

Utility software for Baces3D arm

BacesWIZARD

Version 4.1.0.1

User Manual

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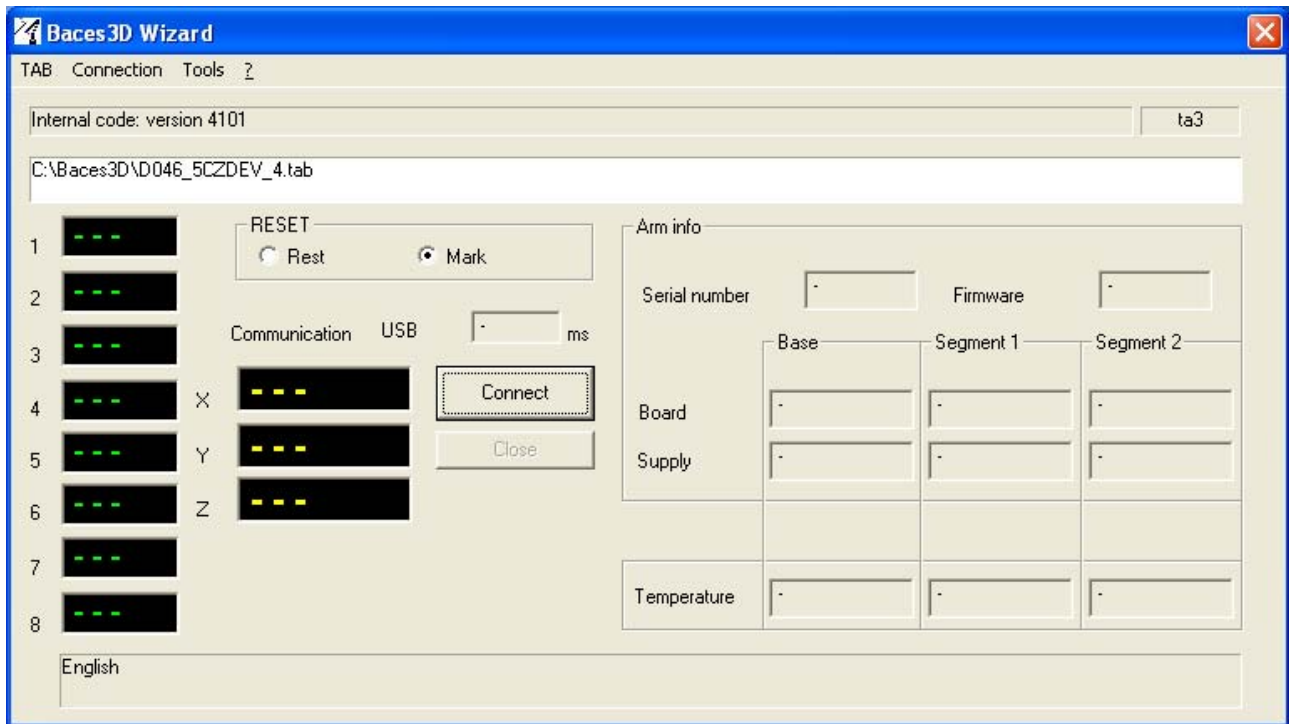
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1. Description of BacesWIZARD

BacesWIZARD is a utility program for Baces3D arm. With BacesWIZARD you can connect, test and calibrate the arm.

BacesWIZARD is easy to learn. Use it for the first connection of Baces3D arm to your Personal Computer.



Multi-language menù

From menù ? (About) of BacesWIZARD is possibile to select the language for BacesWIZARD dialogs and messages. The same selection is used by the baces.dll in external software.



ATTENTION:

The language menù is available only if the arm is disconnected.

Hardware requirements

- PC-compatible system
- Microsoft Windows 98, Second Edition (98SE), Windows 2000 or Windows XP
- User logged as administrator
- CD-ROM drive (for use with the accompanying CD)
- An available USB port

The installation is available from Baces3D CD. Run **Baces3D Install x.x.x.x**.

