

# VISIOTEST

## USER GUIDE



### VOH SA

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V9.0, 06.07.2018



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### Track changes :

Version	Date	Written	Change	Validated	Approved
V8.0	01.12.2017	<u>JSA/BAP</u>	Update V3.01 SW		
V9.0	06.07.2018	<u>BAP</u>	Update V4.01 SW (.csv, basic mode, units)		

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# 1 General information

## 1.1 Guarantee

VOH SA warrants this product against any defects in manufacturing or in materials under normal conditions of use and service for a duration of two years from the date of commissioning at the client's premises. If, at any time during the guarantee period, the product is found to be defective or fails, VOH SA shall repair or replace it (at the discretion of VOH SA).

If the product is defective, please call VOH Customer Service on +41(32) 945 17 45.

The warranty shall not apply if VOH SA proves the default or failure is due to improper use of the equipment.

The product is equipped with seals of warranty. Breaking or severing these seals leads to cancellation of the warranty.



**Figure 1: Seal of warranty**

The scope of VOH SA's liability is limited to the repair or the replacement of the product under the terms set out above.

VOH SA SHALL NOT BE HELD LIABLE FOR ANY LOSS OR DAMAGES, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING DIRECTLY OR INDIRECTLY FROM A BREACH OF THE GUARANTEE, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. THIS GUARANTEE IS THE ONLY EXPRESS GUARANTEE PROVIDED BY VOH SA FOR THIS PRODUCT.

This guarantee only covers the initial buyer and is not transferable.

If you have any questions regarding the guarantee, please write to VOH SA at the following address:

VOH SA  
La Praye 5a  
CH-2608 Courtelary

Telephone: +41(32) 945 17 45  
Fax: +41(32) 945 17 55  
e-Mail: [customer-service@voh.ch](mailto:customer-service@voh.ch)  
Internet: <http://www.voh.ch>

## 1.2 Security

### Notice

- Do not use the VISIOTEST if it has been damaged. Prior to starting up the machine, first inspect its control box and electrical connections.
- The VISIOTEST must be used in accordance with the specified guidelines of the fabricator (VOH SA).
- Only personnel who have been properly formed in the user procedure, and have read this document should use the VISIOTEST.

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### Warning!!!

- Please carefully read the information contained in this manual before using the device. Improper use could severely damage the system or peripheral devices.
- The VISIOTEST must be used in an industrial environment.
- Before connecting the device for the first time, verify that the voltage corresponds to the suggested voltage for the device (see the attached label)
- In the instance that the machine is not used for a prolonged period of time, disconnect the power cable.
- Do not under any circumstances take apart the VISIOTEST machine. Only the manufacture, VOH SA, is entitled to repair or replace defective components.
- This product should only be stored and employed at a room temperature not falling below 10°C or exceeding 40°C (50-104 °F).
- This User Guide must be kept in close proximity to the machine.
- Please use only electric cables that correspond to the requirements of the VISIOTEST.
- DO not place the VISIOTEST in close proximity to a heat source.

## 1.3 Transport

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It is suggested that when transported over long or short distances that shock-preventative packaging (provided upon delivery of the machine) is used.


## 1.4 Storage

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The VISIOTEST must be stored in a dry place, protected from humidity and dust. The storage temperature should not fall below 10°C (50° F), or surpass 40°C (104 °F).

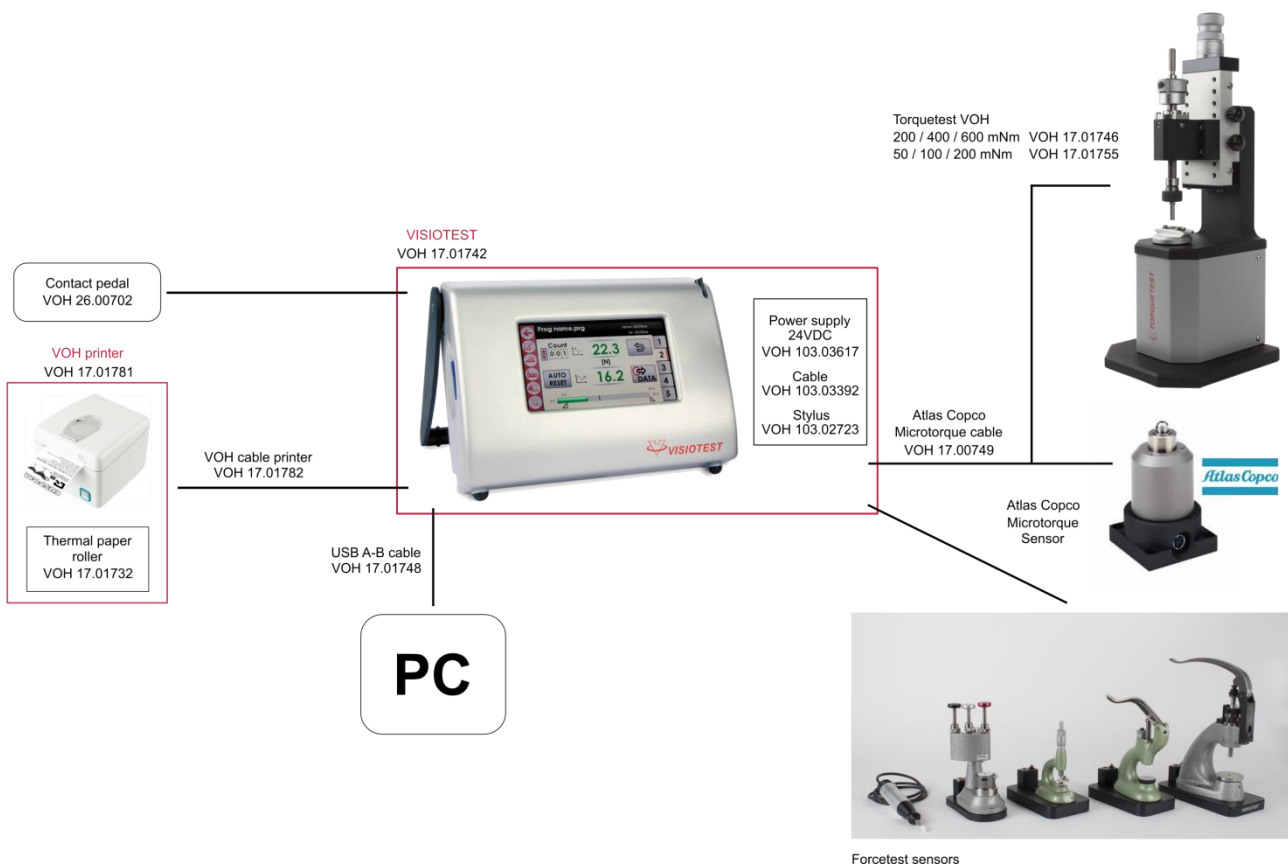
## 2 Product description

The VISIOTEST is a display unit for torque and force sensors. It is compatible with Atlas-Copco Microtorque, Torquetest VOH and Forcetest VOH sensors (See Figure 2).

