IML-RESI

PD-Series

Manual
and
Warranty Terms & Conditions

Issued 12-2024

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1 Introduction

1.1 Guarantee Conditions

The term of guarantee for the IML-RESI system is 12 months. Guarantee is based on the condition that the instrument will be used exclusively for the purposes it has been designed for and that the safety instructions below are observed. The manufacturer will not be liable for damages owing to inappropriate utilization or handling. The warranty for defects does not cover normal wear and tear (wearing parts and the like), nor damages that result from inappropriate or negligent handling and excessive strain that have not been provided in the contract of purchase. See the manufacturer's *General Terms of Business*.

The drilling instrument must not be opened by any person, only by the manufacturer or an authorized service company. Otherwise, the guarantee will become extinct.

1.2 Conditions of Use

The user recognizes the manufacturer's conditions of use as soon as he puts the instrument into service. The instrument must not be put into service, unless the present Instructions for Use have been thoroughly read. The manufacturer will not assume any liability for inappropriate handling, nor for damages caused by the application of the instrument for purposes that it has not been provided for, nor in case of non-observance of the safety instructions.

1.3 Instructions as to Application

1.3.1 Materials

The IML-RESI measuring instrument has been designed for use at wooden materials (wood, trees, poles). Inappropriate utilization may cause damages to the measuring system and / or the material to be examined.

1.3.2 Certainty of Reading

The measuring results gained by utilizing the IML-RESI are not self-explanatory, they require qualified interpretation. Any conclusions with respect to the examined object (e.g. tree) will be left to the sole responsibility of the person who examines. The manufacturer of the instruments will not be responsible for wrong interpretations and conclusions. He recommends the user to attend special seminars and training.

1.4 General

1.4.1 Conception

It was the intention of those who developed the IML-RESI system to make available a measuring system for practical utilization, which is easy to handle, sturdy, and precise at the same time.

1.4.2 System Structure

As to stability, the IML-RESI system has been designed to meet the special requirements of practical examination of trees, structural timbers, poles, and wooden structural materials. All control elements, required for operation, are located at the measuring instrument and, thus, within easy reach.

1.4.3 Moisture

You should generally avoid any contact of the IML-RESI measuring system with water and moisture, despite its splash-proof casing. Although the main components are protected against intake of water, you should – in order to avoid malfunction or failure – consider that electronic instruments are generally sensitive to moisture.

1.5 Application

1.5.1 How to Hold the Instrument

There is no special way of holding the IML-RESI measuring instrument. The measuring results do not depend on a certain orientation. You will, however, have to ensure your own stability during each measuring procedure, as, when the instrument penetrates the material to be examined, there will be forces acting in opposite direction of drilling.

1.5.2 Examination of Wooden Poles

If you examine a wooden pole, it is expedient to drill below soil level. The integrated adapter will serve as support for the instrument for utilization in inclined position.

1.6 Maintenance

On principle, maintenance of the IML-RESI measuring instrument will be carried out by the manufacturer or by an authorized service company. According to the conditions of guarantee, the drilling instrument will have to be sent in for a first inspection after one year at the latest. Afterwards, we recommend an inspection once a year.

2 Scope of Delivery

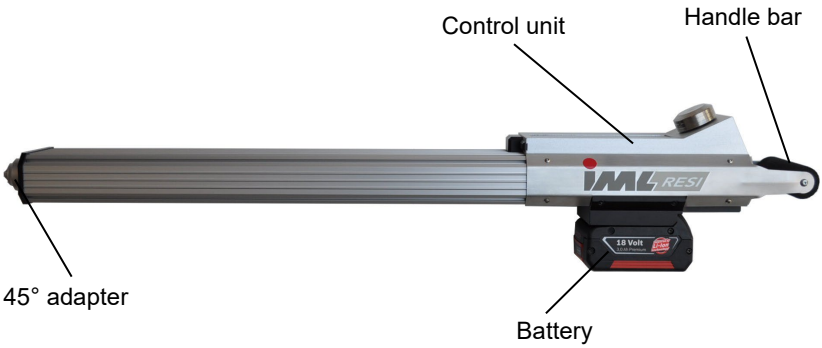
Prior to familiarizing yourself with the instrument, please check, whether the package contains all components comprised in the scope of delivery of the *IML-RESI PD-Series*:

- Case
- Drilling Instrument
- Battery charger
- 2 Batteries
- Quiver with drilling needles
- Universal pliers
- USB Data transmission cable
- IML Software Center
- Tool and spare drill chuck

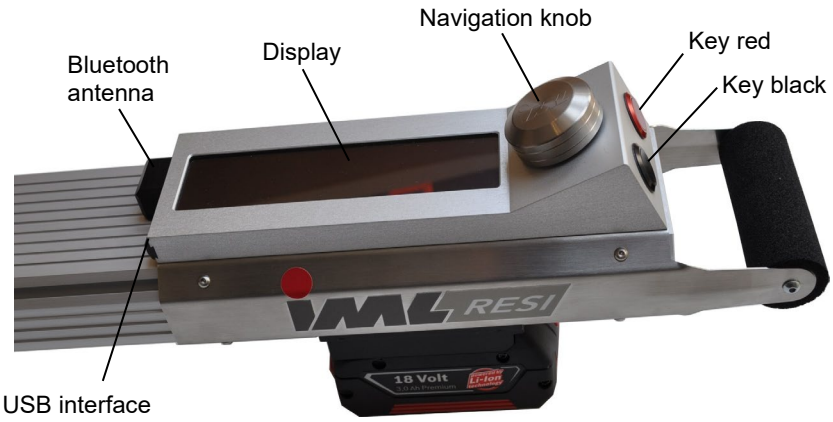
Should any of the above components should be missing, please contact your distributor.

3 System Components

3.1 Total View



3.2 Control Unit



4 Functional Description

4.1 Installing the Battery

Slide the battery into the battery mounting as shown in the picture until the latch is locked. Make sure the battery is correctly locked to avoid that it falls out during operation.



4.2 Removing the Battery

Make sure the instrument is switched off before removing the battery. If you remove it while the instrument is still on, the electronic itself will not be damaged, but modified settings will be lost. Press the release button for the battery and remove it backwards from the mounting.



4.3 Switching ON / OFF

Press the navigation knob to switch on the instrument and keep pressed until the following message will appear in the display



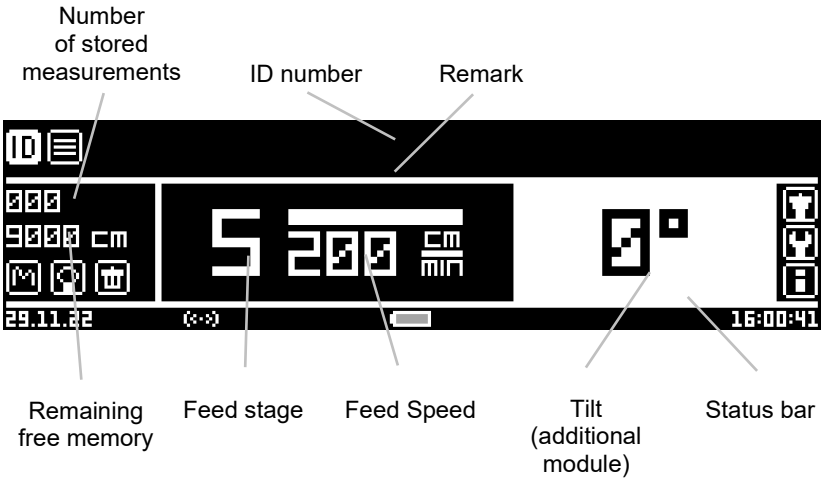
After a short delay the main menu will be displayed, depending on the settings, in normal or advanced mode.