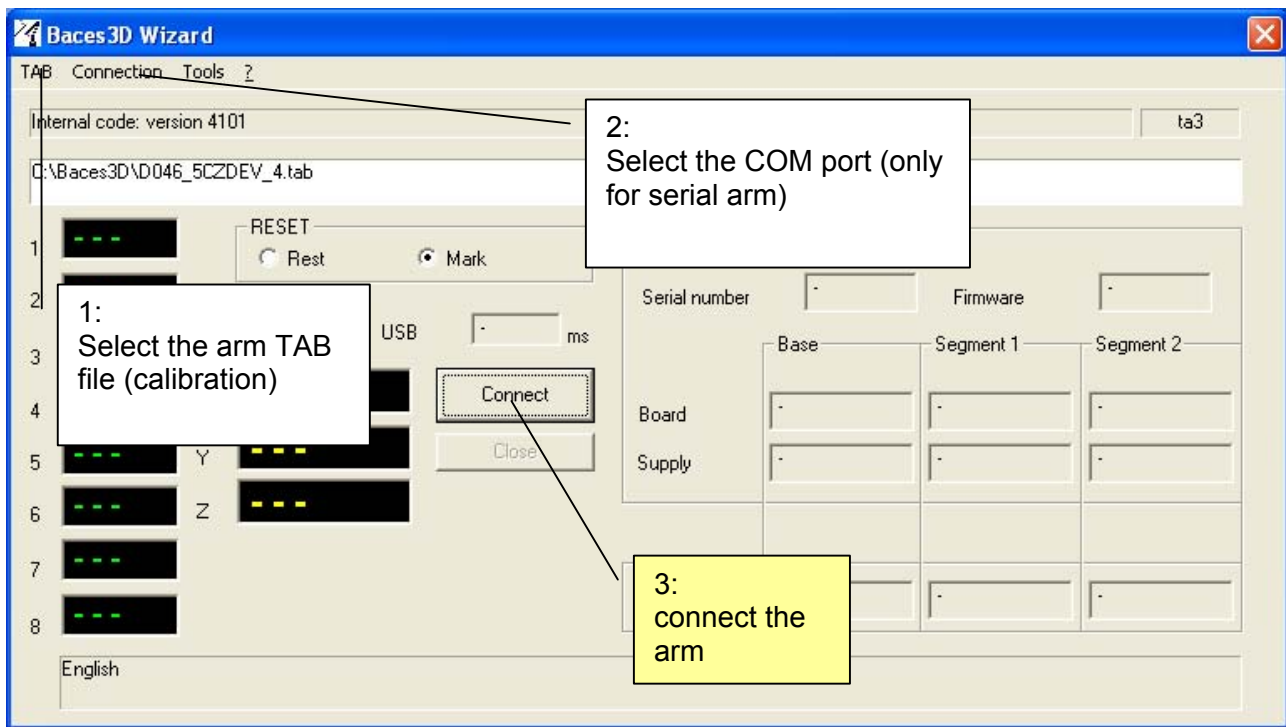
The software is installed by default in C:\Program files\Baces3D directory.
Is created a link to BacesWIZARD on the user desktop.



For further information on arm installation and USB drivers configuration, read the **Baces3D User manual** and **Baces3D USB installation**.

Start using BacesWIZARD

To start the arm connection with BacesWIZARD, you have to set some configuration:



1. Selection of the calibration file for the arm in use (*.tab).
2. Selection of the COM port (only for serial arm).
3. arm connection.

IMPORTANT:

