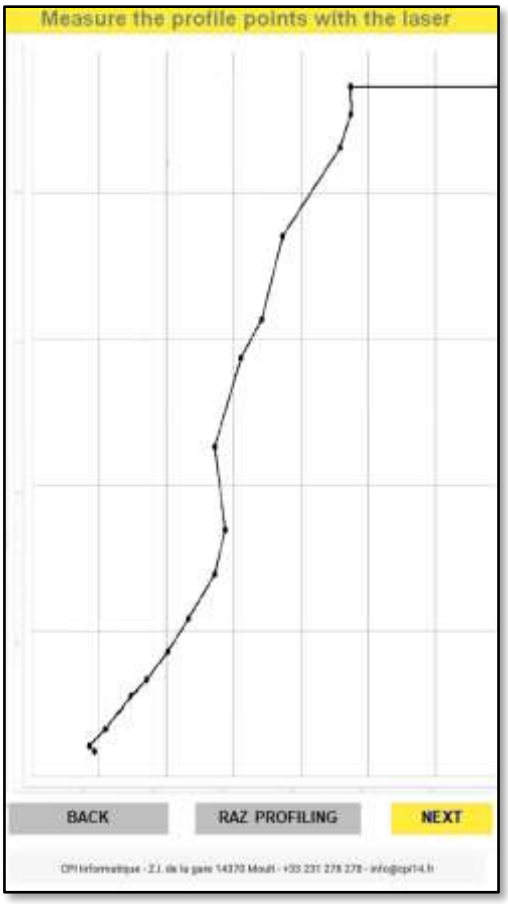
Step 3 : measure the crest of the face



- Aim at the reference point and press the <FIRE> button of the rangefinder until you hear a beep (+ vibration of the tablet). Check the consistency of the measurement on the display screen.

- Press the « **NEXT** » button to go to the next step or the « **BACK** » button to return to the previous step.

Step 4 : profiling



- Profiling is done from top to bottom.

  To insert a measuring point, aim it and press the <FIRE> button of the laser until you hear a beep.
  The absence of « beep » means that the software has not received the information. Repeat the operation.

  150 measuring points can be recorded to represent a profile.

Description of the buttons:

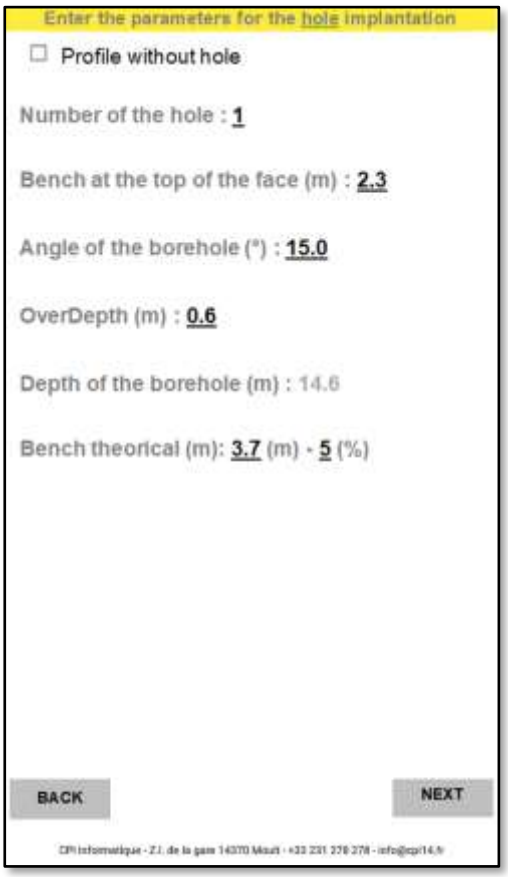
- The « **BACK** » button returns to the previous step
- The button « **R.A.Z. PROFILING** » allows to erase the last point or to completely start the profiling.

