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WarpSurf Quick Start Guide

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V 1.0



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1 Main Screen

In figure you can see a typical instrument screen:



Figure 1. Main screen.

There are two horizontal bands in the upper and lower area of the screen, in those areas we find some quick access icons to some system functions plus others dedicated to the navigation between screens and between menus:


1. Back to **main menu**.
2. Back to the previous screen.
3. Pickup position indicator and quick access to the **positioning screen**.
4. Bluetooth status indicator and quick access to the **bluetooth management screen**.
5. Quick access to the automatic saving in the archive enable/disable screen.
6. Performs the capture of the current screen and saves it as image file on a connected usb device in **WARP_Screenshots** folder.
7. Current measure mode Indicator and quick access to the **measurement settings screen**. (R roughness mode, P profilometry mode)
8. Indicates the current battery charge status and gives access to the system info screen.
9. Indicates current time and gives access to the **date and time** settings window.
10. Displays current screen title.


The central area of the screen represents the main area of use of the instrument and can contains, according to the level in which we are, a menu composed by icons or one of the many system functions management screens.

2 How to

2.1 Calibrate the instrument

2.1.1 Roughness

To activate the calibration screen select the icon  from **main menu**, then from inside

the calibration screen select roughness mode with the icon .

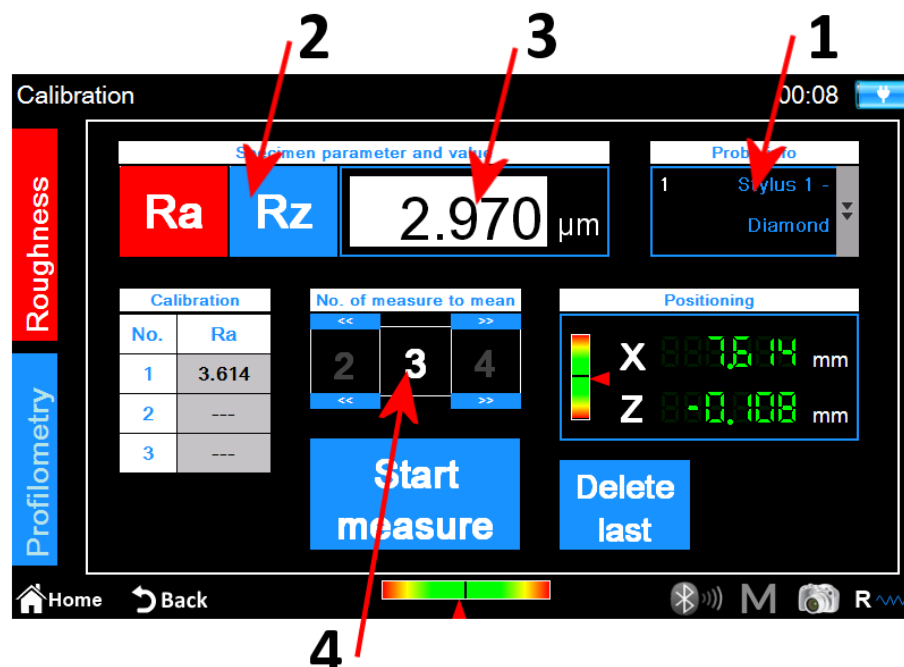
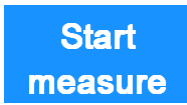


Figure 2. Roughness calibration screen.

The steps to be performed are the following:

1. Select the suitable pickup for roughness measurement by clicking on the pickup box.
2. Select the parameter on which calibrate the instrument.
3. Enter the nominal value of the specimen.
4. Select the number of measures to be performed.

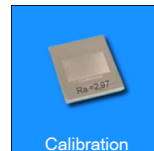
5. Perform each single measure by selecting the icon . It is possible to delete the last performed measure after having performed at least one measure by selecting the

icon .

6. At the end of the measurement cycle, to confirm and conclude the calibration operation select


the icon .

2.1.2 Profilometry



To activate the calibration screen select the icon  from **main menu**, then from inside

Profilometry

the calibration screen select profilometry mode with the icon .

The calibration process is realized in four steps:

Measure on roughness specimen

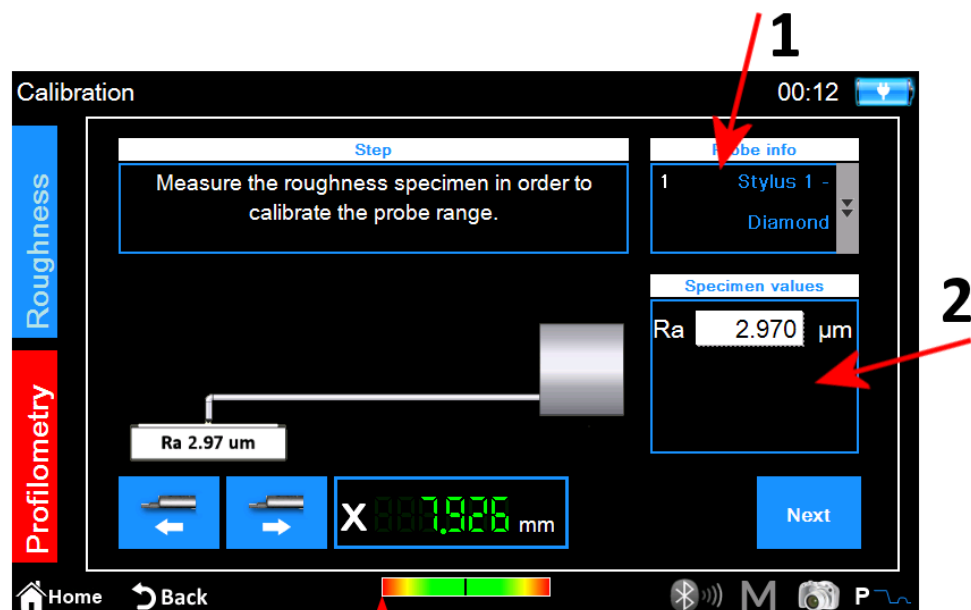



Figure 3. profilometry calibration screen, phase one.