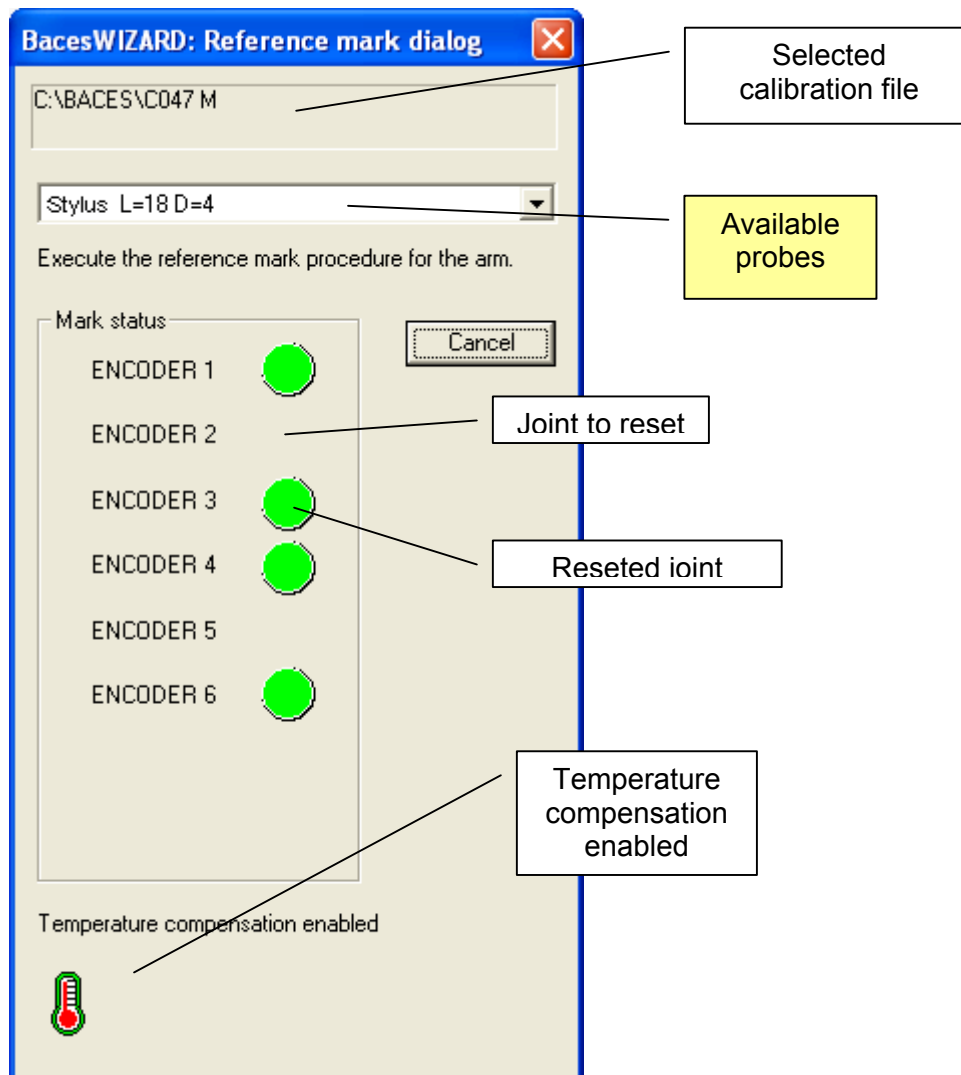
the Rest option is to use only for functional tests and only on indication of the Technical Support.

Arm connection

Click the **Connect** button. A dialog displays the reset conditions..



In this step you can select the probe that you want to use for the measure (see **Probes calibration** chapter).



Move the arm joints starting from the rest position.

Once reseted all the joints of the arm, the dialog will automatically be closed and BacesWIZARD start the measure.

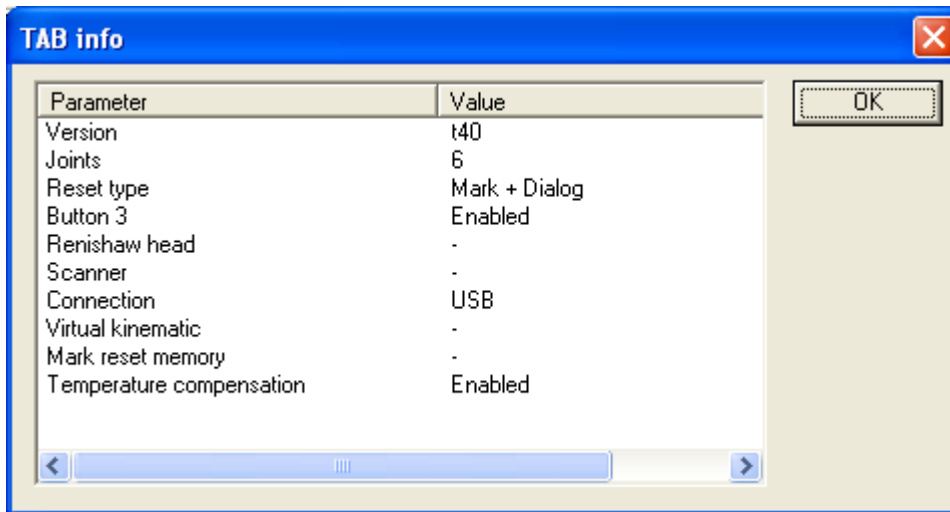
On arm connected, the menù Tools will be enabled.

2. Tab menu

With the TAB menu you can select the calibration file to use with the arm. Make sure to select the correct calibration file. A



The **Info** menu displays the parameters of the opened calibration file.



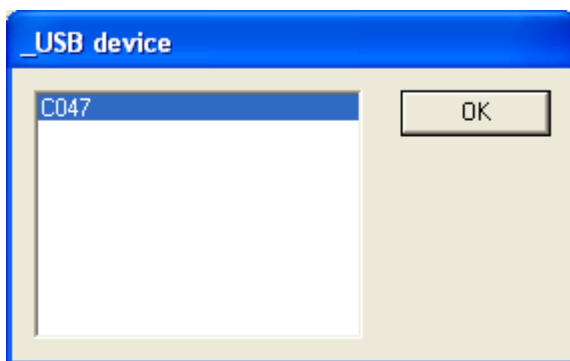
3. Connection menu

The Connection menu configure the port that the PC use for the arm reading. The functionality is different according to the type of used arm.