Press again the navigation knob to switch off the device. Keep pressed until the control unit switches off. Only if the main menu is displayed, the device can be shut down.

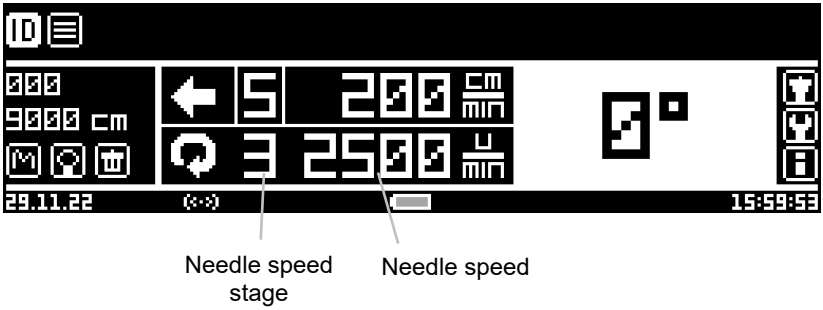
4.4 Main Menu

After switching on, the main menu will be displayed, depending on the settings, in normal or advanced mode:

Normal Mode:



Advanced Mode:



The advanced mode additionally shows the rotational needle speed.
(See page 4.17.4)

4.4.1 Navigation Knob

The navigation knob enables you to run different functions in the main menu. Turn the knob until the desired symbol is highlighted and press it to select the function.

The following functions are available:



Changes the ID number. You can choose a tree number or an individual project name for the ID number. This ID number will be saved with every measurement.



Changes the remark. You can choose an individual comment for the remark. This remark will be saved with every measurement.



Shows the measurement profile.



Shows the complete data of the last measurement.



Deletes the last measurement or all measurements.



Displays the needle change menu.



Displays the system control menu.



Displays the instrument information.

4.4.2 Black Key

The black key enables you to run the following functions in the main menu:

- Press briefly to change the feed speed or rather the needle speed (advanced mode).
- Keep pressed to switch between the feed speed and the needle speed (advanced mode).

4.4.3 Red Key

The red key enables you to run the following functions in the main menu:

- Press briefly to start a measurement. The safety pin must be pressed.
- Keep pressed to display the drilling settings menu. The safety pin must not be pressed.
- Press to set drilling depth. The safety button must not be pressed. Drilling depth setting must be activated.

4.4.4 Status Bar

The status bar is displayed in the lower part of the main menu:



1 2 3 4 5 6 7 8 9 10 11 12

1: Date

2: USB connection. This symbol appears when a computer or mobile device is connected via USB.

3: Bluetooth connection. The symbol will be shown shaded if the Bluetooth function is enabled but there is no connection to the computer or mobile device. The symbol will be shown brightly if a connection to the PC or mobile device has been established. The symbol will be invisible if the Bluetooth function is deactivated. Please refer to paragraph *Bluetooth* at chapter *System Control* for further information.

4: Automatic transmission. This symbol is shown if automatic transmission to the computer or mobile device is activated.

5: 45° adapter. This symbol is shown if the 45° adapter at the front of the instrument is pressed.

6: Preselected drilling depth. If you have preselected a drilling depth, it will be shown here.

7: Battery indicator. The symbol is blinking when the battery is very low and the remaining battery time is quite short.

8: Machine status. If the error code MAC, DRU, PRG, RES or UPD is displayed please contact the IML service.

9: OSF indicates that the feed unit optical sensor is soiled. You can continue working with the instrument but you should contact the service as soon as possible.

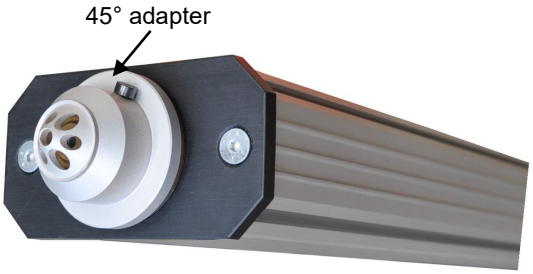
10: OSD indicates that the drill unit optical sensor is soiled. You can continue working with the instrument but you should contact the service as soon as possible.

11: MEM indicates that the lifetime of the internal memory is reached. In this case please contact the IML Service.

12: Time

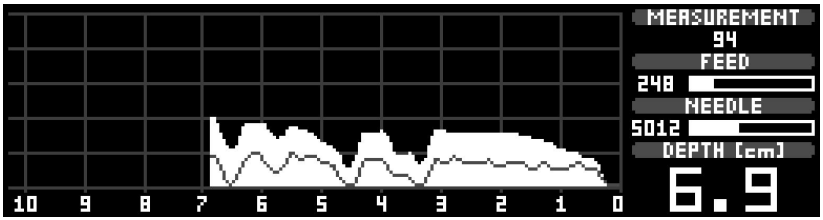
4.5 Making a Measurement

ATTENTION! Never start a measurement without the 45° adapter. Drilling without the 45° adapter will result in incorrect recording of measurement data.



Make sure that the main menu is displayed. Press the instrument against the object to be examined in order to press completely the 45° adapter. The security system will detect the compression and display it in the status bar of the main menu. You cannot start a measurement when the 45° adapter is not pressed.

After pressing briefly the red key, the needle will be tested (additional module), then the drilling will start and the following graph will appear:



On the left side is shown the preview curve. As shown in the picture above, the drilling curve (bright and filled) is displayed simultaneously with the feed curve (dark and not filled). The drilling curve is always displayed brightly and the feed curve (additional module) a little bit darker.

On the right side are shown the following data:

- Measurement number
- Actual feed speed and load of the feed motor
- Actual rotational speed of the needle and load of the drilling motor
- Drilling depth

The measurement will be interrupted when:

- the adapter sleeve is no longer pressed
- the red or the black keys are pressed
- the maximal drilling depth is attended
- the preselected drilling depth is attended
- the feed motor is overloaded
- the drilling motor is overloaded
- automatic needle retraction
- confirmation of the navigation button (emergency stop).

In that case, the needle will be retracted and the actual depth will be shown on the display:



As soon as the rear position has been attended, the main menu (standard setting), the measurement curve or the measurement data will be displayed.