1. Select the suitable pickup for profilometry measure.
2. Enter the nominal value of the roughness specimen.

3. Position the pickup on the roughness specimen then select the icon . The



instrument will perform the measure on the specimen.

Measure on the profilometry specimen: inserting the nominal values of the specimen

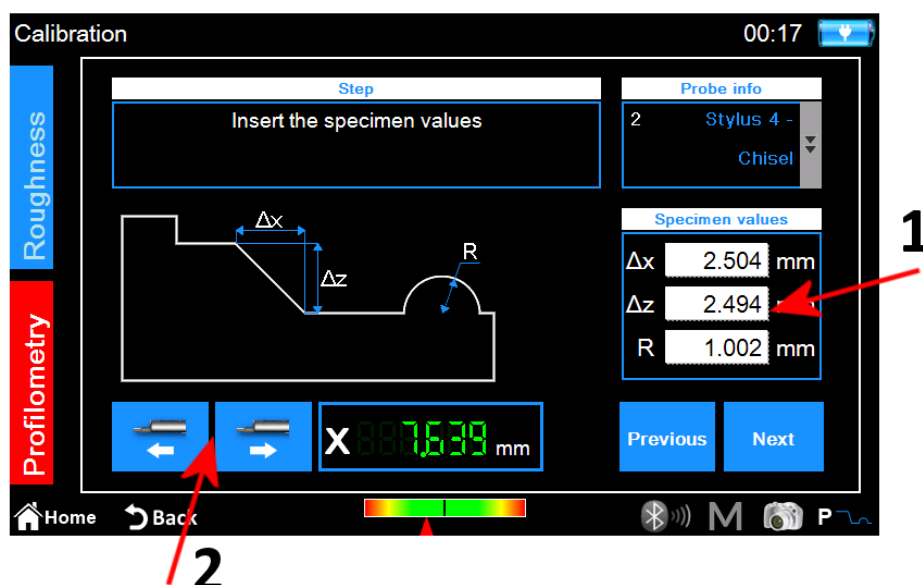



Figure 4. profilometry calibration screen, phase two.

1. Enter nominal values Δx , Δz and R of the profilometry specimen.
2. Perform if necessary the positioning of the traverse unit along the X axis.
3. select the icon .

Measure on the profilometry specimen: ramp higher zone

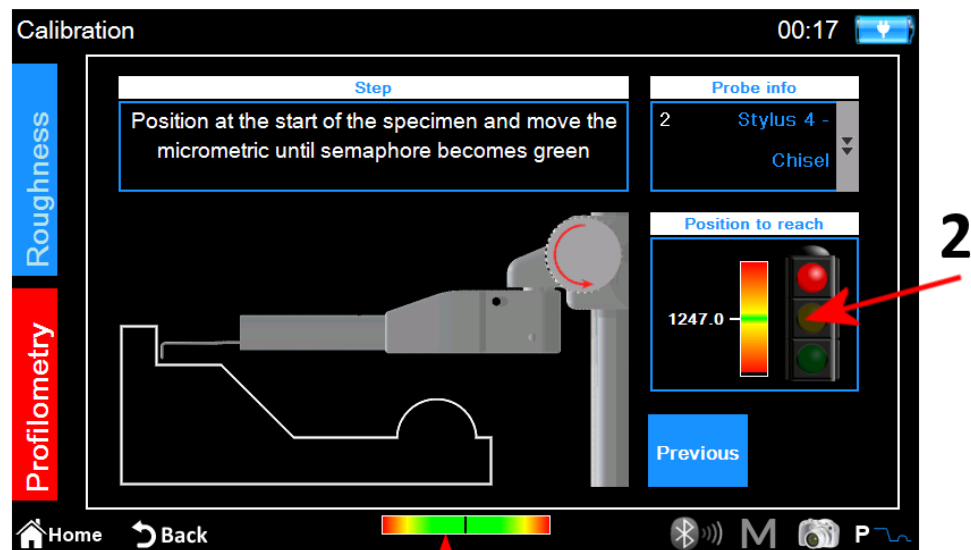



Figure 5. profilometry calibration screen, phase three.

1. position the pickup on the profilometry specimen on the starting high zone.
2. following the on screen indicator, rotate counterclockwise the pickup micrometer until the white line overlaps the green line located in the middle of the indicator scale. At this point the semaphore will become green and it will be possible to proceed to next step.
3. select the icon . The instrument will perform the measure by moving to the lower part of the specimen.

Measure on the profilometry specimen: ramp lower zone

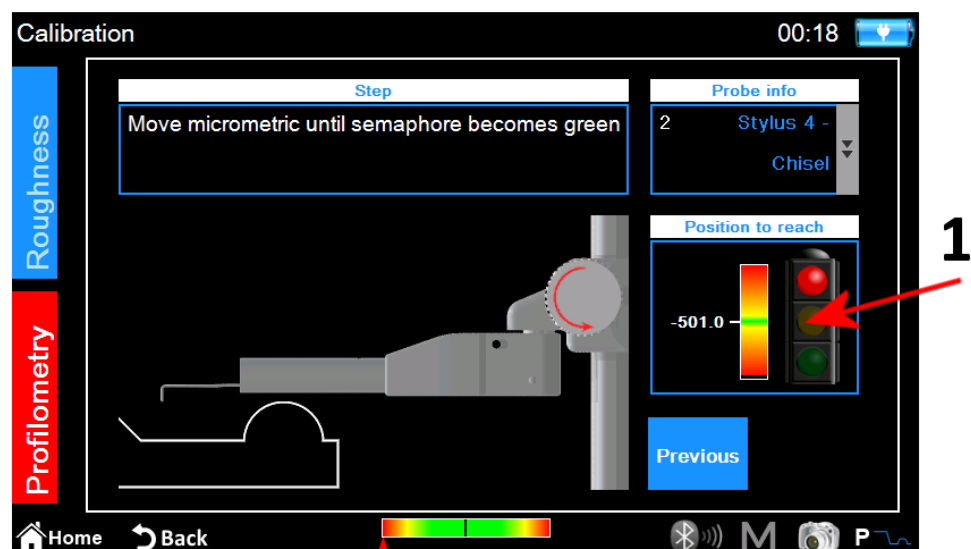


Figure 6. profilometry calibration screen, phase four.