USB arm



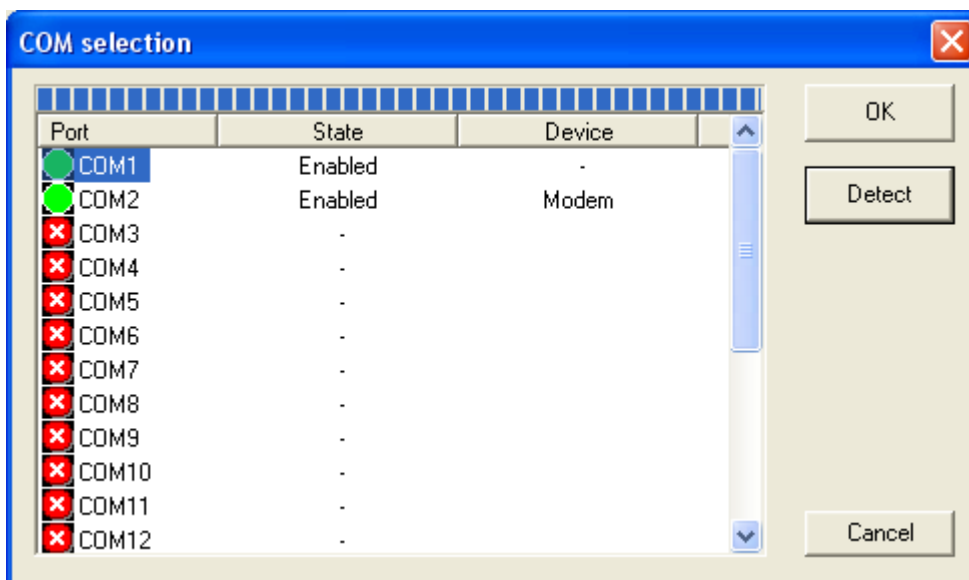
The USB drivers automatically detect the arms connected to PC and display their serial numbers.



COM arm



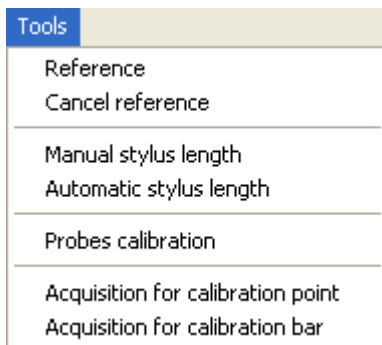
For serial arm, will be displayed the COM port available and the actual selection.



The command **Detect** run a search on available ports, detecting the possible connected arms.

4. Tools menu

The Tools menu enabled the advanced functionalities of the software BacesWIZARD.



With the '**Reference**' menu you can move the XYZ zero reference of the arm on the sample with the acquisition of three reference points.

The '**Stylus length**' menus allows to generate a new tab file for stylus with different length. The calibration change only the stylus length.

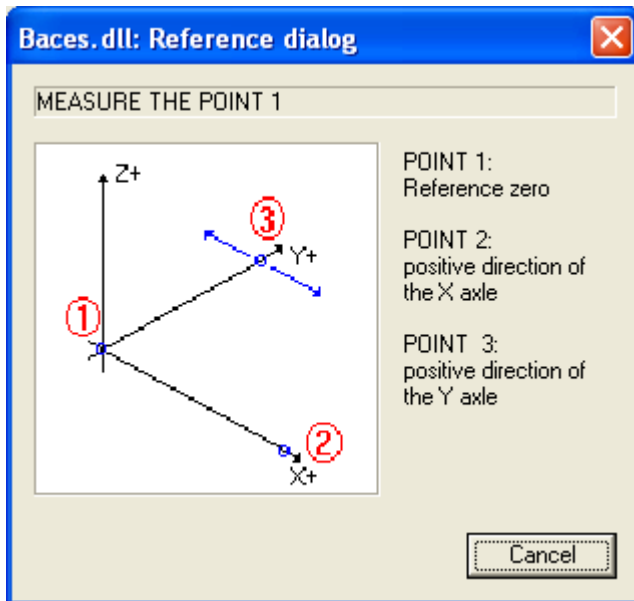
The '**Probes calibration**' menu display the Probes Management dialog. Is possible to add, calibrate, delete or modify a stylus mounted on the arm. All the new probes are saved in the same tab file.