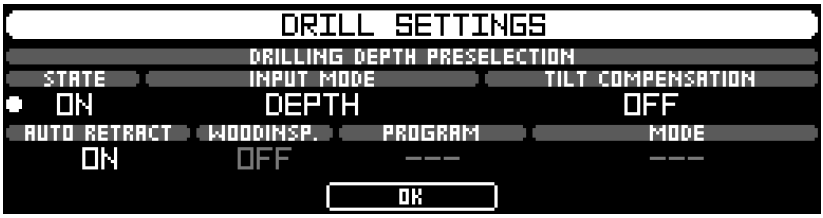
If you start a new measurement and the needle is not in the rear position (because the retraction was stopped) the needle will retract to the rear position. If the retraction distance is less than 10 mm, a new measurement will start automatically. If the retraction distance is greater than 10 mm, the main menu appears on the display as soon as the needle has reached the rear position. A measurement of ≤ 20 mm will not be saved.

The instrument will stop completely if you press the navigation knob during drilling or retraction (emergency stop).

4.6 Drilling Settings

To display the drilling settings menu, make sure that the main menu is displayed and the safety pin is not pressed.

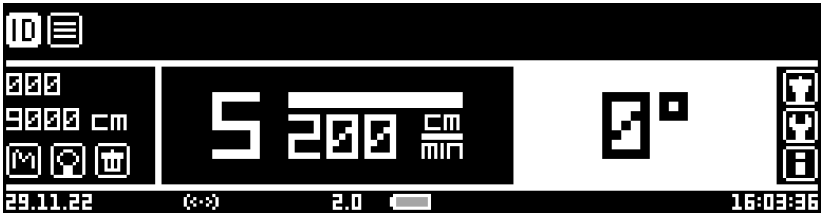
Keep pressing the red key until the dialogue appears:



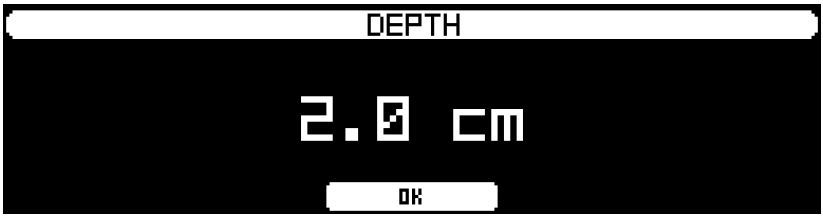
Use the **DRILLING DEPTH PRESELECTION** feature to set the drilling depth individually. (See chapter 4.6.1) Once the preselected depth is reached the drilling needle retracts automatically.

The **STATUS** option can be used to switch the drilling depth preselection on or off. If the drilling depth preselection is switched on, the preselected drilling depth is displayed in the status line in the main menu.

4.6.1 Setting the drilling depth



The set depth can be seen in the status bar in the main menu when the drilling depth preselection is active.



The set depth can be seen in the status bar when the drilling depth preselection is active.

Use the option **TILT COMPENS.** to switch the tilt compensation (included in the additional module TLT) on or off.

If the tilt compensation is disabled the drilling needle will always be extended to the adjusted drilling depth, irrespective of the tilt of the instrument.

If the tilt compensation is enabled, the penetration distance is always the same, irrespective of the tilt angle.

Input mode: the **MODE** function can be used to select whether the input is to be entered via the depth or the circumference (circumference of a circle).

Example:
You want to drill through a wooden pole with a diameter of 20 cm under 0 degrees and under 30 degrees. You want to drill exactly until the needle exit. You preselect the drilling depth to 20 cm. Making the measurement under 0 degrees the drilling is interrupted automatically at 20 cm. Making the measurement under 30 degrees, the drilling is not interrupted till the distance of 23 cm is reached because only at this distance the pole is pierced completely.

Beside the drilling depth preselection feature, there are additional features as follows:

Use the option **AUTO RETRACT** to turn the automatic needle retraction on or off. For more information please refer to the section *Automatic Needle Retraction* in the *System Control* chapter. (4.17.6)

The options **WOODINSP**., **PROGRAM**, and **MODE** are part of the additional module Wood Inspector and are described in a separate manual.

Press OK to return to the main menu.

4.7 Relative Mode Tilt Sensor

With the additional module Tilt Sensor (TLT) installed, the tilt of the unit will be displayed in the main menu. With each measurement the tilt will be stored and will also be displayed when reviewed through the PC program.

By default the angle display 0 degree correlates with the parallel alignment of the unit with the earth's surface. Given the object stands at a 90 degree angle to the earth's surface, the unit will display the correct angle to the object.

Given the object does not stand at a 90 degree angle to the earth's surface (for example a leaning utility pole, leaning tree, or a 45 degree strut of a half-timbered house) the angle displayed will not automatically be the correct angle to the object.

In order to make the according alignment of the unit to the object hold the unit to the object in a 90 degree angle. Now the unit shows the angle of the object. Press the red and black button simultaneously, when the safety button is activated, until a signal sounds. The display will now show 0° and the Relative Mode is activated.

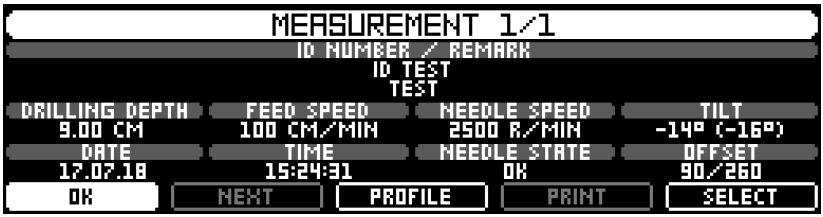
The **REL** symbol will appear next to the angle display:



Press the red and the black button simultaneously, when the safety button is activated, again to turn off the Relative Mode.

Please remember to disable the Relative Mode when working on a new object. Follow the Relative Mode procedures for each object individually. Otherwise the displayed tilt does not correlate with the tilt of the new object.

With the Relative Mode being activated, the angle of the object (absolute angle) will be displayed next to the tilt angle as follows:



4.8 Changing the Feed Speed

Make sure that the main menu is displayed.

Please observe that in the **advanced main menu** the feed stage has to be marked (bordering around feed stage). Keep pressed the black key to change the selection.

Press the black key briefly to change the feed stage. You can adjust 5 stages of feed speed. You can assign an individual speed to each stage. Furthermore, one or more stages can be masked completely. Please refer to paragraph *Feed speed* at chapter *System Control* for further information.

At the delivering, the following speeds are assigned to the feed stages:

1: 25 cm/min (10 inch/min)
2: 50 cm/min (20 inch/min)
3: 100 cm/min (39 inch/min)
4: 150 cm/min (59 inch/min)
5: 200 cm/min (79 inch/min)

4.9 Changing the Rotational Speed of the Drilling Needle (advanced mode)

Make sure that the advanced main menu is displayed. Please refer to paragraph *Needle speed* at chapter *System control* to change from normal to advanced mode.

Please observe that the rotational speed stage has to be marked (bordering around rotational speed stage). Keep pressed the black key to change the selection.