	Technical specifications	
	Dimensions and weight	180mm x 100mm x 135mm (w x d x h) / 0.5 kg
	Weight with power supply and cable	2kg

### 3 Contents and additional options

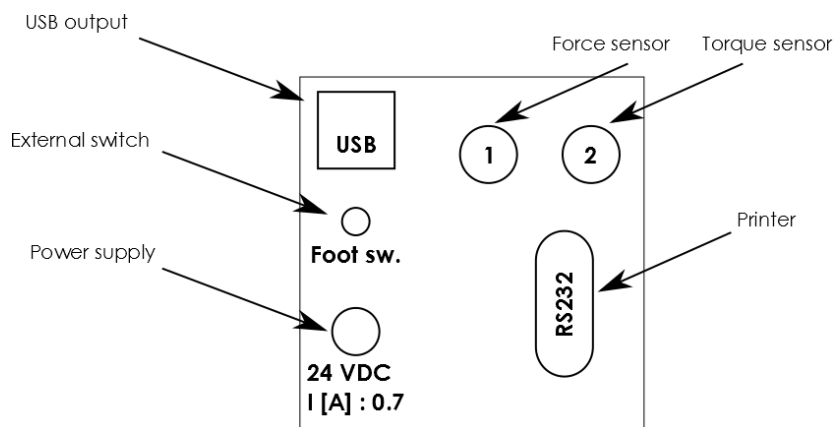
Description
VISIOTEST and universal stylus pen for touch screen
Power supply 24V(input 110-240VAC, 50-60 Hz)
Power supply cord for CEE devices
User Guide



**Figure 2: VISIOTEST and peripheral devices**

## 4 User Interface

### 4.1 HMI Panel Connectors



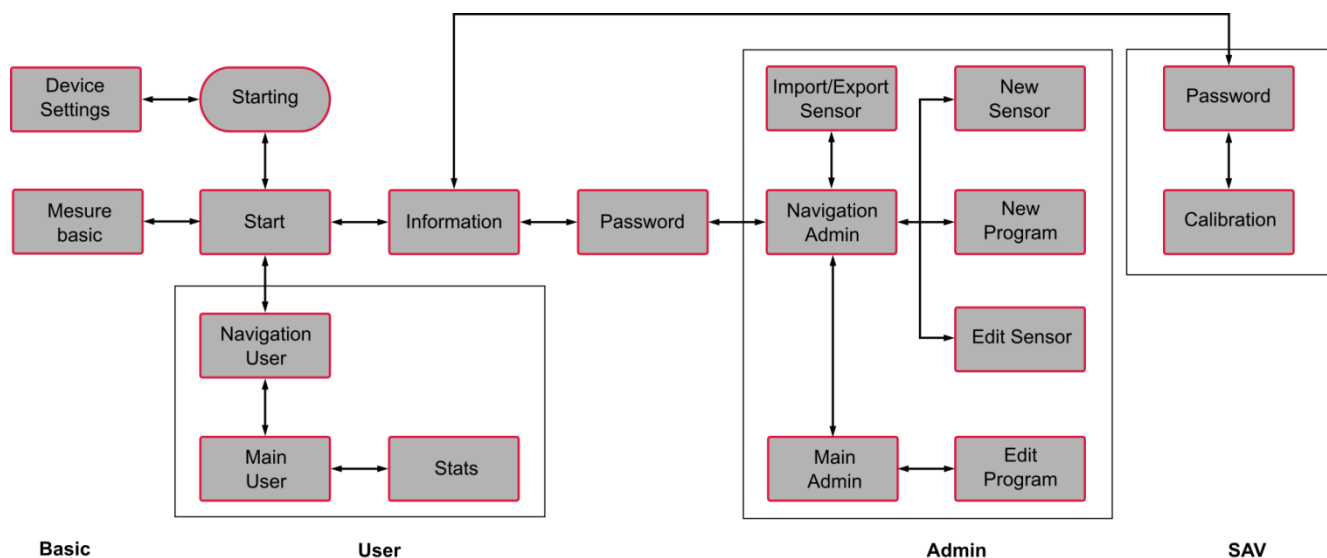
**Figure 3: HMI VISIOTEST connectors**

### 4.2 Functions

The VISIOTEST functions using a four-tier system of access:

- Basic: open access, no programming required
- User : open access, programming required
- Programming mode (admin) : password protected access
- SAV : password protected access

The diagram below depicts the basic functions of the device. Each function is presented in greater detail in the paragraphs that follow.



**Figure 4: Diagram of general functions of the VISIOTEST**

Access to Programming (admin) Mode and SAV Mode is password protected. It is in Programming Mode that it is possible to add, modify, or delete sensors and/or programs. These functions are presented in the following paragraphs.

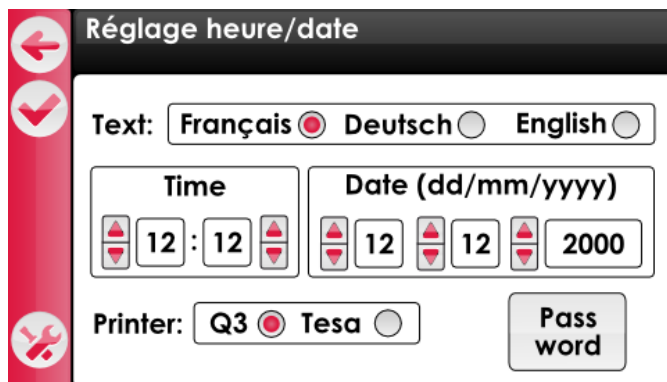
### 4.3 Device Settings

To access device settings, it is necessary to click on the settings icon while the device is starting up (démarrage).



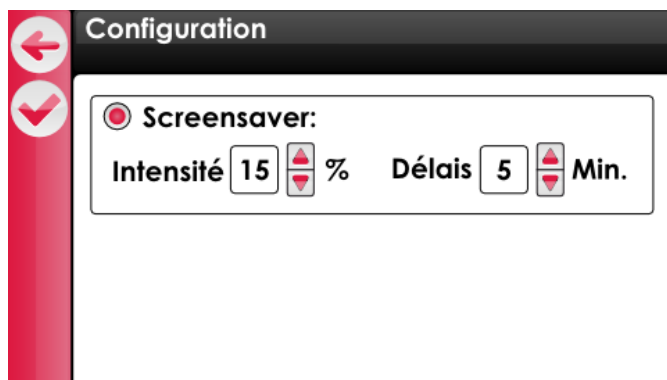
**Figure 5: Screen during start up (Settings icon at top left)**

From the Settings screen, users can modify language, date and time, select a printer, and change the password for Administrator Mode.



**Figure 6: VISIOTEST Settings**

This configuration screen is for choosing after how much time of inactivity the brightness of the screen will be reduced and at which intensity. Any click on the screen will set it back to full brightness.



**Figure 7: Screensaver configuration**



## 4.4 Start screen

### 4.4.1 Sensor list or basic measure access

Once the VISIOTEST has completed starting up, the home screen will appear. When a torque sensor (button with “Nm” unit) and a force sensor (button with “N”) are connected, the screen in figure 8 is displayed.



**Figure 8: Welcome screen (Information icon at top left)**

The button on the right gives access to the list of connected sensor and their programs. The two other buttons allows access to the “basic” measurement mode for each type of sensor connected.