The '**Acquisition for calibration**' menu display a dialog procedure for the acquisition of a rep file. This file, sent to Technical Support, permits the calibration of the arm.

5. Reference menu

Perform three conic hole in your sample (or support) to pick the reference points (0-origin, X-axes, Y-axes). Use a spherical stylus.

The procedure will display the following dialog.



To go back at original reference, use the Cancel Reference menu.



The reference function work only in BacesWIZARD arm connection. For other software use the specific alignment tools.

6. TOOLS menu

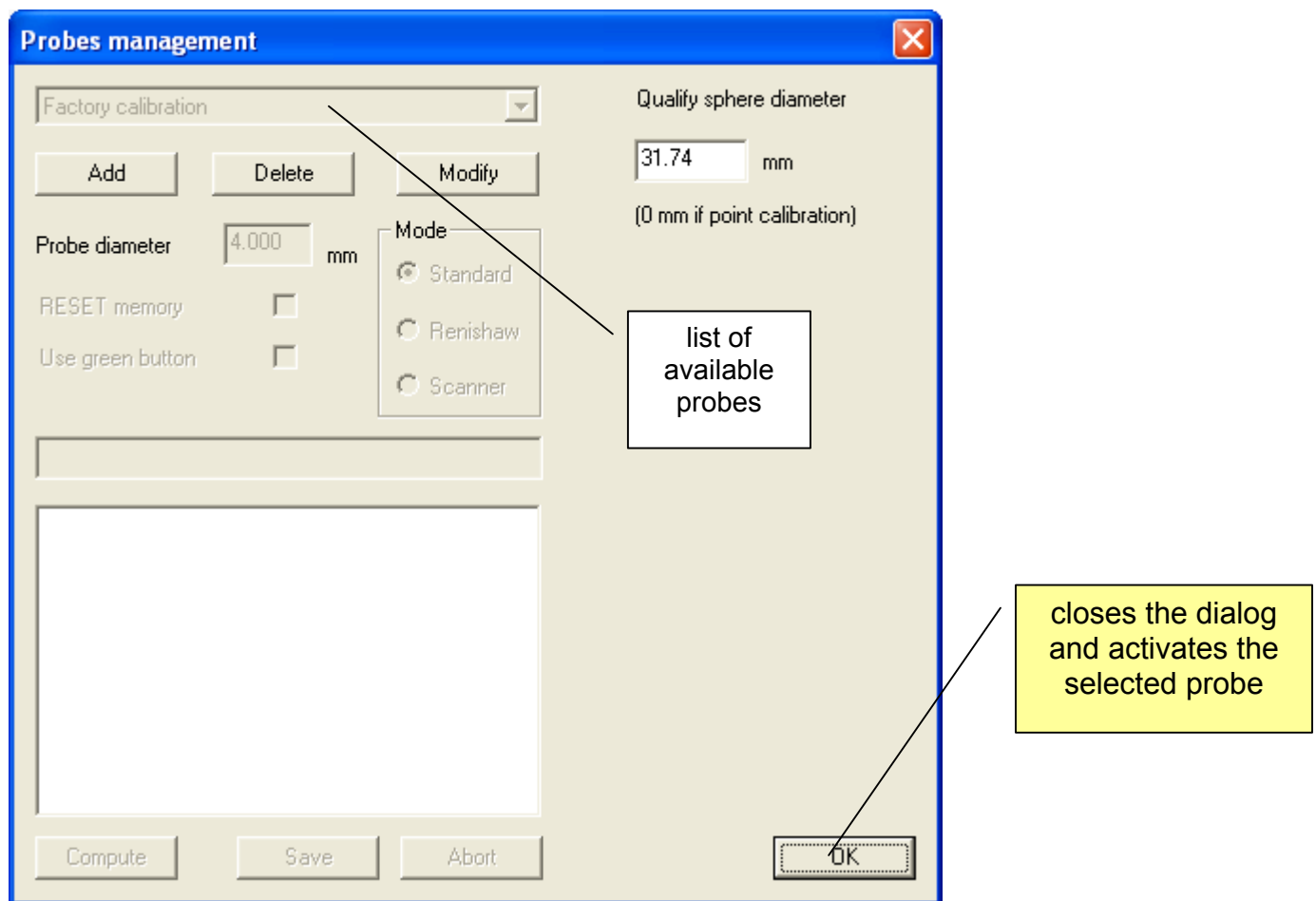
With the Probes Management dialog the operator can add, delete or modify a specific probe for Baces3D arm.