- The button « **NEXT »** leads on the next step

Step 5 : enter the characteristics of the borehole

- Enter the values by successively typing in the editable zones.
- To implant a borehole, enter the value of the depth of drilling.

  The depth (or length) of the hole is calculated automatically based on the drill angle and measured height of the face.



Description of the buttons:

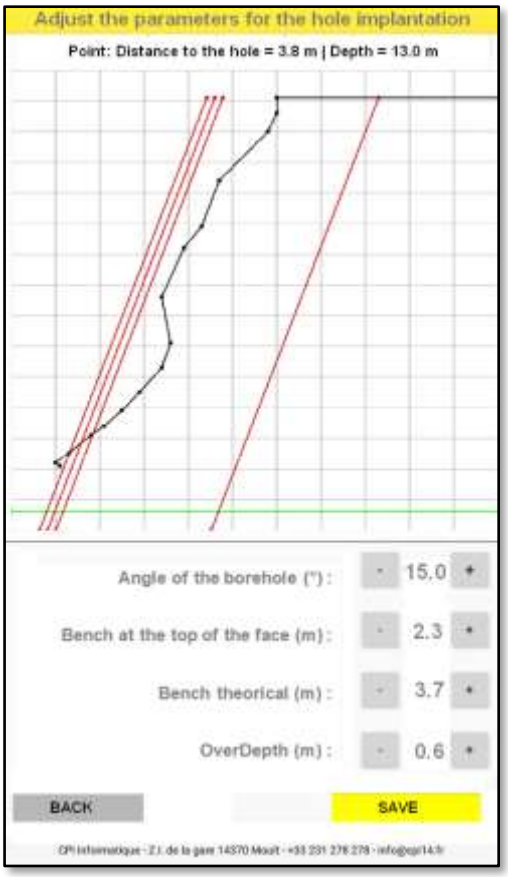
- The « **BACK** » button is used to return to the previous step.
- The « **NEXT** » button moves to the next step.

Step 6 : display of the profile

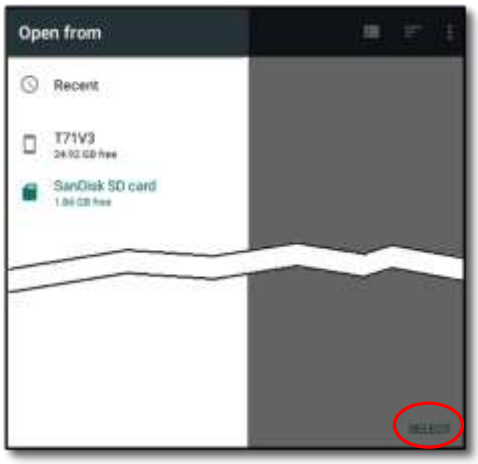
- Change the values by pressing the **-** and + buttons of the parameters.

  Note : a press on the profile displayed on the screen gives the depth and distance from the point to the mine hole.

- Press « **SAVE** »



If no profiling has been recorded on the Micro SD card, the following screen is displayed :