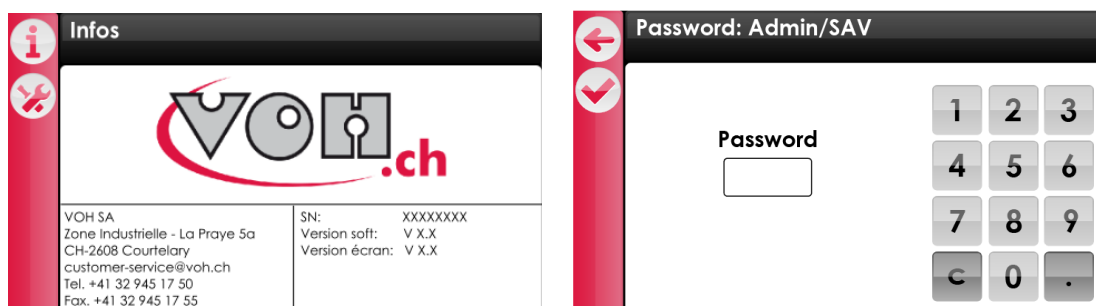
If no or only 1 sensor is connected, the screens are presented according to the possibilities below:



**Figure 9: Welcome screen (variation according to the connected sensors)**

To access the info page or SAV, first select the Information icon. A selection of information relative to the different functions of the device will appear on the screen. Select the SAV icon to access the Password login screen.

Default password for SAV Mode: 1397



**Figure 10: Administrator Mode/ SAV access**

## 4.5 Mode “Basic measurement”

This mode allows direct and simple measurement via one of the connected sensors.

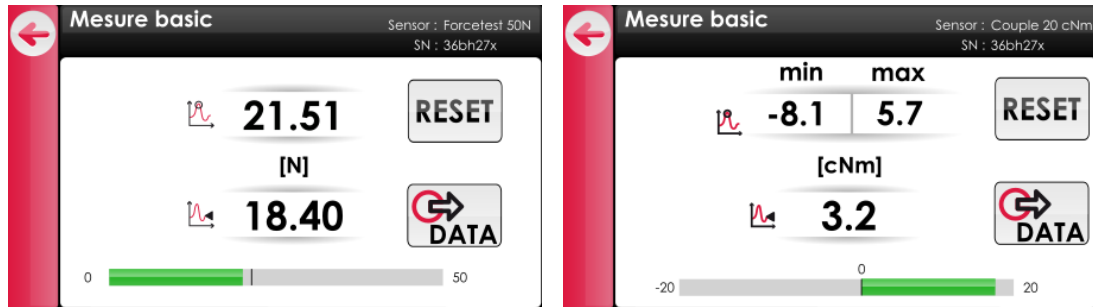


Figure 11: Mode basic : on the left, a sensor with positive FSR, on the right with a +/- FSR

### Symbols and buttons description :

Instantaneous value display



Display of the maximum measured value and possibly minimum value in the case of a sensor in +/-




Send measurement data button (RS-232, USB and SD save)

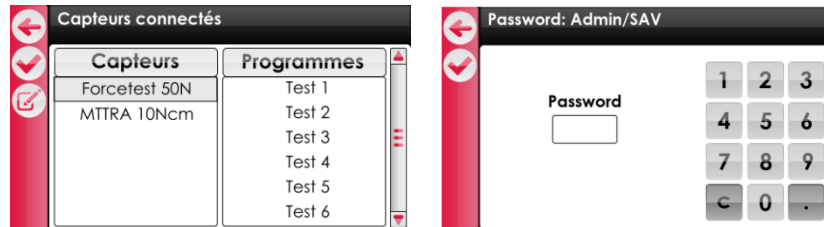


Resetting the measurement



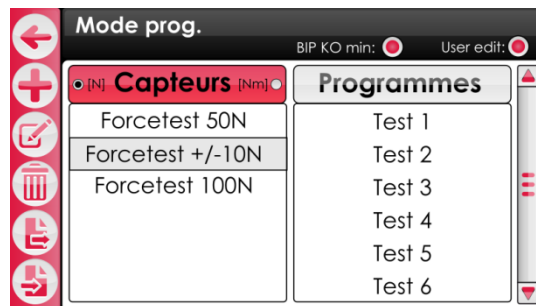
## 4.6 Programming Mode

In Programming Mode, all sensors in the device memory can be viewed, browsed, deleted, and their names can be modified. To access the programming mode, go to the "Sensors connected" page, click on the edit button , and enter the admin password (1234) :



**Figure 12: Programming Mode access**

Each sensor is accompanied by a series of associated programs. An example of typical menu in Administrator Mode is presented below:



**Figure 13: Navigation in Programming Mode**

All functions for management of the VISIOTEST are located on the column on the left-hand side of the screen.

- 1) Create/add a new program if a specific file is selected To create/add when a sensor is selected → highlighted in gray
- 2) Edit the name of a program, or a selected sensor
- 3) Delete a sensor or a program
- 4) Export sensor(s)
- 5) Import sensor(s)

### **User edit :**

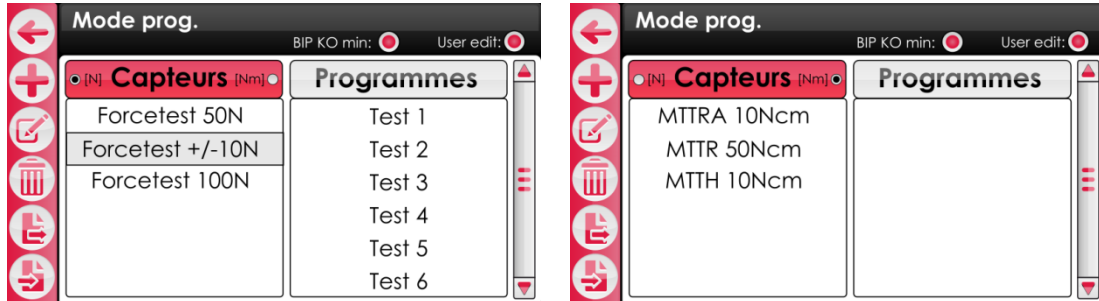
It is possible to authorize (or not) the modification of programs by the user. The « User edit » button located on the top right of the screen allow this choice. If the button is activated (red), the user can change the tolerances used. In any case, the user has the possibility to activate or not the “auto-tolerance” (automatic change of the tolerance in production mode) as well as the “auto-reset” in control mode (automatic reset after measurement OK).

### **BIP KO min :**

The « BIP KO » button, located on top of the screen, allow the activation of a sound during a « KO min » : in case the measurement has not reached the MIN tolerance and returns to 0 (Orange KO displayed). Of course, the “KO” beep has to be activated in the program (see. : § 4.6.4 Administrator Mode: Main screen, page 15). This parameter is common to all programs.

Simply click on the corresponding line to select a sensor. The selected column (sensor/program) will change color. The menu can be navigated from top to bottom with the arrow scroll on the right side of the screen.

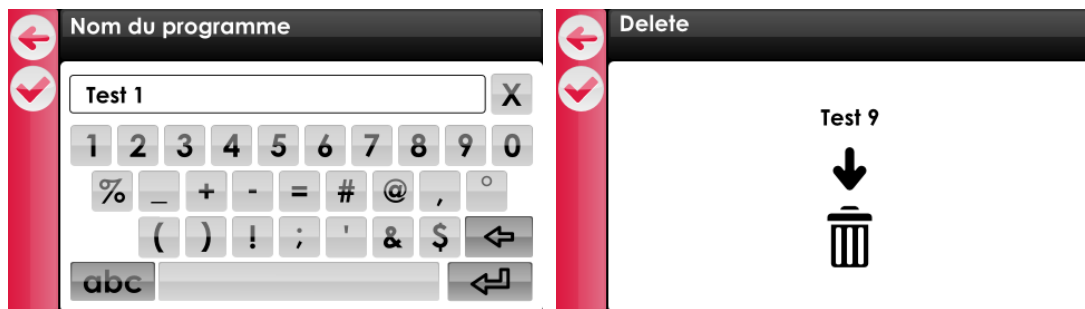
To alternate between force and torque sensors, the user must click on the column header labeled: « Sensors ».