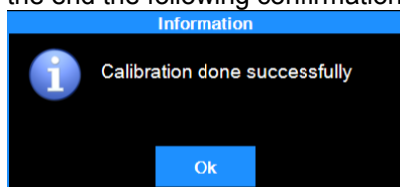
1. following the on screen indicator, rotate clockwise the pickup micrometer until the white line overlaps the green line located in the middle of the indicator scale. At this point the semaphore will become green and it will be possible to proceed to next step.

Next

2. select the icon

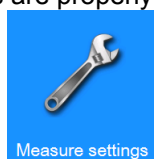
Measure on the profilometry specimen: cylinder

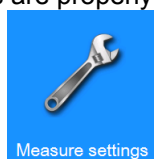
The instrument will proceed to measure the zone of the specimen containing the cylinder, at the end the following confirmation message will be displayed:



2.2 Perform the measure

Verify that the measure parameters are properly defined by activating from main menu the



relative setting screen with the icon  or directly with the quick function icon



(when the profilometry measure mode is active).



Select the measure mode with the icons  and , the current active mode icon background color became red.

If the selected mode is **roughness** we will get the following screen:

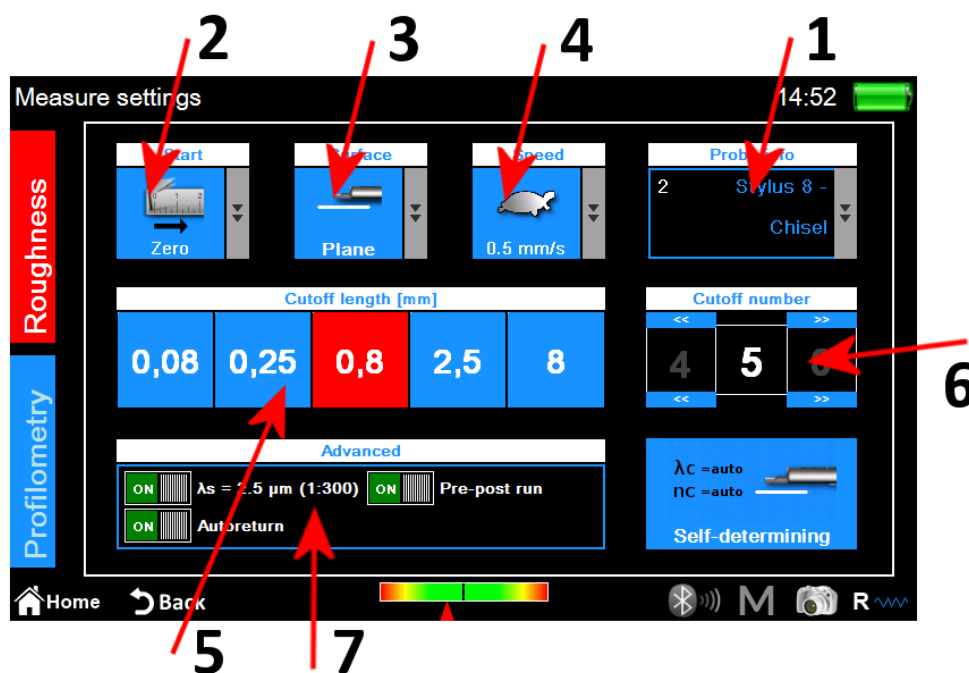
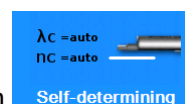


Figure 7. roughness measure parameters settings screen.

1. Pickup type selection.
2. Measure starting point selection.
3. Measuring surface type selection.
4. Measure speed selection.
5. Cut-off length selection, currently selected value icon background color is red.
6. Cut-off number selection
7. Advanced measure options.

Alternatively to the manual selection of the measure parameters selection it is possible to

make the instrument automatically set those parameters with the icon



If the selected mode is **profilometry** we will get the following screen:

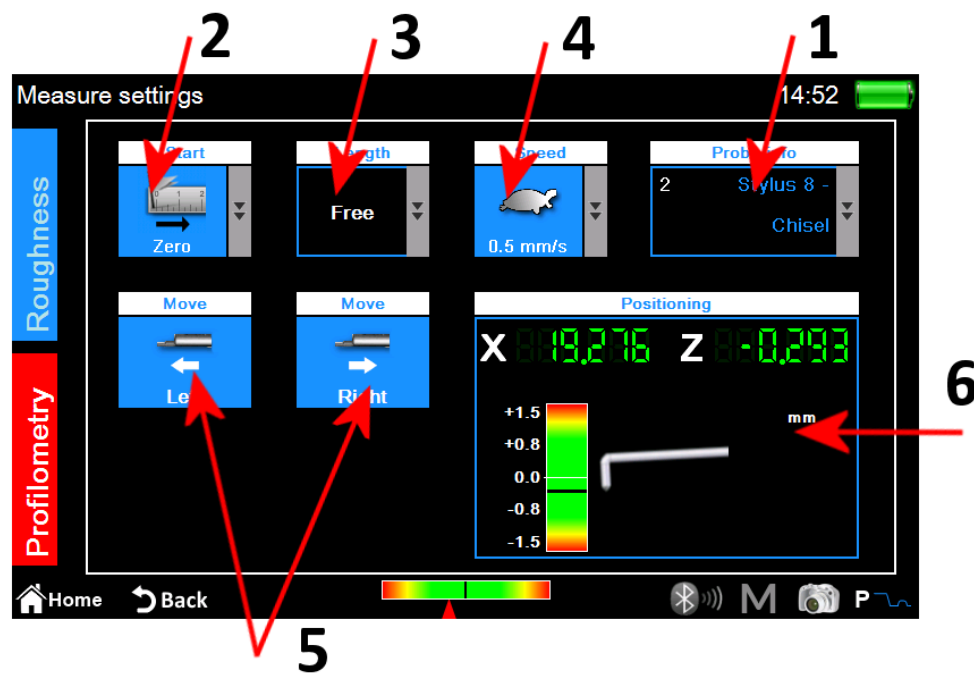



Figure 8. profilometry measure parameters settings screen.