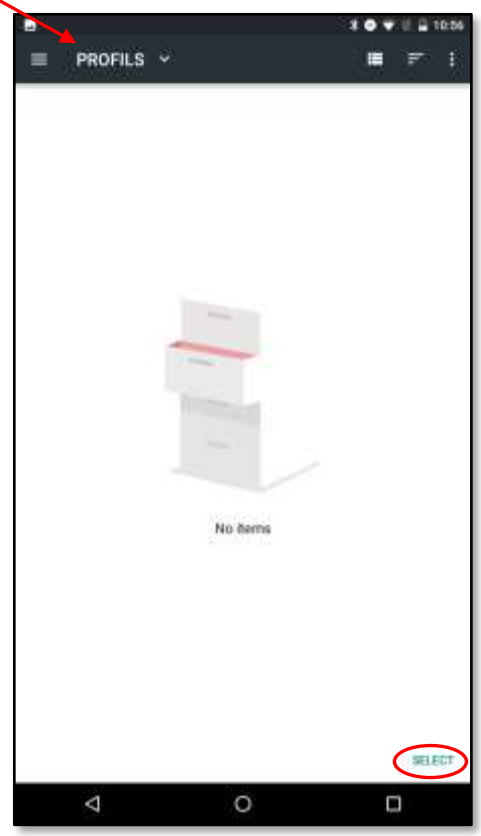
Press « **SELECT ».**

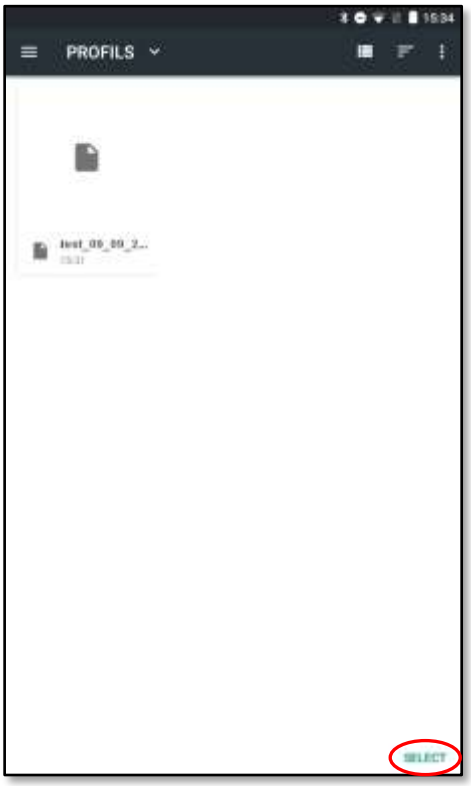
A second screen appears. Select the PROFILS folder on the SD card when a file explorer is displayed.

Press « **SELECT ».**

The backup is done...

When profiles are already registered on the tablet, the screen below





Press « **SELECT »** to save the file.

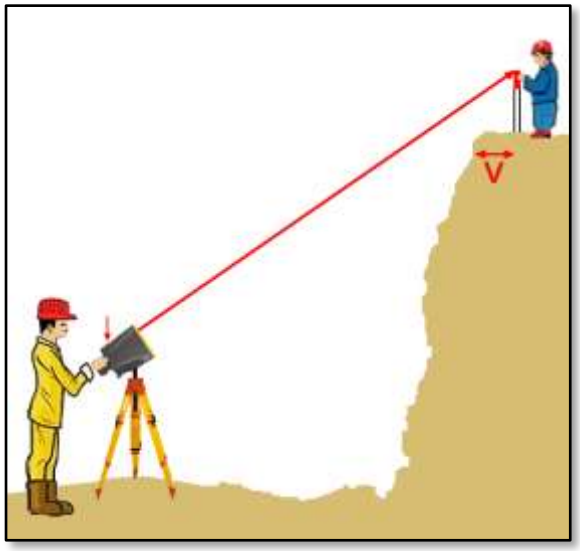
Description of the buttons:

- The button « **BACK** » returns to the previous step.
- The « **SAVE** » button saves the profile in the « **PROFILS** » folder and then displays the « Measure reference with laser » screen (see step 2).

Step 7: marking on the ground the borehole

(operation independent of the profiling)

The attendance of a second operator and the use of a reflector target are necessary.



- For this measurement, aim at the target and press the button « FIRE » of the laser. The value appears in the view finder.
- The operator on the top of the face , according to the indications of the other operator, moves forward or back to put the target at the distance **V** selected point 6 (3,7 m on screen above).