**Figure 14: Alternate between Force <-> Torque**

Once a sensor has been selected, the programs associated to that sensor will appear in the « Programs » column.

When a sensor or a program are selected, it is possible to edit its name or delete it. Please see the below diagrams for more details:

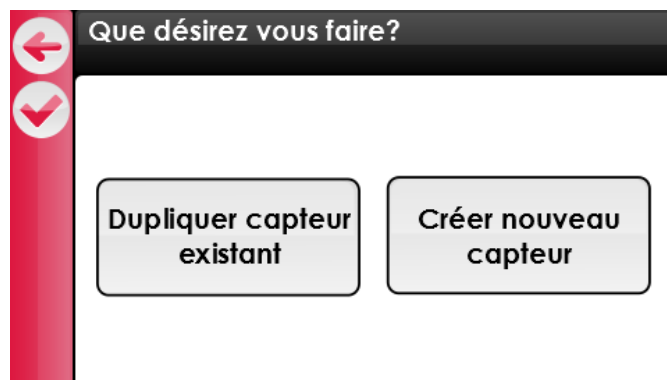


**Figure 15: Edit sensor/program name or delete sensor/program**

#### 4.6.1 Adding a sensor

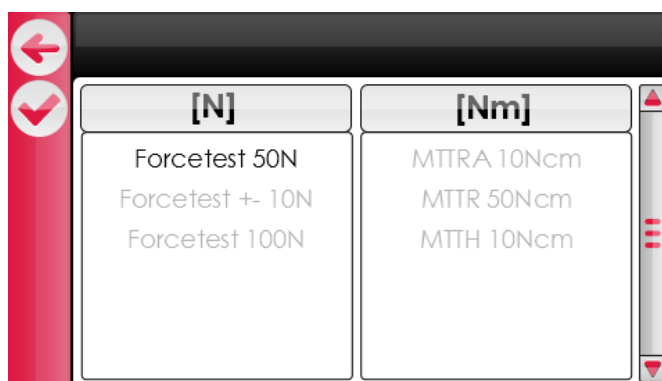
Two scenarios are possible when a new sensor is connected to the VISIOTEST:

- 1) A similar type of sensor already exists in the VISIOTEST memory
- 2) The sensor is new, and not yet programmed in the VISIOTEST



**Figure 16: Creating a new sensor**

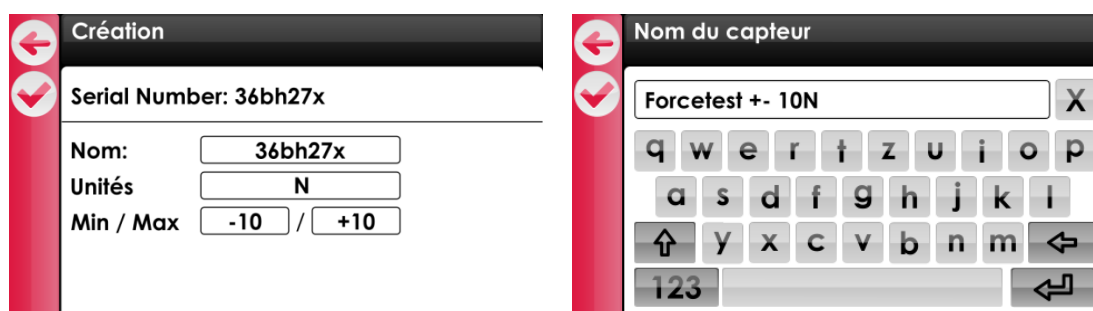
In the first case, it is possible to associate the new sensor to an existing program. This will create a new sensor folder, which the user can name. If this option is chosen, the list of sensors available will appear and the compatible sensors will be appear in black.



**Figure 17: Select a sensor to duplicate**

Once the sensor has been selected, it is necessary to modify the sensor name to create a new folder. This new sensor folder will be an exact duplicate of the existing sensor folder, with all the associated programs.

In the instance that the connected sensor is not recognized by the VISIOTEST and no similar sensors are in the memory, the following screen will appear. It will automatically present the basic information for the newly connected sensor.

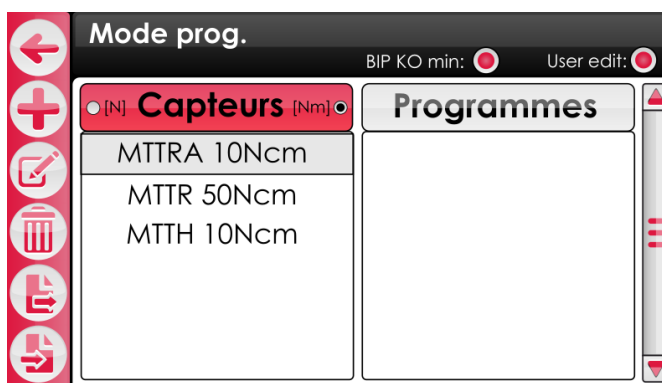


**Figure 18: Creating and editing a new sensor**

To rename the sensor, select the field « Name ». Once the new name has been entered and confirmed, a new sensor folder will be created.

#### 4.6.2 Add Program

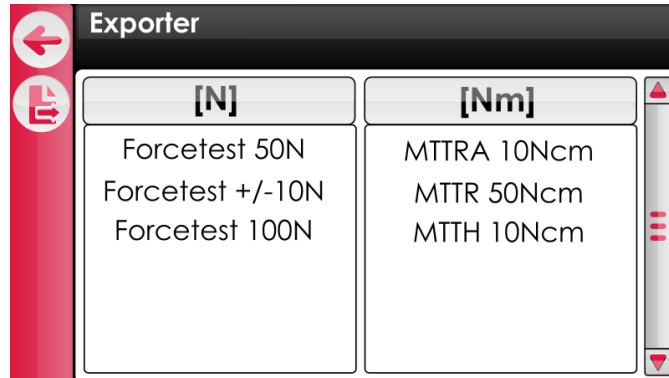
Once a sensor folder has been created, new programs can be added by simply selecting the sensor name and touching the « + » icon.



**Figure 19: Add a program after selecting a sensor**

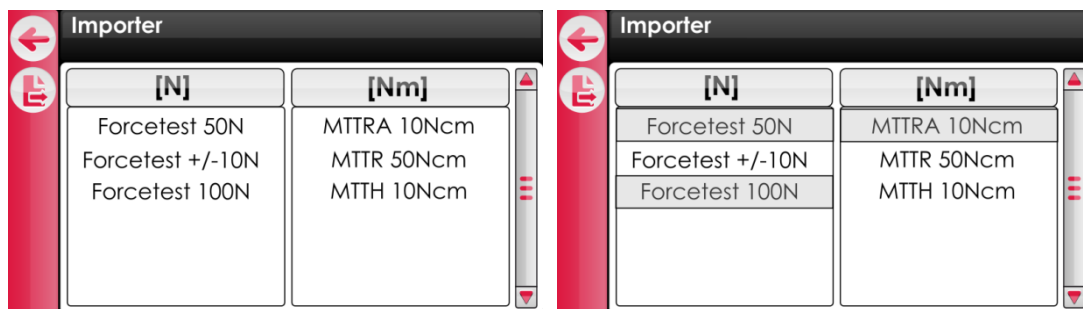
### 4.6.3 Import / Export sensors (and their programs)

In Administrator Mode, it is possible to copy programs from one VISIOTEST and transfer them to another using an SD card. Once the export icon is selected, the following screen appears.