1. Pickup type selection.
2. Measure starting point selection.
3. Measure length selection.
4. Measure speed selection.
5. Horizontal traverse unit movement.
6. Control panel of the instrument x and z axis position.

When the settings have been applied it is possible to start the centering management screen to perform a test measure and any traverse unit positioning operations by selecting the quick access icon :

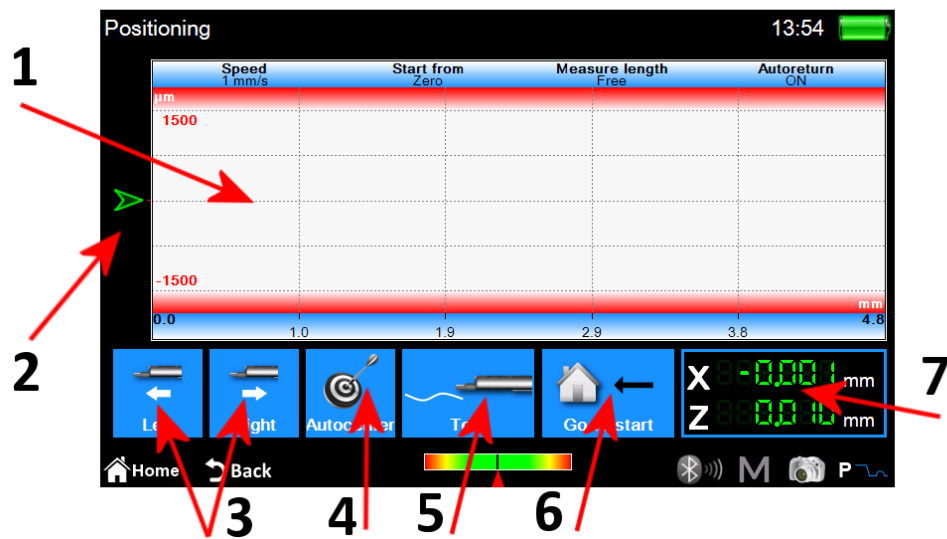


Figure 9. Positioning screen.

1. Measure preview display area.
2. Graphical indicator of the pickup tip position.
3. Traverse unit positioning.
4. Pickup automatic centering.
5. Test measure.
6. Positioning to the start measure point.
7. Numerical indicators of the pickup tip and traverse unit positions.

At the end of the operations, the measure is started by clicking on the physical button



2.3 Analyze the measurement results

2.3.1 Roughness

The roughness measure results screen is displayed automatically at the end of each measure or after a measure has been loaded from the archive or from the database. If the results of a measure have already been loaded in memory and you are on a different screen, it is possible

to go back anytime to the measure results screen by clicking on the physical button



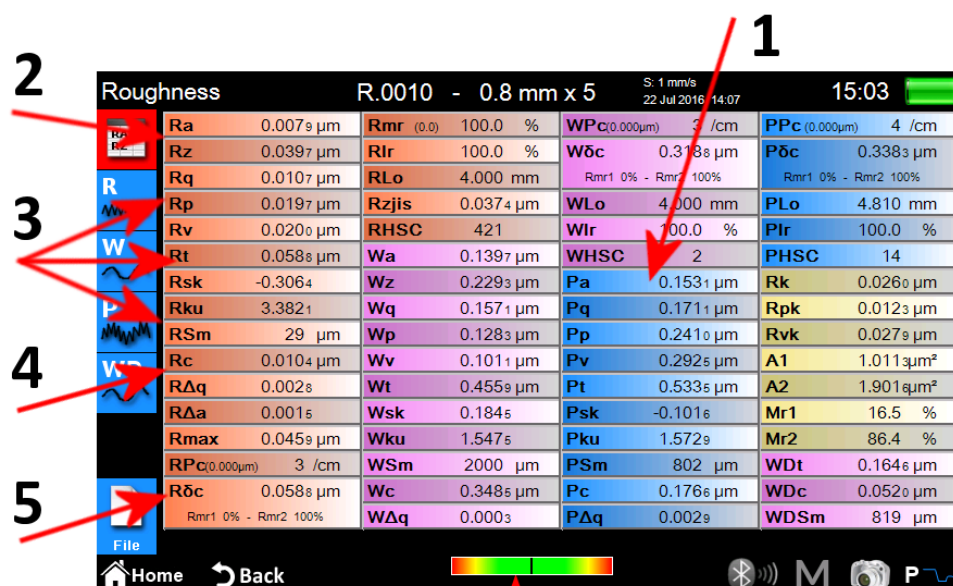


Figure 10. Roughness measure results screen in parameters view mode.

1. Parameters list display area.
2. Parameters view mode selection.
3. Profile view mode selection.
4. Dominant waviness view mode selection.
5. Activation of acquired data management icons list.

The current active view mode is displayed with red color background icon.

By clicking on a parameter you will get a little pop-up screen containing a brief description, both graphical and textual, of the parameter's calculation standard.