IV C - Opening of existing profiles

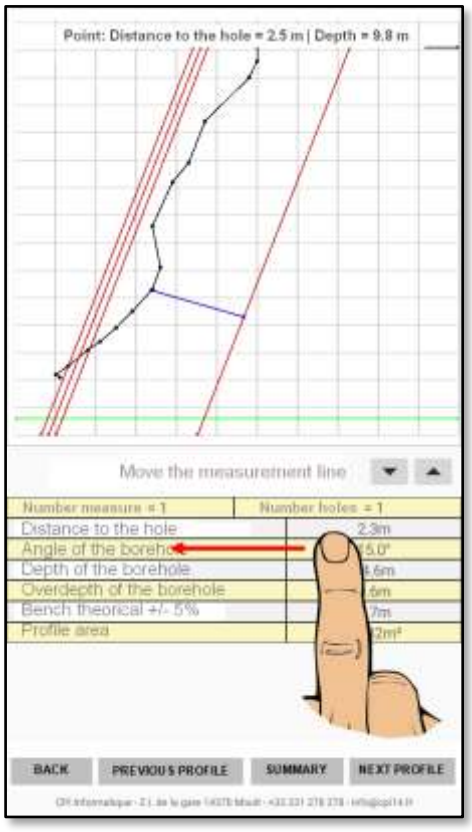
Click on « **OPEN AN EXISTING FILE** » in the main menu.

A screen appears with the list of files present in the PROFILS folder of the Micro SD card.

Click on the name file to open it (it's possible to scroll through the list by dragging a finger on the screen).

The application opens the profile contained in the selected file.

It is then possible to navigate in the profiles with the buttons « **PREVIOUS PROFILE** » and « **NEXT PROFILE** ».



By screen pressing, the application displays the depth and distance of the point at the blast hole.

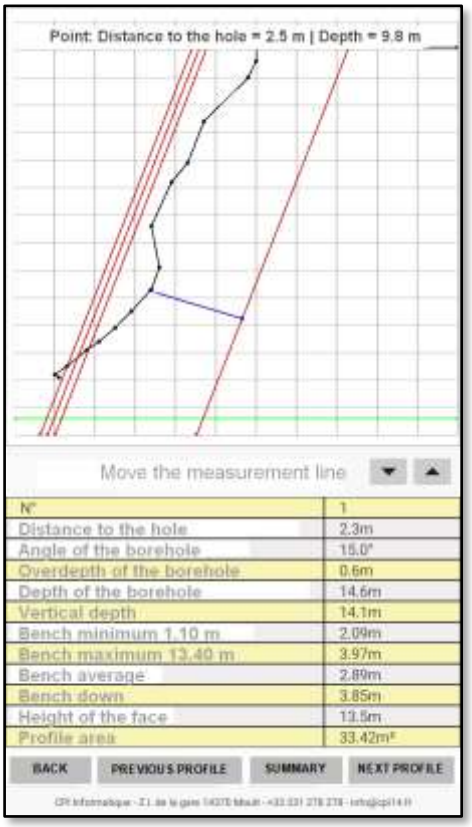
The measurement line can be moved with the ▼ and ▲ buttons.

It is possible to display different information by sliding your finger from left to right.

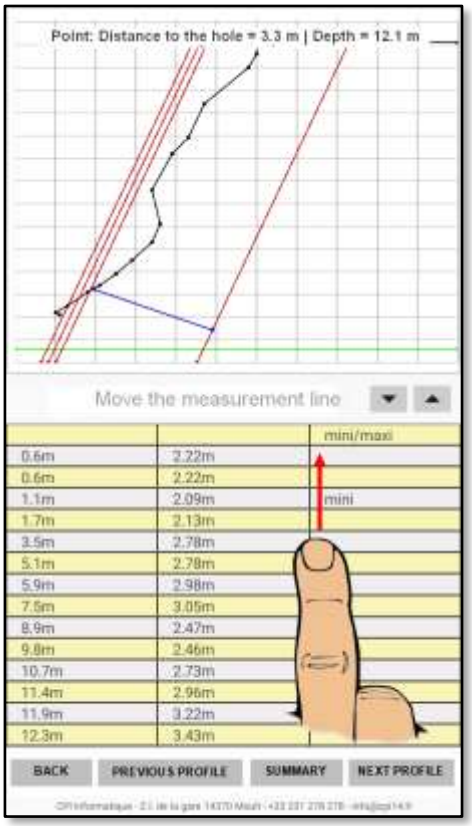
The « **SUMMARY** » button allows you to quickly have information on the seat, the depth and the drilling angle of all the profiles contained in the file.