**Figure 20: Export sensors**

Once the sensors to export are selected (force sensors or torque sensors), the Administrator can press on the export icon to copy the sensors to an SD card. When the sensors have all successfully been copied to the SD card, it is possible to transfer them onto another VISIOTEST. To transfer the data, insert the SD card into the new VISIOTEST et select « Import » in Administrator Mode. To complete the import, next select the sensor files to copy and push « Import » a second time.



**Figure 21: Import sensors**

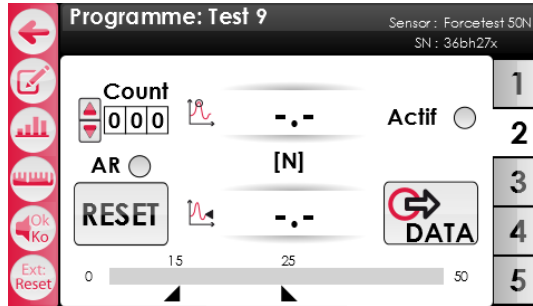
#### 4.6.4 Administrator Mode: Main screen

The main screen of Administrator Mode permits the user to modify or edit programs.

To access the main screen in Administrator Mode, it is necessary to:

- 1) Select a sensor
- 2) Select a program
- 3) Double click the selected program

The main screen in Administrator Mode will appear as follows:

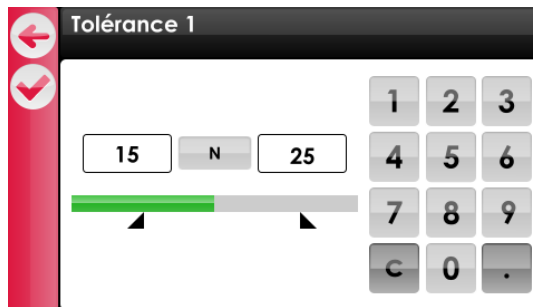


**Figure 22: Main screen, Administrator Mode**

From the main screen tests can be edited (it is not possible to make measurements in this mode). It is also possible for the Administrator to modify the tolerance of each individual tab with the « Active » icon. The inactive tabs will not be accessible in normal User mode.

This option allows the Administrator to define the number of stages of each program (for example : a program is meant to fit 3 hands → 3 active tabs versus a program meant to fit one stone → one active tab)

To edit tolerance, press the « Edit » icon. The minimum/maximum effort can be adjusted individually for each tolerance.



**Figure 23: Edit tolerance**

The icons on the left permit the following (top to bottom):

Back to the Main Menu



Edit the selected tolerance (right tab)



Access statistics module



Select Production/Control Mode



Acoustic signal



Function footswitch



#### 4.6.5 Choice of tolerance units

From the tolerance page, it is possible to choose the units as well as the number of digits of the tolerance by clicking on the button « **N** » above.



**Figure 24: Choice of tolerance units and digits**

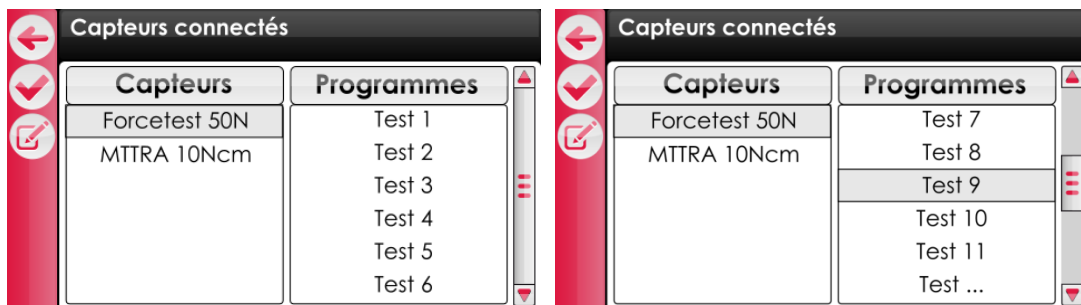
#### 4.7 User Mode

In User Mode, only the sensors saved in the memory or physically connected to the VISIOTEST are accessible.



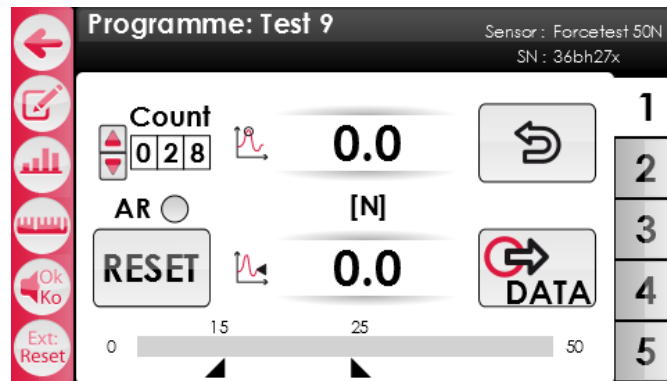
**Figure 25: User Mode Menu**

Once a sensor has been selected, the corresponding programs will be displayed on the screen. To begin a test, simply select it and press the OK icon to bring up the measurement screen.



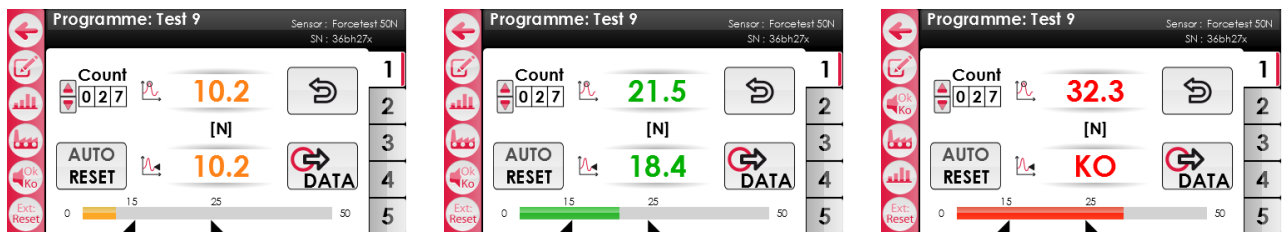
**Figure 26: To select a sensor or a program**





**Figure 27: Measurement screen**

During the measurement stage, the greatest value measured will appear in the upper frame while the instantaneous value will appear in the lower frame. A bar-graph permits the user to illustrate the evolution of effort versus the range sensor used.