The original TAB file have only the factory calibration tool. Create a new tool to calibrate the standard stylus (L = 18mm \varnothing = 4mm).



Particularly for the series 100 arms, is necessary to effect the operation of re-calibration for the probe every time that this is disassembled or replaced.



The 'Apply' button closes the dialog and activates the selected probe.

Add a probe

The button 'Add' allows the creation of a new probe, beginning from the selected configuration.

To create a new probe:

1. Insert the Probe diameter value.
2. Insert the Acquisition Mode value.
3. Insert the name of the probe
4. Select the Qualify sphere diameter (0 mm if you want to calibrate the probe on one point).

The screenshot shows the 'Probes management' dialog box with the following fields and controls:

- 1) Insert the Probe diameter value:** A text box labeled 'Probe diameter' containing the value '4' and the unit 'mm'.
- 2) Insert the Acquisition Mode value:** A radio button group labeled 'Mode' with three options: 'Standard' (selected), 'Renishaw', and 'Scanner'.
- 3) Insert the name of the probe:** A text box labeled 'probe n° 1'.
- 4) Select the Qualify sphere diameter (0 mm if you want to calibrate the probe on one point):** A text box labeled 'Qualify sphere diameter' containing the value '31.74' and the unit 'mm'.

Other visible elements include 'Delete' and 'Modify' buttons, 'RESET memory' and 'Use green button' checkboxes, 'Acquire at least 15 points' text, and 'Compute', 'Save', 'Abort', and 'OK' buttons at the bottom.

Use the foot-pedals or the probe buttons to acquire the points:

pedal 1 (blue) – pick a point

pedal 2 (yellow) - delete the last point

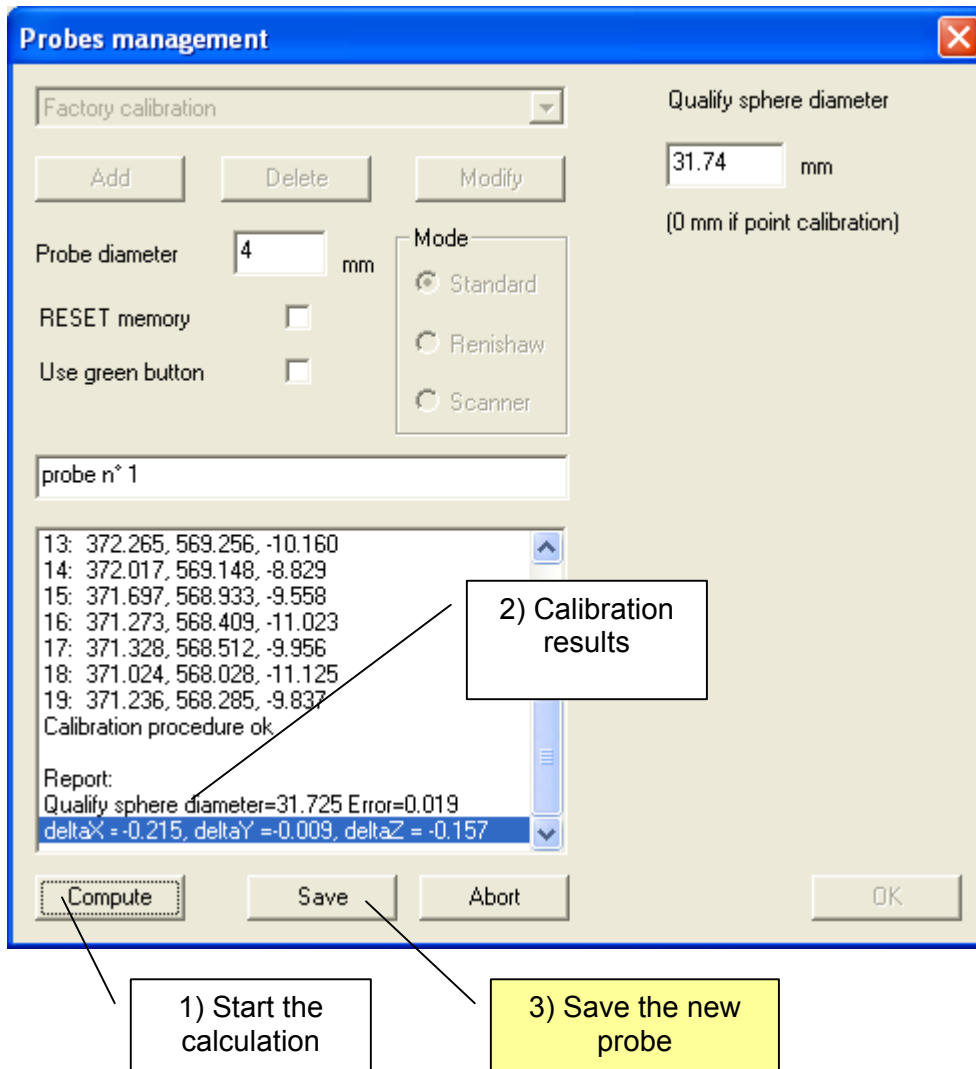
If you have to calibrate the probe in one point, see the PREPARING THE CALIBRATION note in CALIBRATION PROCEDURE manual.