If you select one of the profile view modes the screen will be as follows:

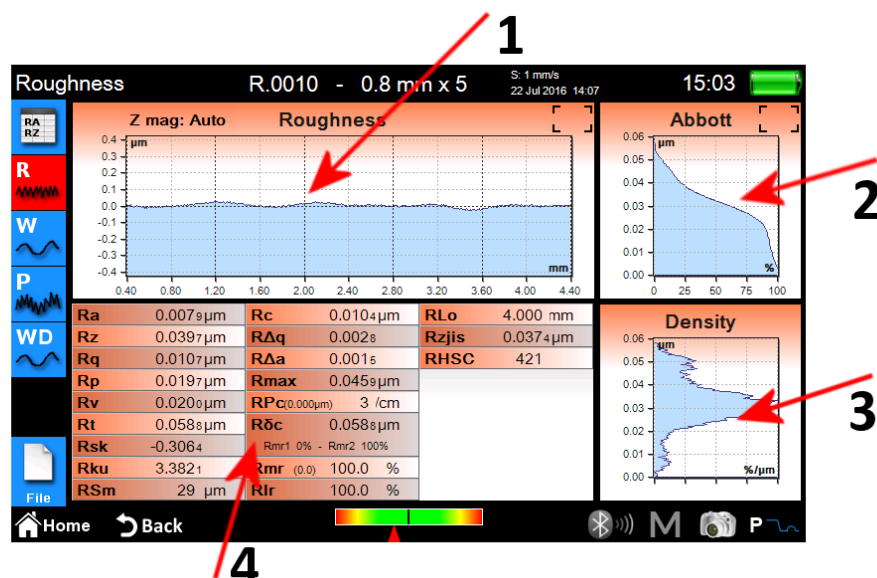


Figure 11. Roughness measure results screen in graph view mode.

1. Graph view area.
2. Bearing ratio view area.
3. Density curve view area.
4. Profile parameters view area .

If you select the Dominant waviness details display mode the screen will be as follows:

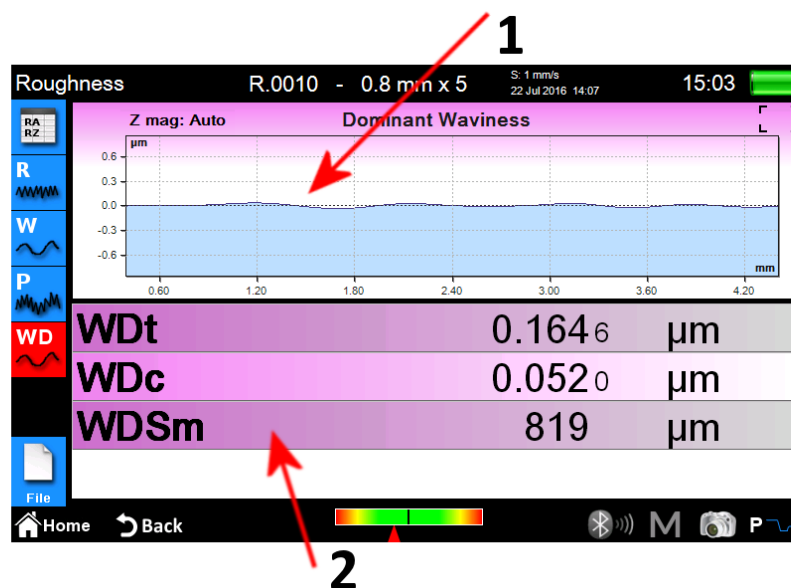


Figure 12. Dominant waviness details screen.

1. Graph view area.
2. Parameters view area.

2.3.2 Profilometry

The profilometry measure results screen is displayed automatically at the end of each measure or after a measure has been loaded from the archive or from the database. If the results of a measure have already been loaded in memory and you are on a different screen, it is possible to go back anytime to the measure results screen by clicking on the physical



button

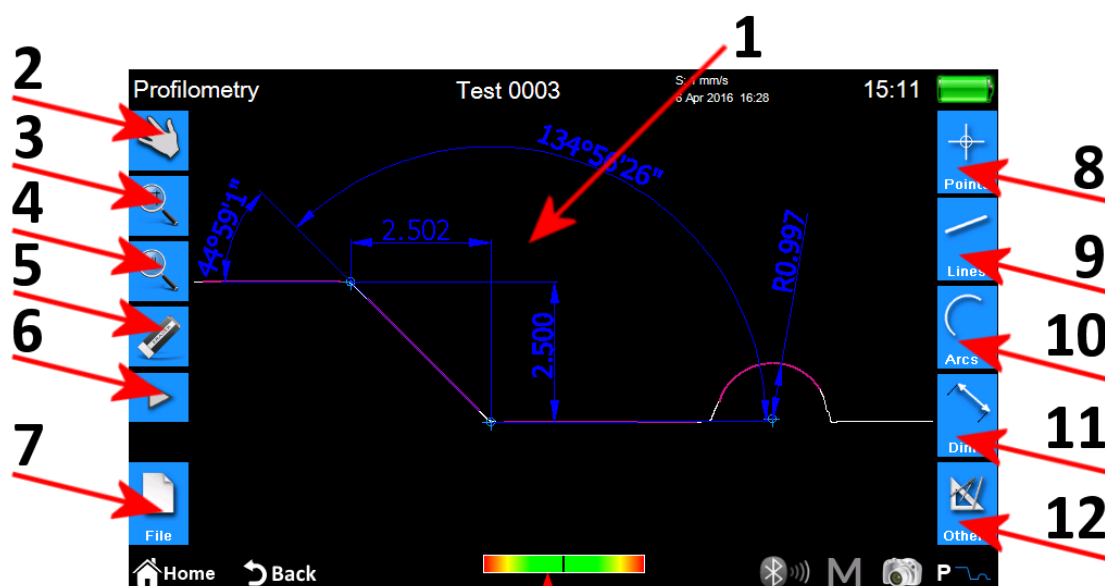


Figure 13. Profilometry measure results screen.