Press the black key briefly to change the rotational speed. You can adjust 5 stages of rotational speed. You can assign an individual rotational speed to each stage. Furthermore, one or more stages can be masked completely. Please refer to paragraph *Needle speed* at chapter *System control* for further information.

At the delivering, the following speeds are assigned to the rotational speed stages:

1: 1500 rpm
2: 2000 rpm
3: 2500 rpm
4: 3500 rpm
5: 5000 rpm

Typically, the following settings are applied:

Tree examinations generally 2500 rpm.
When checking wooden poles, 3000 rpm are usually used.
The speed should only be adjusted in exceptional cases.

4.10 Changing the ID Number

To change the ID number, highlight the following icon on main menu:



The edit mode for changing the ID number will appear, after the navigation knob has been pressed:



You can select the desired character by the help of the navigation knob. For applying the chosen character press the knob. Navigate to **DELETE** and press the navigation knob to delete a character. The last character will be deleted. Keep on pressing the navigation knob if you want to erase the complete ID.

You can apply data by pressing the button **OK** or cancel this progress by pressing the button **CANCEL**.

4.11 Changing the Remark

To change the remark, highlight the following icon on main menu:



The edit mode for changing the remark will appear, after the navigation knob has been pressed:



You can select the desired character by the help of the navigation knob. For applying the chosen character press the knob. Navigate to the button **DELETE** and then press the navigation knob to delete a character. The last character will be deleted. Keep on pressing the navigation knob if you want to erase the complete remark.

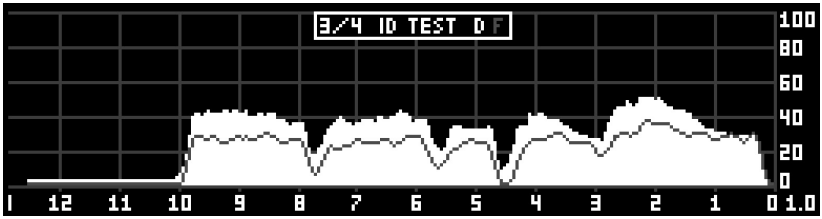
You can apply data by pressing the button **OK** or cancel this progress by pressing the button **CANCEL**.

4.12 Showing a Profile

Select the following symbol in the main menu to show the profile of the last measurement:



Press the navigation knob to show the profile:



In the upper bar the measurement number, the ID number as well as a measurement curve legend will be displayed. A bright **D** means that the drilling curve will be displayed brightly. A dark **F** means that the feed curve will be displayed darkened.

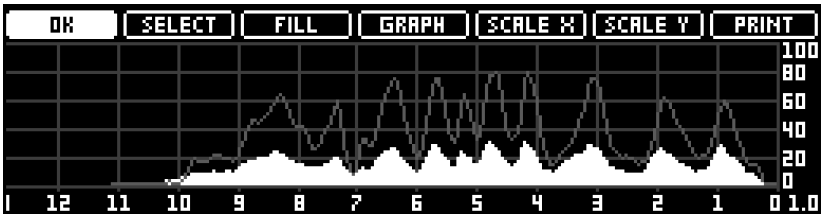
The graph can be moved by the help of the navigation knob if it cannot be shown completely on the display due to the drilling depth. Therefore turn the navigation knob to the right or to the left. The more you turn to a direction the higher is the speed with which the graph is moved. Turn the navigation knob in the opposite direction or press it to stop scrolling.

Pressing briefly the red or black key, you can navigate through the profiles of all measurements.

Keep pressed the red button to change the x-axis scale. This function is only available if the additional module SCL (scale package) is installed.

Keep pressed both buttons in order to print out the displayed measurement on the Bluetooth printer. Therefore, switch on the printer before. This function is only available if the additional module PRT (Bluetooth printer) is installed.

Keep pressed the black button to change the graph settings. The toolbar appears:



Mark the corresponding button and press the navigation knob to select the function. Now, you have different options. After having chosen the desired option, you can either press briefly the knob to select the option and go back to the toolbar or keep pressed the knob to select the chosen option and to close the toolbar at the same time.

The toolbar offers the following functions:

OK: Closes the toolbar.

SELECT: You can use this function to select specific measurement profiles more quickly.

FILL: With this function you can decide if the area below the curve has to been filled up or not. Filling up the area will make it easier to read the graph at strong sunlight.

GRAPH: This function allows choosing which curves are displayed. This could either be the drilling curve, the feed curve or both together.

SCALE X: If the additional module SCL is installed, this function enables you to change the scale of the x-axis. You can opt for **1:1**, **Device length** and **Measurement length**.

SCALE Y: If the additional module SCL is installed, this function enables you to change the scale of the y-axis. You can opt for **1.0**, **1.5**, **2.0**, **2.5**, **3.0** and **AUTO**. If you opt for AUTO the amplitude will be scaled automatically with the best factor.

PRINT: If the additional module PRT is installed, this function makes it possible to print out the measurement on the Bluetooth printer. Therefore, switch on the printer before selecting this option.

4.13 Showing a Measurement

Select the following symbol in the main menu to show the data of a measurement:



Press the navigation knob to show the measurement data:



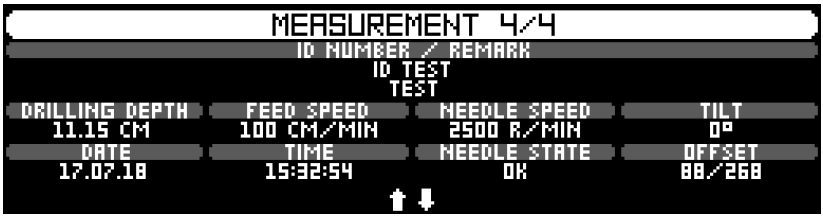
Press **OK** to go back to main menu.

The button **NEXT** is only available if you have installed the additional module WI. In this case it is possible to display the result of the Wood Inspector.

Select the button **PROFILE** to show the measurement profile. Please read the paragraph above *Show Profile*.

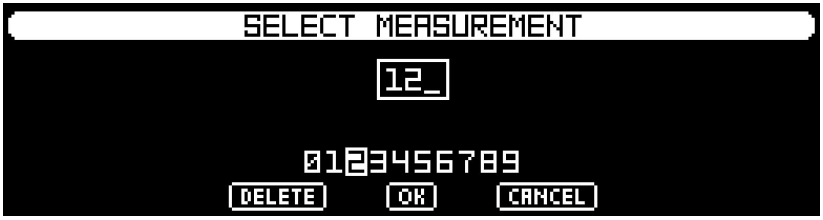
With **PRINT** you can print out the measurement on the Bluetooth printer. This option is only displayed, if the additional module PRT (Bluetooth printer) has been installed.

With the button **SELECT** you can open another measurement. After having chosen this option the display changes into scroll mode:



Turn the navigation knob to the right or to the left to select the desired measurement. The number of the displayed measurement is shown in the upper edge of the display. Press the knob to select the measurement.