**Figure 28: Measurement screens**

The icons on the left permit the following (top to bottom):

Back to the Main Menu



Edit the selected tolerance (right tab)



Access statistics module



Select Production/Control Mode



Acoustic signal

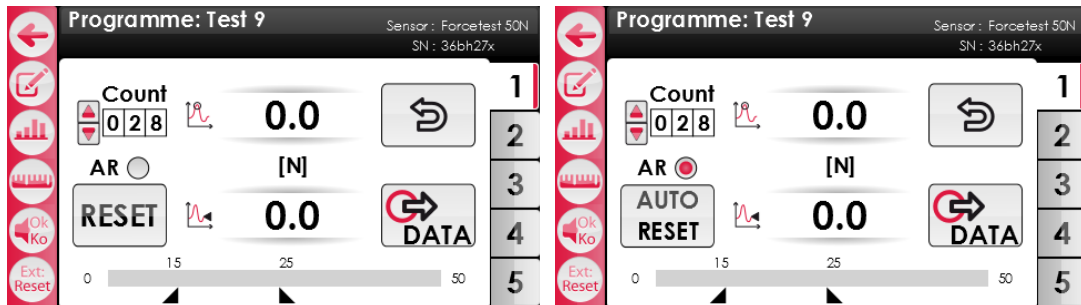


Function footswitch



#### 4.7.1 Control Mode / Production Mode




The VISIOTEST has two modes: Control Mode and Production Mode. It is always possible to change modes when working in User Mode, independent of the activation of « User Edit ».

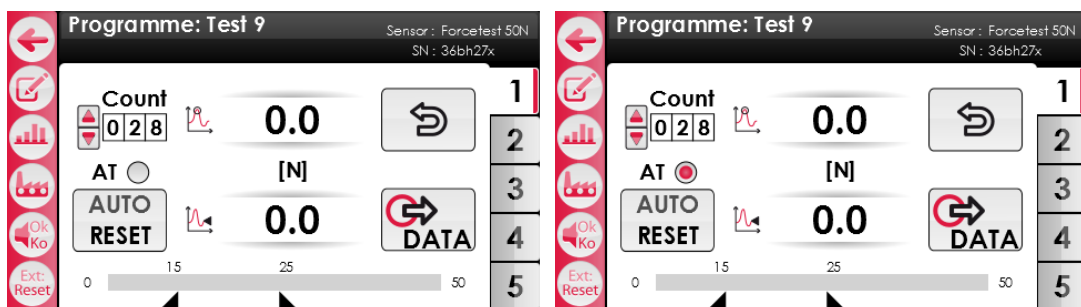


**Figure 29: Control Mode (AR deactivated/ AR activated)**

In Control Mode, it is possible to activate or deactivate Auto-Reset (AR). If Auto-Reset is activated, a reset to zero will take place immediately three seconds after any completed tolerance measurements (OK). When Auto-Reset is activated, the data will be automatically transferred following each completed measurement (OK). If this option is not activated, the user can manually stop the test. This can be done by pushing on the « Reset » icon on the display screen or on the button behind the FORCETEST sensors. Automatic modifications to the tolerance are not available in Control Mode.

It is also possible in Control Mode to assign a particular function to the pedal. The options are the following:

Transfer data (via USB and RS-232)	
Change tolerance (1→2→3→4→5→1→...)	
Reset (exit measurement)	



**Figure 30: Production Mode (AT deactivated/ AT activated)**

In Production Mode, it is possible to activate or deactivate Auto-Tolerance (AT). By activating Auto-Tolerance, the machine will automatically change the tolerance following each completed measurement (OK). If this option is not activated, the tolerance can be changed manually. This operation can be completed by selecting on the tolerance tabs (at the right of the display screen), or on the button behind the FORCETEST.

In Production Mode, the receipt of the measurement will be prepared 3 seconds after the completion of a successful test (OK). The measured value will be automatically transferred to the printer via the USB cable. The pedal permits the user to reset via Auto-Reset. The Auto-Reset button must be pressed to print the receipt of a KO measurement.

#### 4.7.2 Statistic module

When a measure is completed, the meter (located on the top left of the screen) is incremented. It is then possible to cancel the last measurement (and those preceding) by using the « Refresh » button located on the top right of the screen.

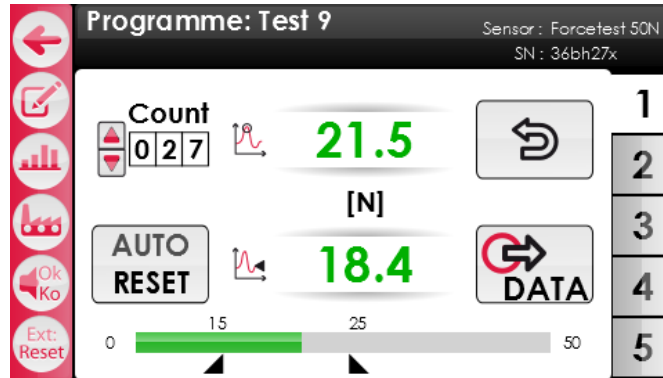


Figure 31: Measurement screen with « Refresh » button

Once the measurements are completed, the statistics module can be accessed with a simple touch of the Statistics icon.

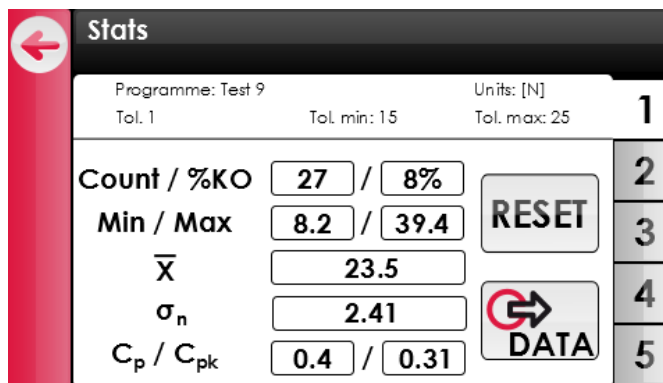


Figure 32: Statistics Module

A measurement is labeled OK if the maximum effort measured is included within the specified tolerance. If the effort exceeds the tolerance, the measurement is considered KO. In the case that a measurement is below the tolerance, it is possible to restart the operation and the instantaneous value will be displayed again.

Each tab (tolerance) of each program has its own statistics module. The information relative to the sensor, to the program, and to the tolerance used are summarized at the top of the screen. The statistics presented are the following:

<b>Count / %KO</b>	Number of operations completed	% operations outside of the tolerance
<b>Min / Max</b>	Min. effort measured	Max effort measured
$\bar{x}$	Average value of operations	
$\sigma_N$	<b>Ecart type</b> : $\sigma_N = \sqrt{\frac{1}{N} \sum_{i=0}^N (x_i - \bar{x})^2}$	
$C_p / C_{pk}$	<b>Process capability</b> $C_p = \frac{Tol_{max} - Tol_{min}}{6\sigma}$	<b>Capability index</b> $C_{pk} = \min \left[ \frac{Tol_{max} - \bar{x}}{3\sigma}; \frac{\bar{x} - Tol_{min}}{3\sigma} \right]$

Statistics can be reset to zero by pushing on the Reset button on the Statistics Module page. To send the data vis USB and RS-232 is possible by pressing the DATA button. (cf. :4.8

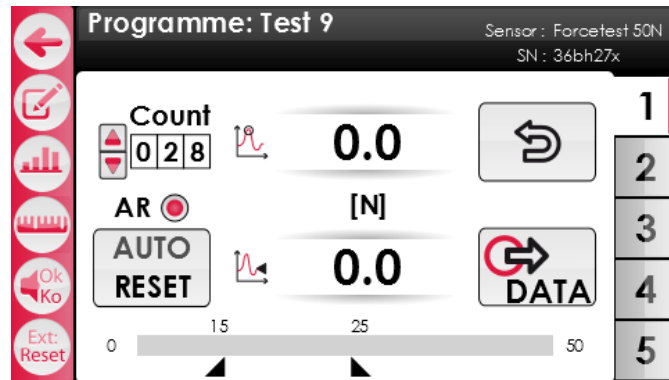
**Warning !**

Any and all ongoing statistics will be deleted if the User exits an ongoing test to return to the Main Menu.