Finally, the « **BACK** » button returns to the previous screen.

Profile Information

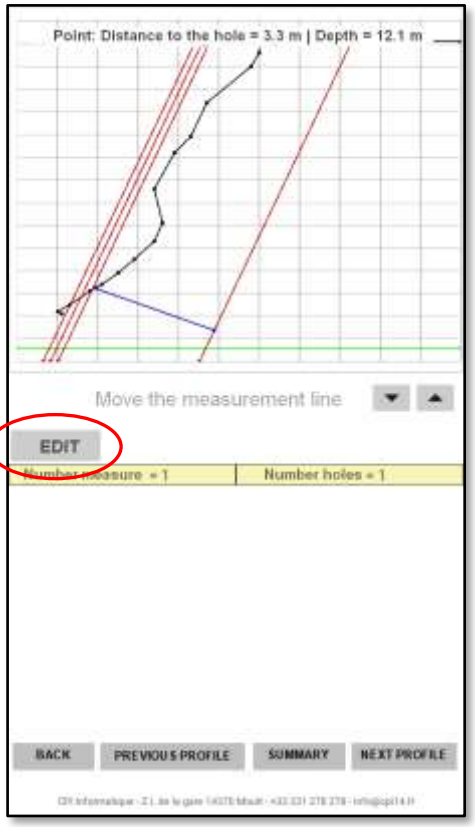


Screen 2



Screen 3

Scan the table by moving the finger



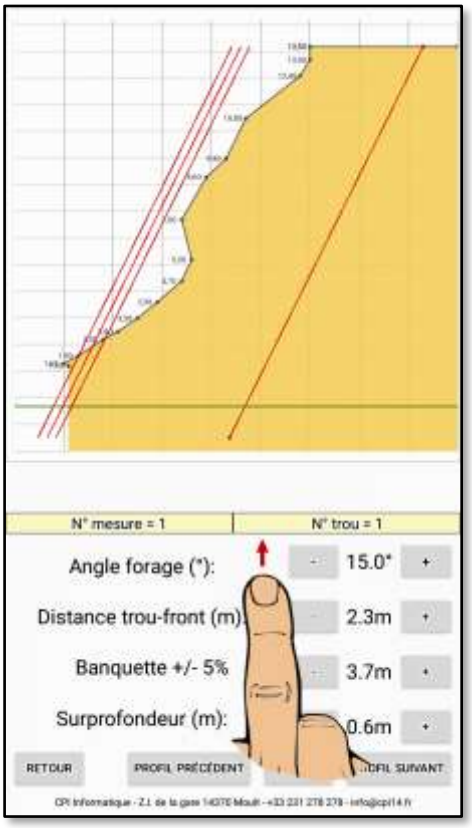
Screen 4

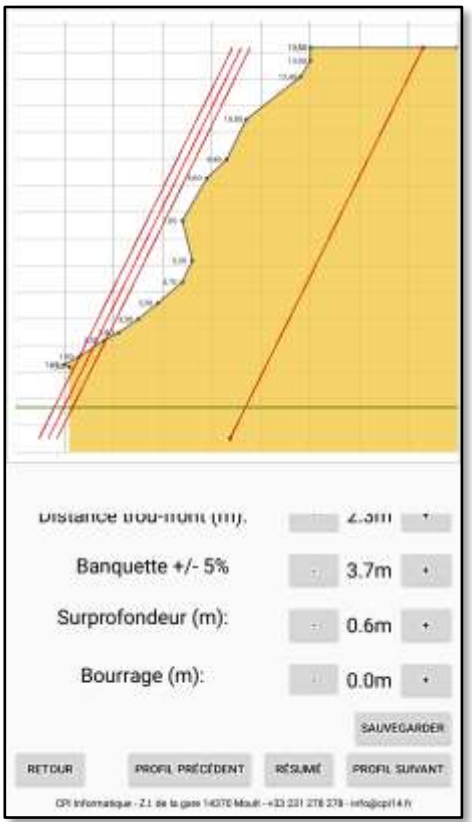
Slide your finger from right to left to go from screen 2 to screen 3 and then from screen 3 to screen 4.