Mark **SELECT** and keep on pressing the navigation knob to select a measurement by its number. The menu for the edition of the measurement number will appear:



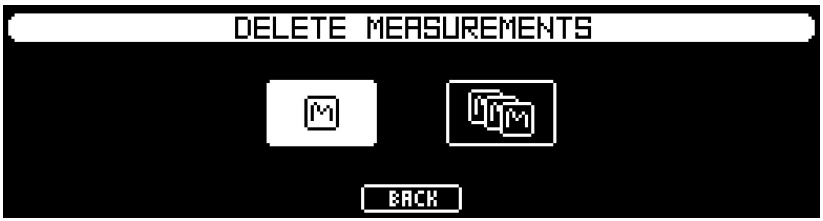
After entering the number of the desired measurement press **OK**.

4.14 Delete Measurements

Select the following symbol in the main menu to delete measurements:



Press the navigation knob and the following menu appears:



You can choose between the following options:



Delete the last measurement: Press this button and confirm the following confirmation prompt to delete the last measurement.



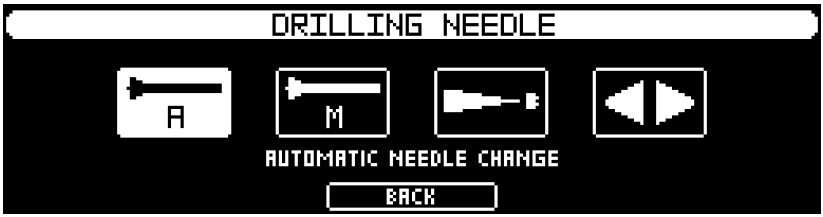
Delete all measurements: Press this button and confirm the following confirmation prompt to delete all the measurements.

4.15 Menu Drilling Needle

Select the following symbol in the main menu to show the drilling needle menu:



Press the navigation knob and the following menu appears:



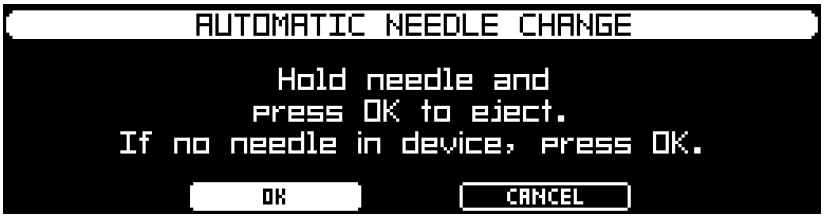
Please also see the enclosed maintenance instructions and the published instructional videos.

4.15.1 Automatic Needle Change

Select the following symbol to start the automatic change of the drilling needle.



The drilling needle is extended till it reaches the changing position. Then the following message appears:



Hold the blade of the drilling needle with the universal pliers and press the **OK** button. If no needle is in the machine, press also the **OK** button.

The following message appears, after the drilling needle has been unlocked:



Remove the old needle of the instrument and insert a new one. Hold the new drilling needle on the blade with the universal pliers (like you did when you removed the needle) and press on the needle against the chuck. Now press the button **OK**.

The drilling unit locks the needle and turns off automatically. Only release the drilling needle when the feed unit begins to retract backwards to the end position.

4.15.2 Manual Needle Change

By selecting this icon, you can unlock and lock the needle manually.



If you want to remove the needle from the device, hold the needle on the blade with the pliers, pull it slightly out of the device and then press the icon. After pressing, the needle is released and you can pull it out of the device.

If you want to lock the needle, hold the needle on the blade with the pliers and push it slightly towards the chuck. After clicking the icon, the needle is locked. Hold the needle in place until the device beeps to confirm the process.

4.15.3 Automatic Telescope/Chuck Change

To start the automatic telescope/chuck change, select this icon.



Follow the instructions on the display.

Please also see the enclosed maintenance instructions and the published instructional videos.

4.15.4 Move Feed Unit

Select this button to move the feed unit forward or backwards manually.



You can adjust the speed and the direction by turning the navigation knob. Press either the navigation knob or the black or the red key to stop the movement.

4.16 Device Information

Select this button to display the information about the device:



After pressing the navigation button, all device information will appear.



4.17 System Control

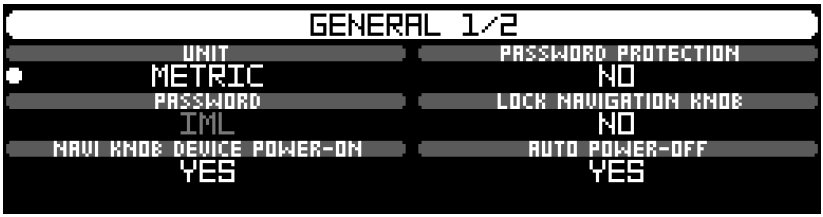
Select this button to show the system control menu:



The following describes the options of this menu.

4.17.1 General

After having chosen this point of the menu the following dialogue appears:



The option **UNIT** offers the possibility to change between the metric and imperial system.

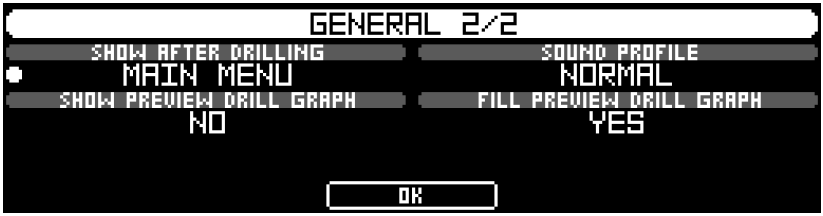
With **PASSWORD PROTECTION** you can decide if a password is required when the instrument is switched on. Thus, this option enables you to protect the instrument against unauthorized use. If you have activated this option it is possible to assign a password in the field **PASSWORD**. On delivery, the password is **IML**.

The option **LOCK NAVIGATION KNOB** offers the possibility to activate an automatic lock for the navigation knob and to prevent an accidental manipulation of the instrument. If this function is enabled, the navigation knob will be locked after 10 seconds of inactivity. If you turn or press the navigation knob after this period of time, a relevant message will appear. If you want to reactivate the knob keep on pressing it and answer the request with **Yes**. Please regard that the automatic lock is only active in the main menu.

The option **NAVI KNOB DEVICE POWER-ON** allows turning on the unit by pushing the navigation knob. If **NO** is selected the unit can only be turned on by pushing the red or the black button. This will ensure that the unit will not be turned on accidently.

With the option **AUTO POWER-OFF** the electronic unit will be switched off after 10 minutes of inactivity. Select **YES** if the period between the measurements is longer or if you want to ensure that the instrument does not keep switched-on accidentally and the battery runs down. Deactivate the function if you want to ensure that the instrument is always ready when you start a measurement and that it has not been switched-off in the meantime.

Turn the button to the left to display page 2 of the menu:



The option **SHOW AFTER DRILLING** allows you to specify whether the main menu, the profile or the measurement data is displayed after drilling.