Pick the points with different orientation of the probe. If you use a calibration sphere, pick the points all around the sphere.

Use the 'Compute' button to calculate the result of the new calibration. If the values are adequate, save the probe with 'Save' button.

Press 'Apply' when you are finished.



The 'Abort' button stop the calibration for the new probe and restores the precedent.

- For the Scanner mode, is sufficient to save the probe without pick the calibration points. The scanner head/probe will be calibrated in the specific software in use with the scanner.
- The 'Reset Memory' flag allows, once effected the first reset, the connection of the arm without the visualization of the mark reset dialog. The option is active up to the turning off of the arm.

Delete a probe

The button 'Delete' allows the elimination of a probe not more necessary or wrong . For the operation is asked a confirmation. Once deleted, the probe isn't more recoverable.

Modify a probe

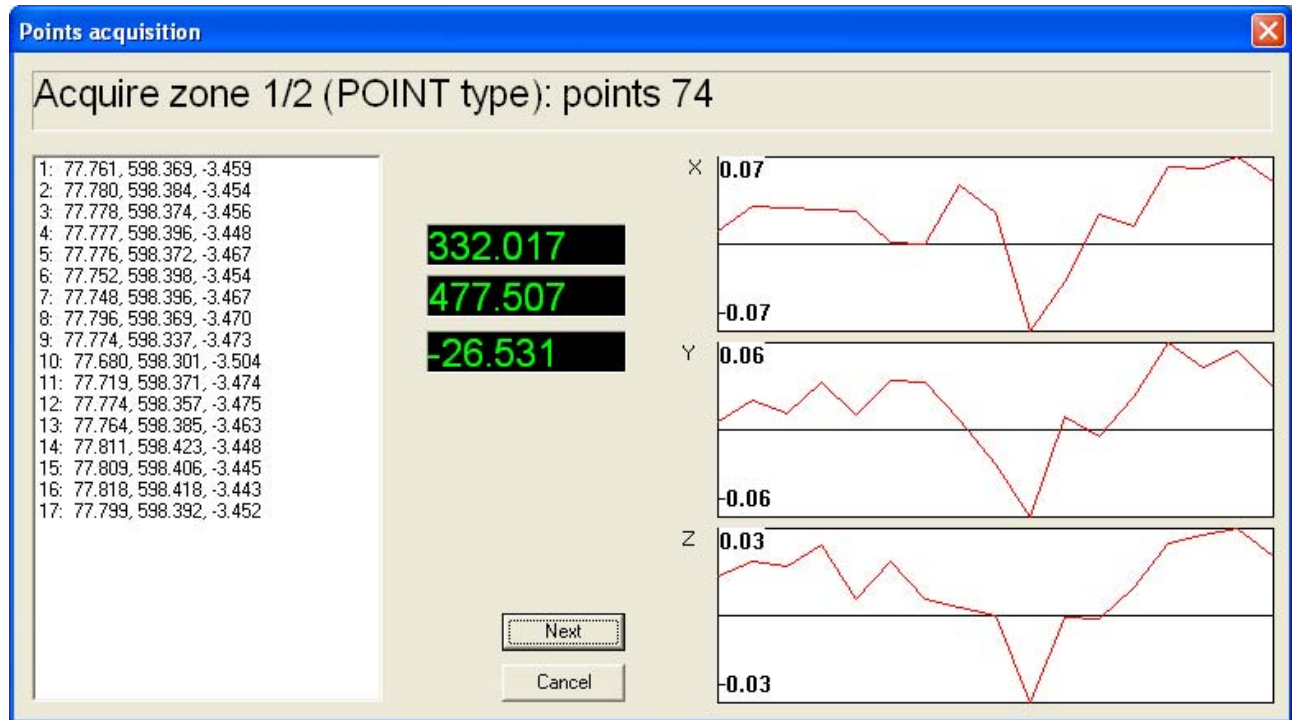
If the probe is disassembled or replaced, you can re-calibrate the probe directly with the 'Modify' button, without creating one of new.