1. Profile view area.
2. Selection of the profile scrolling mode by dragging.
3. Selection of the profile zoom mode.
4. Selection of the profile overview mode.
5. Deletion of a selected entity.
6. Activation of an additional icons list for undo and restore operations management .
7. Activation of an additional icons list for save, export and print operations management.
8. Activation of an additional icons list used for inserting on the profile different entities of type point.
9. Activation of an additional icons list used for inserting on the profile different entities of type line.
10. Activation of an additional icons list used for inserting on the profile different entities of type arc.
11. Activation of an additional icons list used for inserting on the profile different entities of type dimension.
12. Activation of an additional icons list for managing some extra functions.

The operations that it is possible to perform on a single entity are the following:

1. **Insertion:** click on a point on the profile where you want to insert the entity.
2. **Selection:** click on any point of the area belonging to the entity to be selected, the related modification points will be displayed. If on the selected point two or more overlapping entities are present, a list with all the entities present in that point is

displayed, select the desired entity by clicking on the corresponding one.

3. **Movement of the modification points:** click on an entity modification point then drag in the desired direction.

2.4 Save/export measured data

To save the data acquired with the measure, from the profilometry or roughness results screen



select the icon **File**. The additional icons list for the management of save, export and print operations will be displayed, inside this list there are two icons for data save:



1. allows to save measure data in the **archive**, the on screen keyboard is displayed in which a file name with progressive number is automatically proposed, but it is possible to input a name of your choice. If you click on the confirmation icon the measure file is inserted inside the archive.



2. allows to save measure data in the **database**, here unlike the archive, measured parameters, through which data have been acquired, must correspond to those defined inside a **code**, which in turn must be previously created and activated inside the database. If the parameters are not corresponding an advice message will be displayed and the acquired data will not be added to the database. Also in this case it is possible to leave the suggested file name or input a name of your choice.

To export the data acquired with the measure, from the profilometry or roughness results



screen select the icon **File**. The additional icons list for the management of save, export and print operations will be displayed, inside this list, depending on whether you are inside the roughness or profilometry results screen you will get two different options:



1. **Roughness:** CSV data export (comma separated values) compatible with all the spreadsheet type software. Only the measured parameters data are exported.




2. **Profilometry:** DXF data export, compatible with all the generic CAD software. Only the profile object is exported, excluding all the other entities.

2.5 Print measured data

To print the data acquired with the measure, from the profilometry or roughness results



screen, select the icon **File**. The additional icons list for the management of save, export

and print operations will be displayed, inside this list select the icon  :

If we are in roughness results screen the related settings screen will be the following:

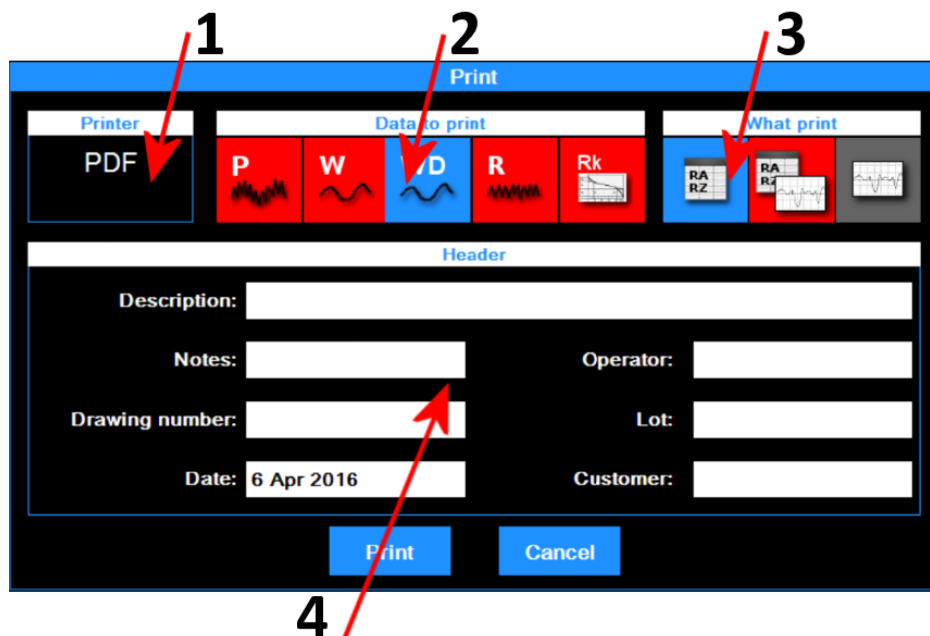
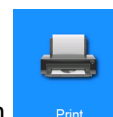


Figure 14. print options settings screen - roughness.

The operations to be performed are the following:

1. Printer to which data are sent. The choice of the printer must be previously done from



the main menu going to the related settings screen through the icon

2. Selection of the data types to be printed. You can select one or more elements at a time. Current active elements have red color background icon.
3. Selection of the print mode. Current active element has red color background icon.
4. Insertion of the print heading data.

If we are in profilometry results screen the related settings screen will be the following:

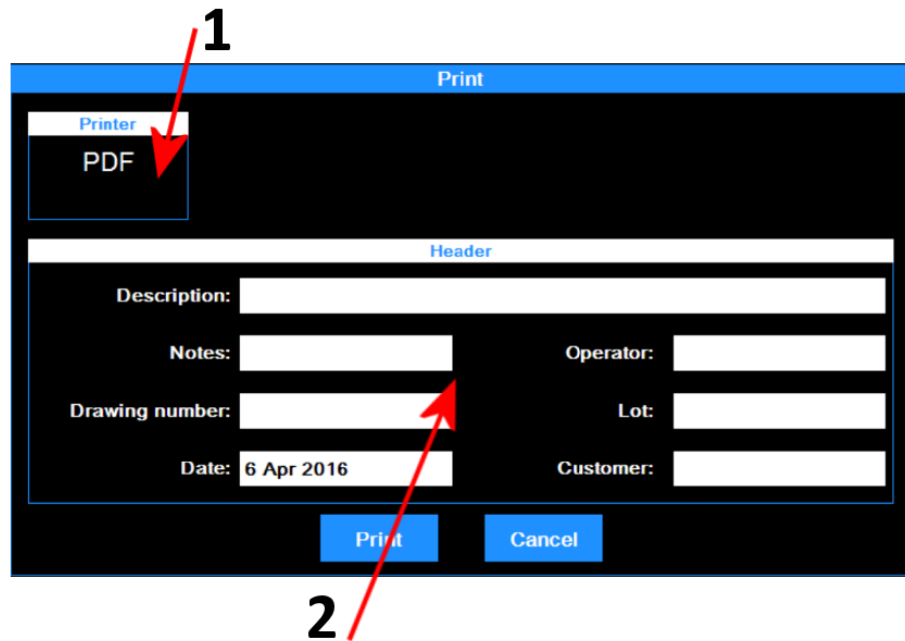
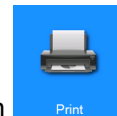


Figure 15. print options settings screen - profilometry.

The operations to be performed are the following:

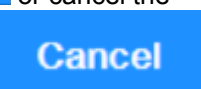
1. Printer to which data are sent. The choice of the printer must be previously done from



the main menu going to the related settings screen through the icon

2. Insertion of the print heading data.

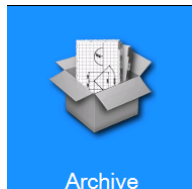
At the end to start the printing process select the icon



operation and go back to the results view screen by selecting the icon

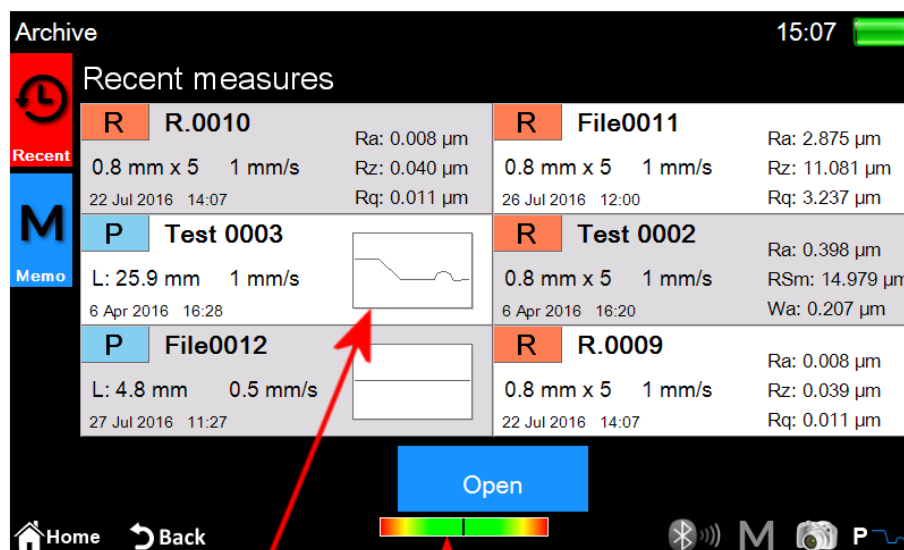
2.6 Load from the archive the measure results

To load from the archive the previously saved measure data, from main menu select the icon




Select the archive display mode through the icons **Recent** and **Memo**, the current active mode icon background color become automatically red.

If the selected mode is **Recent** we will have the following screen:



1
Figure 16. recent measurements management screen.

1. Recent measures list. To load a measure, click on the desired measure than select the icon , or, as an alternative double click directly on the desired measure.

The recent measures list can contain a maximum of six measures, each time the previously saved or just acquired measure data are loaded, those data are moved in the first position of the list, the followings elements go all back of one position. In this way the previous last element is deleted from the list, and if it was not previously saved it is also physically deleted from the archive.

If the selected mode is **Memo** we will get the following screen:

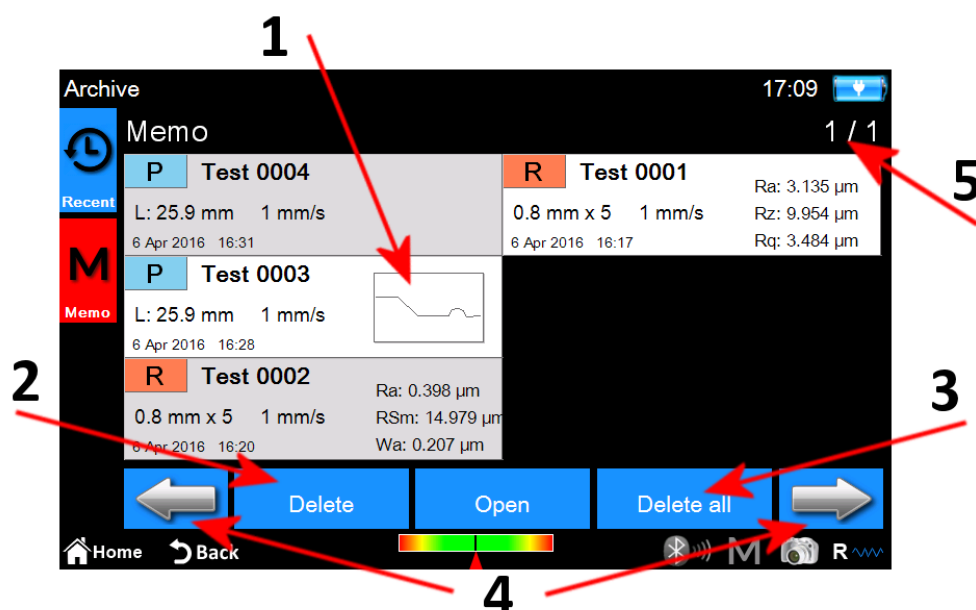
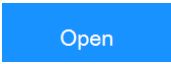


Figura 16. Schermata di gestione memo.