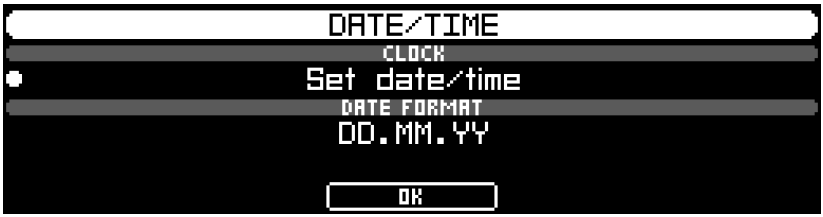
With **SOUND PROFILE** you can chose between a normal and a low acoustical confirmation of your entry. Errors and alarm signals continue being normal, even if you opted for **SILENT**.

With **SHOW PREVIEW DRILL GRAPH** you can decide if you want the graph to be shown during the drilling (preview). This does not have any influence on the settings you have made for displaying the profile.

With **FILL PREVIEW DRILL GRAPH** you can decide if you want the graph to be filled up yet during the drilling (preview). This does not have any influence on the settings you have made for displaying the profile.

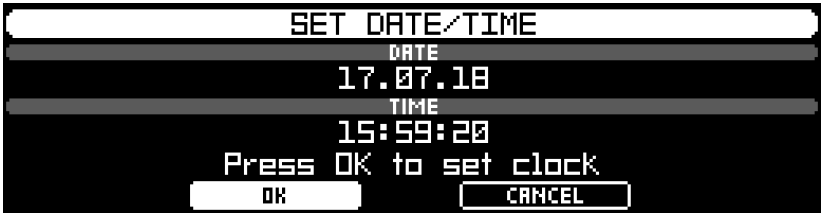
4.17.2 Date/Time

The following dialog appears after selecting this menu item:



With the menu item **DATE FORMAT** it is possible to choose the display format for the date.

After selecting the menu item **Set date/time** the dialogue for changing the date and the time will appear:

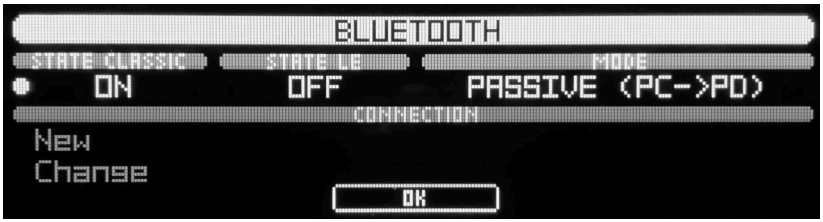


Please enter first the date and then the time. After pressing **OK** you have to confirm another time with **OK** to save the new time settings.

Please regard that date and time settings are synchronized with the PC time when measurements are transferred to your PC.

4.17.3 Bluetooth

After selecting this menu the following dialog appears:



The **STATUS** option indicates which Bluetooth system is switched on or off.

CLASSIC status: transmission to PD-Tools/Pro

If data transmission to PD-Tools / PD-Tools Pro is to be used, select **STATUS CLASSIC ON** and **STATUS LE OFF**.

Status LE: Transfer to IML Studio

For transfer to IML Studio, select **STATUS LE ON** and **STATUS CLASSIC OFF**.

The **MODE** option can be used to determine whether either the computer or the IML-RESI establishes the Bluetooth connection.

Passive Mode (recommended):

The passive mode is the default setting. In the passive mode the device will behave as any other regular Bluetooth equipment.

Search for new Bluetooth devices in the Bluetooth menu on your computer to connect with the IML-RESI and for the usage of PD-Tools/Pro. Once the IML-RESI is found and selected a key is requested. Please enter **0000**.
For the Bluetooth connection with IML Studio, the pairing must take place in the IML Studio app.

Please make sure that your computer has the latest Blue-tooth driver installed.

Aktive Mode:

The IML-RESI will establish the connection to your computer automatically when in active mode. The device will also re-connect automatically if the connection was lost. Under certain circumstances the active mode has some advantages over the passive mode. To make full use of these advantages the computer needs to meet some requirements. Therefore please refer to the IML-Service Team to ensure that the active mode works properly.

With the menu item **CONNECTION** you can add a new connection or change the actual connection.

If there is stored at least one connection the following dialogue will appear when you select the menu item **New:**



Select the storage location where the new connection has to be stored. There can be stored at most 3 connections. If you select a storage location that is already used by another connection, this connection will be overwritten by the new connection.

After selecting the storage location, new Bluetooth devices will be searched. If an instrument is in reach, it will be displayed. Confirm to establish a new connection to the indicated instrument. Select **NO** to display the next instrument that has been found.

If you have selected **YES,** the connection process will be started. A window will appear on your PC requesting a pin. Please enter **0000** on your PC. After selecting OK, the electronic unit will try to establish a connection with the PC. If the connection process was successful, the connection can be stored.

Select the menu item **Change** in the Bluetooth dialogue to change the existing connection. The following dialogue will appear:



In this dialogue you can choose the instrument to which the Bluetooth connection will be established in the future. Select **OK** to close the dialogue.

All modifications of the Bluetooth configuration will not be applied before you have closed the Bluetooth menu and the main menu is displayed.

4.17.4 Feed Speed

After having chosen this point of the menu, the following dialogue appears:



Each of the 5 feed speed stages is pre-adjusted. The picture above shows the standard adjustment.

Select a stage and press the navigation knob to change the corresponding speed. The following dialogue enables you to enter a new speed. The minimal feed speed is 15 cm/min and the maximal feed speed 200 cm/min.

4.17.5 Needle Speed

Depending on the adjusted mode (normal or advanced), the following dialogue appears after having chosen this point of the menu:

Normal mode:



In normal mode you can chose a rotational speed for the drilling needle between 1500 rpm and 5000 rpm.

Select **MODE** and press the navigation knob to change between the normal and advanced mode.

Advanced mode:



Each of the 5 rotational speed stages is pre-adjusted. The picture above shows the standard adjustment.

Select a stage and press the navigation knob to change the corresponding rotational speed. The following dialogue enables you to enter a new speed. The minimal rotational speed is 1500 rpm and the maximal rotational speed 5000 rpm.

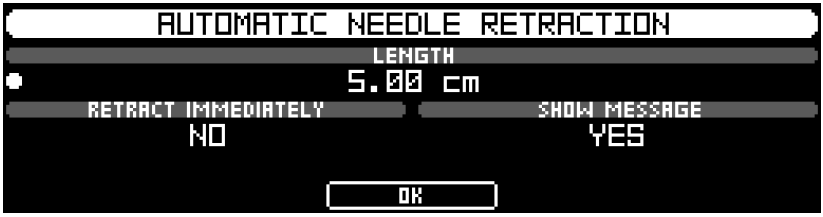
The setting and the recommended speeds can be found in the chapters 4.8 and 4.9.

4.17.6 Automatic Needle Retraction

Often, in practice, it happens that the drill leads through a large cavity. When hitting wood at the end of it, there is a high probability that the needle will bend and break when drilling is continued.

In this case the automatic needle retraction feature provides the possibility to interrupt the drilling automatically to prevent the needle from breaking.