⇒ Pressing « **EDIT** » takes you to screen 5.

(see next page)

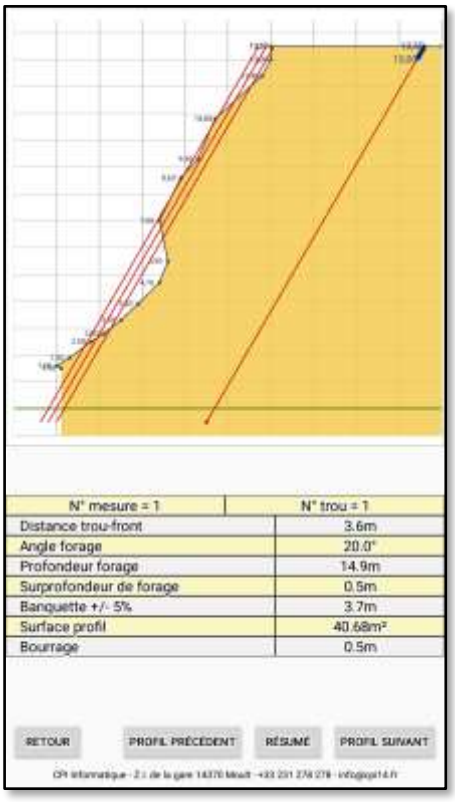
Screen 5 : EDIT

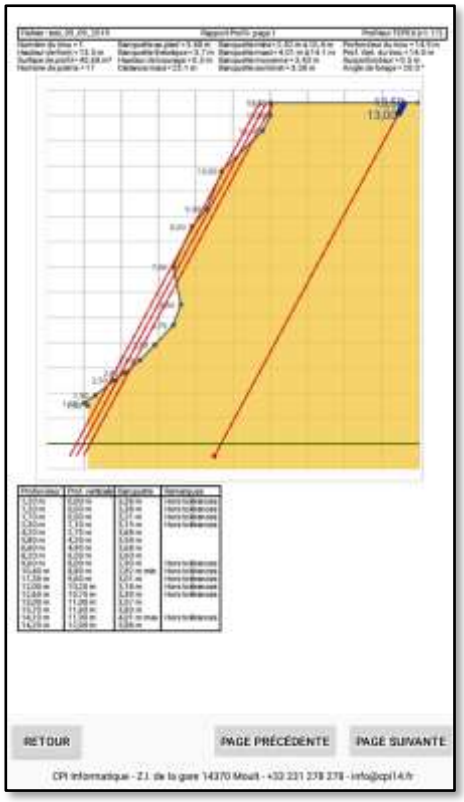




The values relating to the drilling angle, the hole-to-front distance, the bench seat, the over-depth and the filling height at the top of the borehole can be modified by pressing the - and + buttons.

By pressing the « SAVE » key, the modified values are saved as well as the report in « pdf » format.





Report in « **PDF** » format

V - TRANSFERRING FILES TO A COMPUTER

To transfer the files, connect the tablet to a computer with the supplied USB cable.
If necessary, unlock the tablet (icon at the bottom of the screen). Slide your finger towards the top of the screen.

Then, slide your finger from the top of the screen. A menu appears ...

Press it for more options, then choose « Transfer files »

Once the manipulation is done, launch the file explorer on the computer and navigate on the Micro SD card. The files are in the PROFILS folder.

They can then be copied to a dedicated folder of the PC for operation thanks to the « optimization and editing profiles software » (see Part B below).