1. Memo measures list. To load a measure click on the desired measure to select it then select the icon , or, alternatively double click on the desired measure. Due to the possibility of having a lot of measures stored inside the archive, those are displayed in groups of 6 measures at a time.
2. Deletion of a selected measure.
3. Deletion of all the measures of the archive.
4. Navigation between the memo measures groups.
5. Actual group/total groups number indicator.

2.7 Load from the database the measure results

To load from the database the previously saved measure data, from main menu select the



The following screen will be displayed:

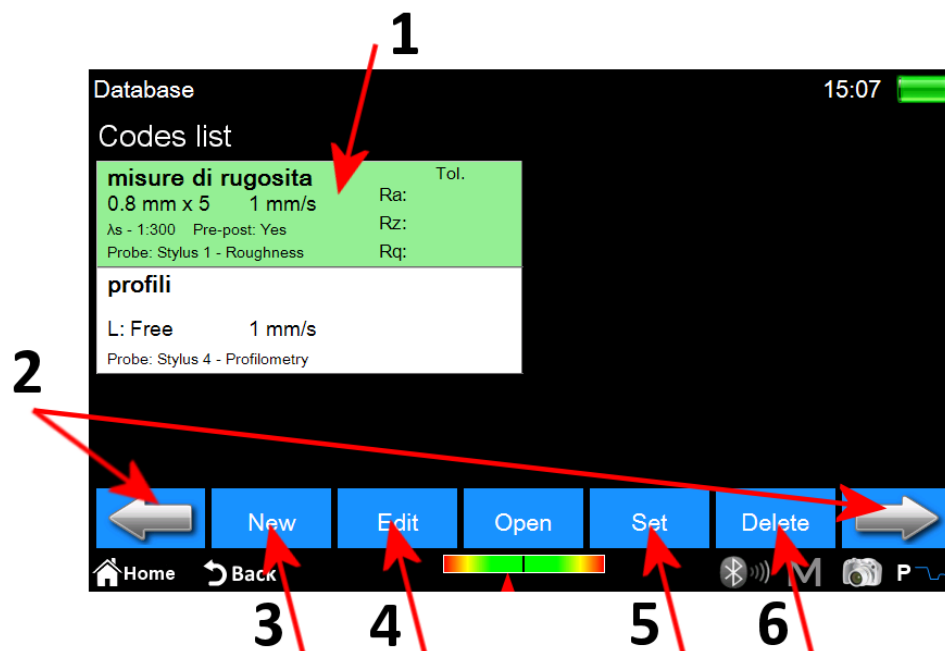
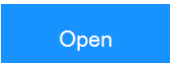


Figure 17. Codes management screen.

1. Codes list. To display the contents of a code click on the desired code then select the icon , or, as an alternative double click on the desired code.

2. Navigation between the codes group. Each screen can contain until a maximum of 6 codes displayed at the same time.
3. Creation of a new code. The parameters of the new code will include among other things all the current measure settings and those related to the displayed parameters selection and any associated tolerances.
4. Modification of a code. It is possible to modify the name and the description of the code.
5. Activation of the currently selected code. Each time a code is activated an advice message is displayed, telling the operator that all the measure parameters will be redefined according to the code characteristics, It is possible however to cancel the operation. Data of the acquired measures or of the measures loaded from the archive that have parameters consistent to those of the active code can be subsequently saved inside the database.
6. Deletion of the currently selected code.

When the code is selected and opened we will get access to the following screen:

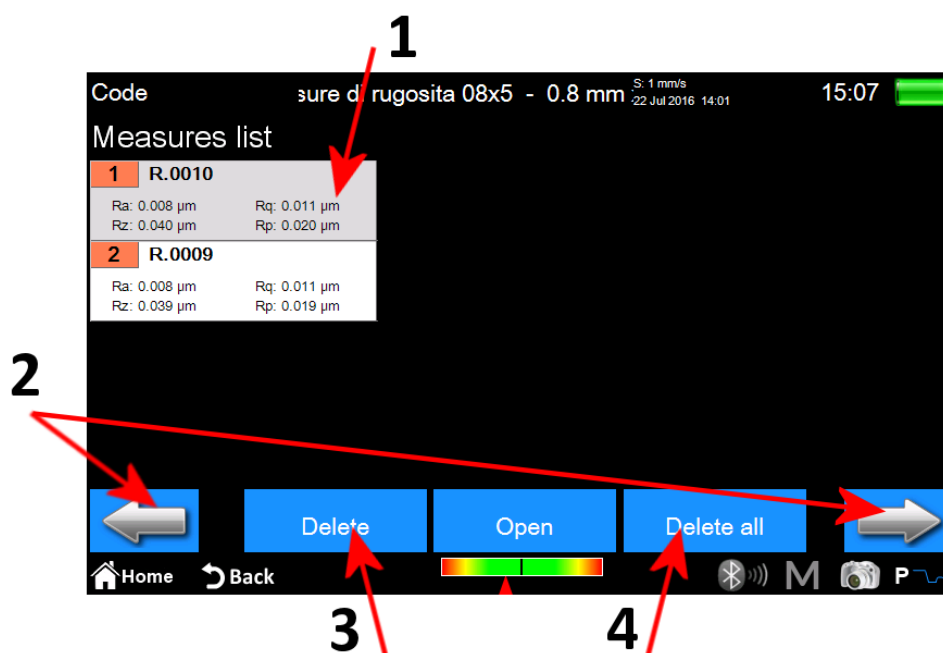
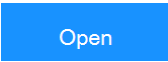


Figure 18. code's measures management screen.

1. Measure list. To load a measure click on the desired measure then select the icon  , or, alternatively double click on the desired measure.
2. Navigation between measures groups. Each screen can contain until a maximum of 12 measures displayed at the same time.
3. Deletion of the currently selected measure.
4. Deletion of all the measures of the code.

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