### 4.7.3 Measurement History Access

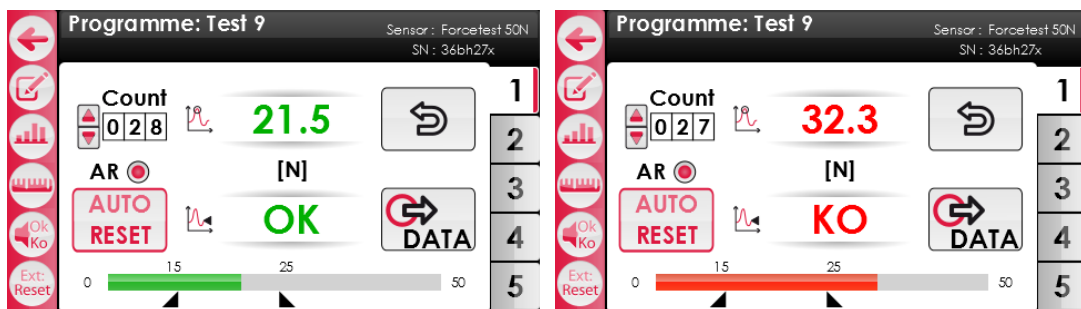
The VISIOTEST permits the User to consult prior measurements completed in a tolerance test (note : if a User quits an ongoing test, the data will be lost).

Access the measurement history using the cursors on the left side of the meter. In order to navigate, the sensor must first be in a resting position (following a Reset → maximum value and instantaneous values are shown in black).



**Figure 33: Resting state following a RESET/AUTO-RESET**

Prior values may also be reviewed. The maximum value and measurement status will be shown.



**Figure 34: Displaying a value from the History**

When displaying values from the History, the RESET button will blink. Pressing the RESET button will permit the User (cf.: Figure 33) to return to the ongoing measurement. When a historical value is displayed, pressing the DATA button will transfer the measurement data via USB and saved onto the SD card.

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#### 4.7.4 Additional Functions and Transfer of DATA

On all Measurement and Statistics pages, the DATA button will be present.



**Figure 35: Send DATA statistics icon**

This button permits the data displaced on the page to be sent to the printer (via RS232) and/or to a PC via USB cable and saved onto the SD card.

When transferring data via USB, the following values will be sent:

#### **USB sending : EXPORT TYPE CSV ???**

##### In Measurement Mode

The VISIOTEST sends the last measurement made via USB. This transfer will take place automatically in Production Mode. In Control Mode, it is necessary to push on the DATA button to begin the transfer.

##### In Statistic Mode

```

Heure/Date : 08 :30 / 18.03.2013
Capteur : Nom du capteur
ID : 08087376
Programme : Nom du programme
Tolérance [1]
{
  Configuration
  {
    Unités : N
    Tol min : 15.0
    Tol max : 25.0
  }
  Statistiques
  {
    Count / %KO : 6 / 33%
    Min / Max : 12.0 / 26.1
    Moyenne : 20.5
    Sigma : 2.41
    Cp / Cpk : 0.4 / 0.31
  }
  Data
  {
    12.0
    22.0
    26.1
    22.0
    23.0
    18.0
  }
}

```

#### **Printer transmission :**

In addition to transfer of the data via USB, it is possible to print the information on a receipt with a TESA or Q3 printer. The user will be asked to select the model of the printer during the start up on the Parameters page.

When using a TESA printer, the format of the printed receipt is limited to that predefined by the manufacturer.

The Q3 printer permits the user to print both data relating to the sensor as well as to the program used to complete the measurements.



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Standard printed ticket in Measurement Mode

Heure / Date : 08 :30 / 21.03.2013

Capteur : Nom du capteur

ID : 08087376

Programme : Nom du programme

Unités : [N]

Tol.1:xx-xx

Tol.2:xx-xx

Tol.3:xx-xx

Tol.4:xx-xx

Tol.5:xx-xx

Tol.	Count.	Val.[N]	OK/KO	Heure
1	001	25.2	KO	09:52
2	005	30.1	OK	10:24
5	010	28.0	OK	14:32

Signature opérateur :

-----

Standard printed ticket in Statistic Mode

Heure / Date: 08 :30 / 18.03.2013

Capteur: Nom du capteur

ID: 08087376

Programme: Nom du programme

Tolérance: 1

```
{  
  Configuration
```

```
{  
  Unités: N  
  Tol min: 15.0  
  Tol max: 25.0  
}
```

```
Statistiques  
{  
  Count / %KO: 6 / 33%  
  Min / Max : 12.0 / 26.1  
  Moyenne: 20.5  
  Sigma: 2.41  
  Cp / Cpk: 0.4 / 0.31  
}
```

```
Data
```

```
{  
  12.0  
  22.0  
  26.1  
  22.0  
  23.0  
  18.0  
}
```

Signature opérateur :

-----

SD card

When an SD card is inserted in the Visiotest, pressing the "Data" button creates an ".csv" file on the SD card in a "DATA" folder. Note that this type of file can be opened directly in Excel.

This is valid for the measurement mode and also for the statistical mode.

The statistics files are named: « *JJMMAAA\_STAT\_NomCapteur\_TOLx\_hhmmss.csv* »

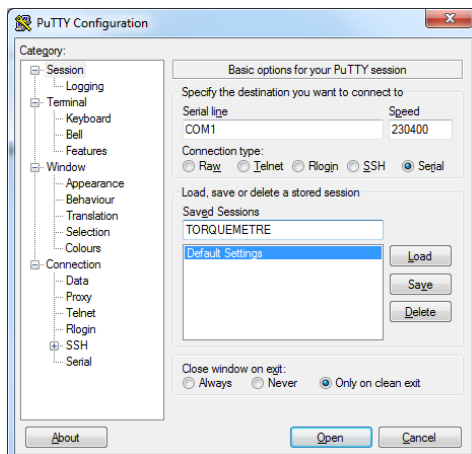
The measurement files are named: « *NomCapteur\_NomProgramme\_JJ\_MM\_AAAA.csv* »

## 4.8 Transfer results via USB cable

To transfer results onto an external support or drive, the process is detailed for you below :

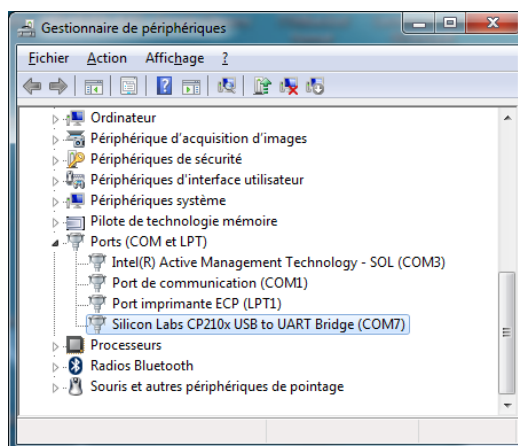
- Download PuTTY.exe (<http://the.earth.li/~sgtatham/putty/latest/x86/putty.exe>)
- Start PuTTY.exe