The following dialog appears after selecting this menu item:



The option **LENGTH** determines which minimal length the cavity must have to activate the automatic needle retraction.

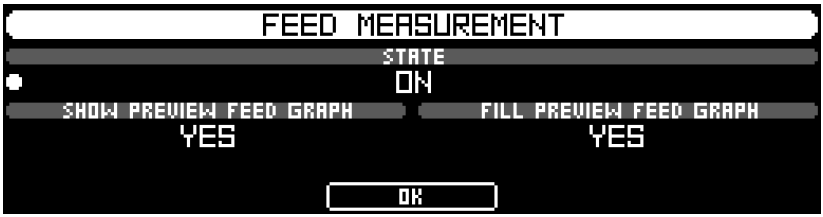
By selecting **Yes,** the option **RETRACT IMMEDIATELY** allows to stop the measurement and retract the needle immediately when cavity is detected. When selecting **NO** the measurement will be stopped when the needle hits wood at the end of the cavity.

The option **SHOW MESSAGE** determines whether a message is shown in case a measurement is stopped through automatic needle retraction.

The automatic needle retraction feature needs to be activated in the drilling settings (see chapter *Drilling Settings*).

4.17.7 Feed Measurement (Additional Module FEED)

After having chosen this point of the menu, the following dialogue appears:



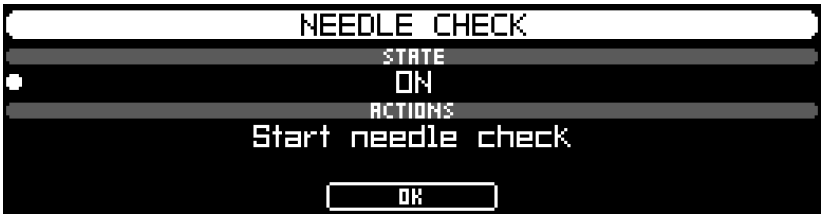
With **STATE** you can opt for recording the feed force while measuring or not. If you have activated this option the free recording length reduces by half.

With **SHOW PREVIEW FEED GRAPH** you can opt for displaying the feed graph while drilling or not.

With **FILL PREVIEW FEED GRAPH** you can opt for filling the feed graph that is displayed while drilling or not.

4.17.8 Needle Check (Additional Module NC)

After having chosen this point of the menu, the following dialogue appears:



STATE indicates if the needle check is on or off. If needle check is enabled, the needle will be checked before every drilling and the needle state will be shown. The result (good or bad) will be saved together with the measurement and will be displayed in PD-Tools after the transmission to the computer.

With menu **ACTIONS**, you can start the needle check. The needle is checked and the result and the pullback length will be shown. The pullback length is a control value that provides information as to whether the needle needs to be replaced.

4.17.9 Tilt Sensor (Additional Module TLT)

After having chosen this point of the menu, the following dialogue appears:



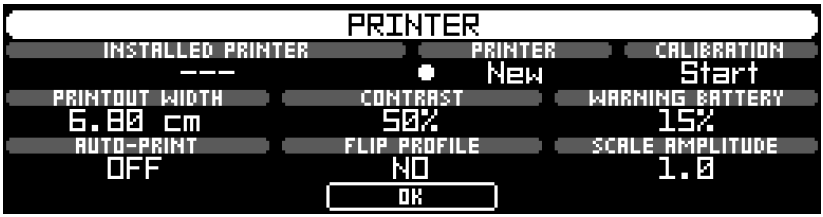
The option **ANGLE HORIZONTAL** determines if the angle 0° or 90° is displayed when the device is aligned horizontally. Select **0°** and the display will be in the range between -90° (unit tilted forward) and +90° (unit tilted backwards). Select **90°** and the display will be in the range between 0° (unit tilted forward) and 180° (unit tilted backwards).

4.17.10 Wood Inspector (Additional Module WI)

The operation of the Wood Inspector is described in a separate manual.

4.17.11 Printer (Additional module PRT)

The following dialog appears after selecting this menu item:



The menu item **INSTALLED PRINTER** indicates the serial number of the installed printer.

With **PRINTER New** you can install a new printer. To install, switch on the new printer and select this option. The printer will be searched and installed automatically.

With **CALIBRATION Start** you can start calibrating the printer. The calibration ensures the exact printout length with a scale of 1:1 with only a minimum of tolerance. Normally, it is not necessary to calibrate the printer because it is calibrated before delivery.

With **PRINTOUT WIDTH** you can adjust the width of the print-out to the paper roll you are using.

With the parameter **CONTRAST** you can adjust the printing contrast. Depending on the paper quality it may be necessary to adjust the contrast.

With the parameter **WARNING BATTERY** you can adjust the warning level. When the battery reaches the adjusted level, the instrument will display a warning after the printout.

With **AUTO-PRINT** you can enable or disable the automatic print function. When this function is enabled, the measurement is printed automatically after drilling.

With **FLIP PROFILE** you can decide, if the profile has to be printed mirrored

With the parameter **SCALE AMPLITUDE** you can adjust, how the amplitude of the profile has to be scaled. This option is only available, if the additional

module SCL (scale package) is installed. You can either select a fixed scale factor for the amplitude or an automatic scale function. Furthermore it is possible to choose the same scale factor as the measurement is shown on the display. Therefore, choose the option **as displayed**.

For more information regarding the printer please see the **Bluetooth printer manual.**

4.17.12 Access Control (Additional module ACS)

With the access control it is possible to protect all the functions of the instrument with a password.

After selecting this menu item, a password request appears. The standard password is **ADMIN**. After entering this password the dialogue to adjust the access control will appear.



Pages 1 to 3 show all the disposable functions of the main menu. If you want to block the access to a function you have to select this function and press the navigation knob. The function will be greyed and furthermore it is impossible to access this function without entering the password. Pages 4 to 7 show the functions of the system control.

On page 8 it is possible to change the password. You can access this menu and all the locked functions only by entering this password.

If you've once entered the password, all the locked functions are disposable without need to enter the password again. Switch on the instrument once again, to activate the password request again.

4.17.13 Data Recovery

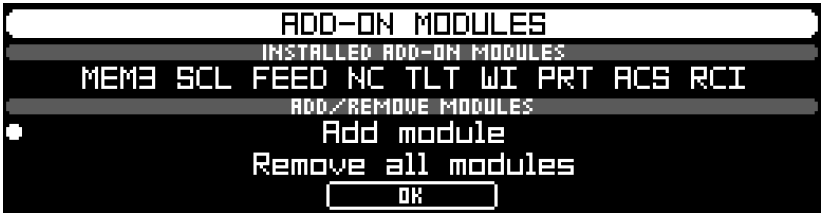
After selecting this menu item a request appears asking if you really want to start the data recovery. After confirming this request with **YES** the data recovery will start:



The data recovery routine searches the complete memory for valid measurements and recovers them. This function will be helpful if you have deleted measurements accidentally and you want them to be recovered.