Use the same procedure as the chapter 'Add a probe'.

7. Acquisition for calibration point menu

The point calibration can restore the original calibration when only one arm parameter is out of value.

The acquisition is executed rotating the stylus on a conic hole with different probe orientations.



See the **Calibration procedure** manual for further information about the calibration procedure.

Use the foot-pedals or the probe buttons to acquire the points:

- pedal/button 1 (blue) - acquires point
- pedal/button 2 (yellow) - delete the last point



At the end of the procedure, press the **Next** button and save the acquisition in a rep file.

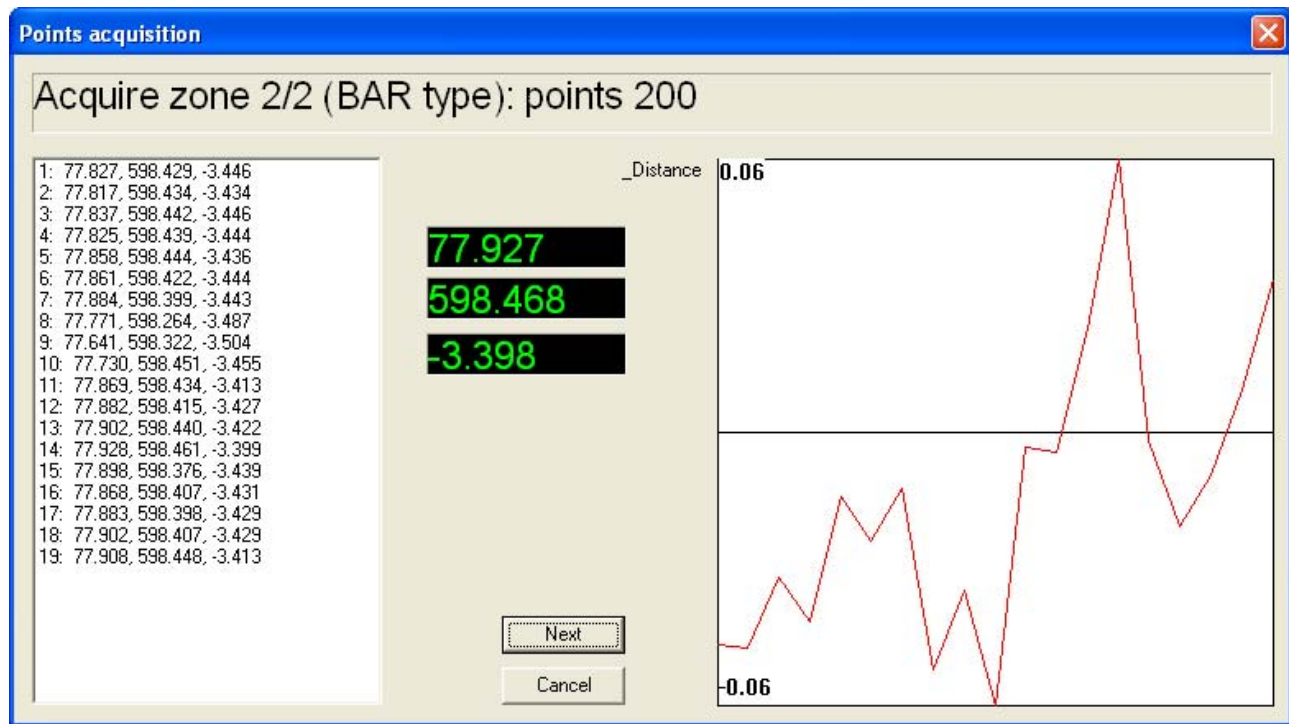
(example: M057recalibration2008-01-18.rep)

Send the file to Technical Support for re-calibration.

8. Acquisition for calibration bar menu

The acquisition with the calibration bar allows the complete re-calibration for the arm.

The procedure use the Baces3D calibration kit.



See the **Calibration procedure** manual for further information about the calibration procedure.

The acquisition is executed in two steps:

1. Rotating the calibration sphere in the calibration support.
2. Moving the calibration bar in the arm workspace.

Use the foot-pedals or the probe buttons to acquire the points:

- pedal/button 1 (blue) - acquires point
- pedal/button 2 (yellow) - delete the last point



At the end of the procedure, press the **Next** button and save the acquisition in a rep file.
 (example: M057recalibration2008-01-18.rep)

Send the file to Technical Support for re-calibration.