NOTE : No installation is necessary to use putty.exe



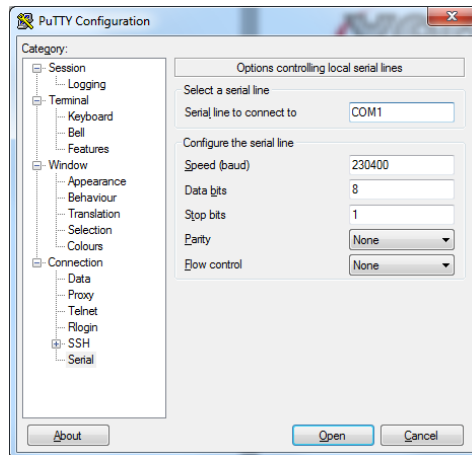
**Figure 36: PuTTY.exe**

- Select « Session » in the left-hand column
- Select « Serial » on the right part of the window
- In the field « serial line » enter the details of the COM port which the VISIOTEST is connected: in the peripheral device management (configuration panel -> system -> material), search for « Ports (COM and LPT) » and then « Silicon Labs CP210x USB to UART Bridge (COMxx) -> the xx and the port COM number, 7 in the below example:



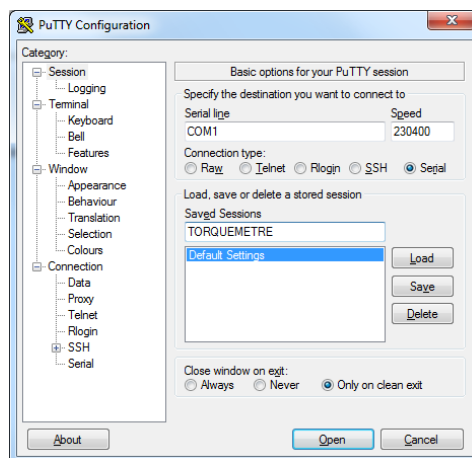
- In the field labeled « Speed » enter 230400
- Select « Serial » in the left-hand column

The following screen appears:



**Figure 37: Configuration of the serial port**

- Enter the following parameters: Speed 230400, Data bits: 8, Stop bits: 1, Parity: none, Flow control: none. NOTE: the serial port number (here in the example COM1) may vary.
- Return to Session (left hand column). Select « Serial » on the right side of the window
- It is also possible to save the configuration, by naming it and clicking SAVE
- To activate the serial port, and/or configure it, simply click on « Open ».





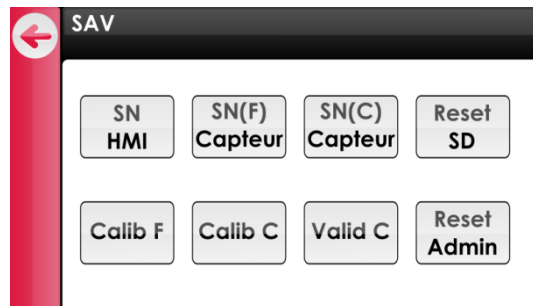
## 4.9 Service (SAV) Mode

### NOTICE

The VISIOTEST additionally has a Service Mode (SAV). Access to the Service (SAV) mode is password protected.

This mode is reserved for selected users trained by VOH SA. Any manipulation of the device in this mode could potentially risk and/or compromise the device and should be managed with care. In no instance should the user need to access or attempt to modify the serial number of the VISIOTEST (SN HMI button) or the basic elements of a sensor (sensor button).

This mode will be used to calibrate the FORCETEST sensors.



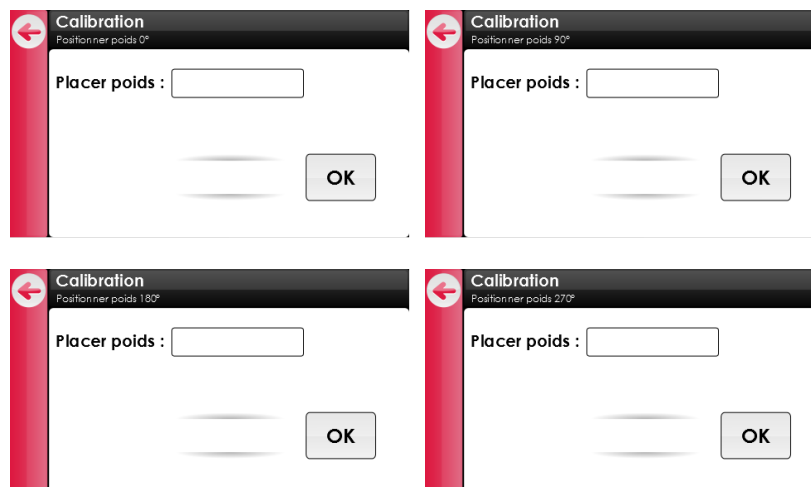
**Figure 38: SAV Mode**

From Service (SAV) Mode, the user is able to reset the password (1234). The icon, « Reset SD» will allow the user to format the internal memory storage of the SD card. To access these functions, simply click on the corresponding button.

**ATTENTION:** Please wait 5 seconds before restarting the VISIOTEST once the « Reset SD » icon has been activated.

### 4.9.1 Calibration of FORCETEST sensors

To access Calibration Mode, the user must press the « Calibration » icon. The VISIOTEST will then guide the user through the procedure to calibrate the connected FORCETEST on screen.



**Figure 39: Calibration procedure**

Each weight must be placed in four different orientations, as all four weights are necessary for the proper calibration of a sensor. Weight values required are indicated by the display. When the reading is stable, it can be acknowledged by pressing the OK button, and so on until the process is complete. The back arrow returns the user to the Service Mode and not the last measurement.

When the procedure is complete, the gain is displayed. If the user validates the measurement, the calculated gain will be sent to the sensor, and the user must then restart the VISIOTEST for this measurement to be saved. If the user pushes on the return button, the gain calculated will not be saved to the sensor.



Figure 40: Calculated gain and validation before saving to the sensor

#### 4.9.2 Torque sensors calibration

**The calibration of torque sensors is exclusively reserved for VOH.**

For information, the following message appears in the case of pressing the “Calib C” button and if a torque sensor is connected:

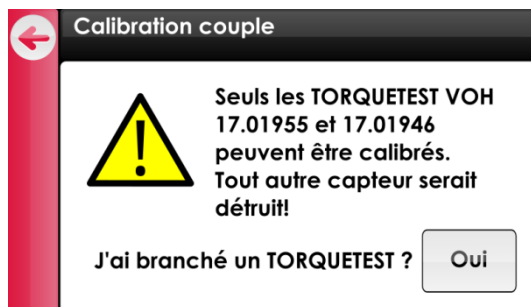



Figure 41: Torque calibration, warning message

Exit this page by pressing the back button  at the top left.

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## 5 Exclusion of responsibility and/or guarantee

Damages provoked by use, transport, or storage not in accordance with the specifications described in this guide will not be included in the guarantee from the manufacturer. Any modifications of the device, and/or opening of the machine are forbidden and immediately negate the guarantee. The guarantee expires when it is evident the fault is with the User, and not a fault in manufacture.

## 6 Maintenance and Service

Cleaning of the screen: The VISIOTEST screen should be regularly cleaned with a dry microfiber cloth.

## 7 Representation/Distribution