B - ANNEX

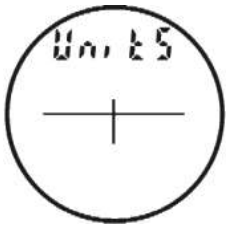
TILT SENSOR ALIGNMENT

The tilt sensor is aligned during assembly.

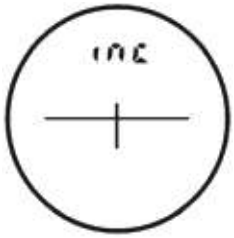
In the rare event that the laser telemeter suffers a severe drop shock, refer to the instructions below to re-align the tilt sensor.

1 From the Measurement Mode, press ▲ for 4 seconds to access the System Setup Mode.

« **UnitS** » will appear in the Main Display.



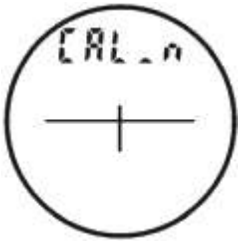
2 Press ▲ to display the « **inc** » option.



3 Press FIRE to select the « **inc** » option.

The message « **CAL_n** » appears in the Main Display.

Press ▲ or ▼ to display the previous or next « **CAL** » option.



A If « **CAL_n** » is displayed, press FIRE to exit the « **inc** » option and return to the Measurement Mode

B If « **CAL_Y** » is displayed, press FIRE to align the tilt sensor.

The message « **CAL_1** » appears in the Main Display

4 Place the laser telemeter on a flat horizontal surface. Position the TruPulse on a flat, as shown in Figure #1. Use one finger to hold the front of the unit is flat on the surface (indicated by the arrow in Figures #1 and 2). Keep the finger in place and do not lift the laser telemeter until the end of step 7.

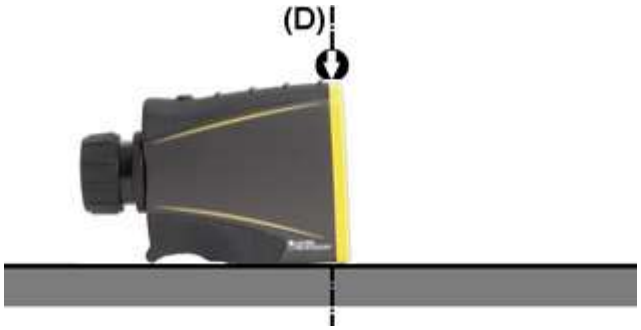


Figure #1

5 Press FIRE to store the first inclination measurement.

The message « **CAL_2** » appears in the Main Display.

6 **Important** - Without deplacement and in permanent contact with the support, rotate the telemeter 180° about the axis (D) and holding the finger at the arrow [cf. Figure #2 below].

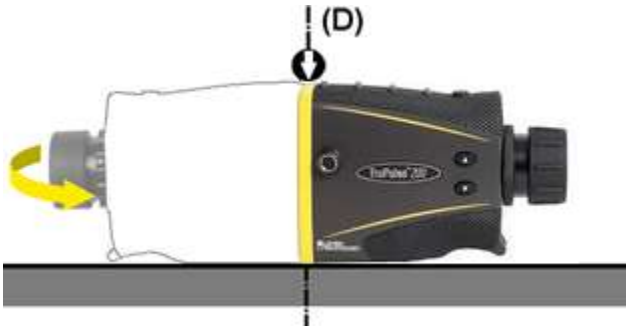
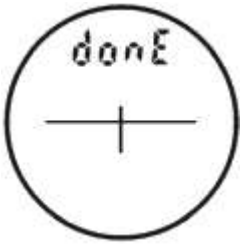


Figure #2

7 Press FIRE to store the second inclination measurement and complete the zero offset correction.

The message « **donE** » appears in the Main Display.



8 Press FIRE to clear the « **donE** » message and return to the Measurement Mode.