4.17.14 Add-on Modules

After selecting this menu item, the following dialog will appear:



The menu item **INSTALLED ADD-ON MODULES** indicates the add-on options you have purchased and already installed. For the PD-Series the following modules are available:

MEM1	Memory upgrade to 50/25 meters memory length
MEM2	Memory upgrade to 100/50 meters memory length
MEM3	Memory upgrade to 180/90 meters memory length
SCL	Scaling Package
FEED	Feed Measurement
TLT	Tilt Sensor
NC	Needle Check
WI	Wood Inspector
PRT	Bluetooth Printer
ACS	Access Control
RCI	Remote Control Interface

With **ADD/REMOVE MODULE** it is possible to add or remove modules. To run one of these functions you need the corresponding activation key that you obtain purchasing the add-on module.

After selecting **Add module,** the dialog to enter the activation key for the add-on module will appear. Please enter your code and select **OK**. If the entered activation key was correct, the module that has been installed will be displayed in the menu item **MODULES INSTALLED**.

After selecting **Remove all modules** a request, if all modules should be removed, will appear. Please note that you need the activation keys to add the modules again.

4.17.15 Service

This menu is designed for internal service activities and not accessible for end users.

5 PD-Tools / PD-Tools Pro

Please see the separate instructions for IML Studio.

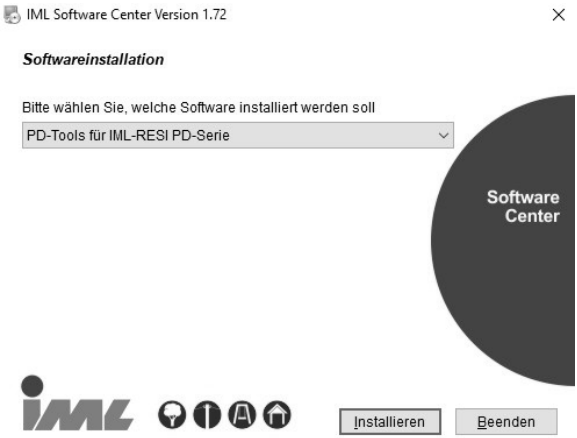
5.1 System Requirements

- Operating System Windows 10 or later.

5.2 Installation

5.2.1 PD-Tools / PD-Tools Pro

The installation for the software is on the USB stick included in the scope of delivery. The ten-digit software serial number required for installation can be found on the back of the USB box.



Select the software to be installed and click on **Install** to start the installation. Follow the instructions on the screen to finish the installation.

5.3 Functional Description

Upon start of the program, the following window will appear:



Below the main menu (*File, IML-RESI, View, Options, ?*) you see the toolbar, which serves for direct selection of essential functions by clicking an icon with the mouse. In the following, the functions of all menu items of the main menu are described. If there is an icon for any of the menu items in the toolbar, this icon is printed beside the description.

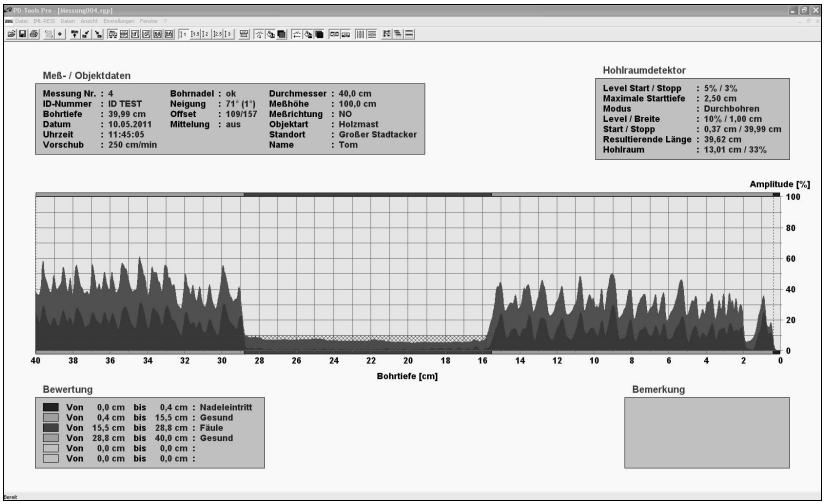
At the bottom of the window you see the status bar, which shows the description of the menu item selected.

5.3.1 Menu Item *File*



5.3.1.1 Open

This menu item serves for loading a measurement from a drive (e.g. hard disk). Upon selecting this menu item, a dialog box will appear, by means of which a measurement may be opened. During installation of the software, ten examples have been installed. Choose any of these measurements and press the *OK* button to open the measurement. To obtain a full screen view, press the *Maximize* button.



Hint: You may select and open several curves simultaneously in the dialog box *Open* by means of the shift key and the Ctrl key.

5.3.1.2 Close

This menu item serves for closing the current measurement. If you have not saved the modifications made in the measurement so far, the program will automatically ask you, whether you want to save the modifications.

5.3.1.3 Close all

Selecting this menu item will close all open measurements. If modified measurements have not been saved, the program will automatically ask, if they should be saved.



5.3.1.4 Save

Select this menu item, if you have modified a measurement and want to save the modifications. However, in case that several measurements are opened, only the active measurement is saved. You can recognize the current measurement by title bar appearing in a different colour from the one of the other opened measurements.

5.3.1.5 Save all

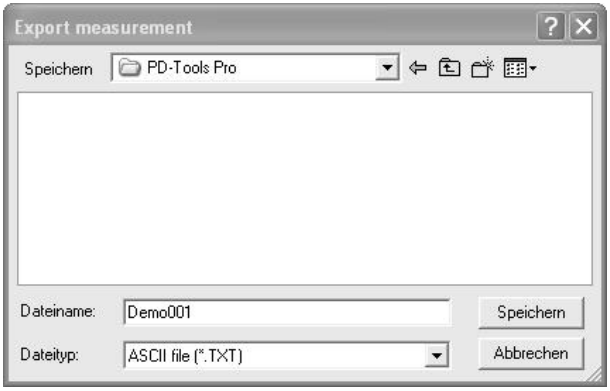
This menu item serves for saving all active measurements.

5.3.1.6 Save as...

Select this menu item, if you want to save the current measurement in another file. A dialog box will appear where you may choose or create the target directory. After having chosen the target directory, you may enter a new name of the measurement and save the new file by confirming.

5.3.1.7 Export... (PD-Tools Pro)

Select this menu item, if you want to export the measurement into a different format. After having selected this menu item, the following dialog box will appear:



There are two ways of exporting a measurement available:

1. The ASCII format: If you export the measurement into the ASCII format, you will obtain a text file containing all data relating to the measurement. This file may be imported into another program (e.g. Excel®) for you to adapt the curve or the assessment to your requirements. The description of the data format is available on request.

2. The EMF format: If you export the measurement into the EMF format (enhanced Windows meta file), you will obtain a file which saves the curve in the shape of a graphical representation. You may then import this file into a word processing program in order to document or record it. If you want to export the measurement into this format, select the entry *Enhanced windows meta file (*.EMF)* in the selection box *Type of file*.

You may export all opened measurements simultaneously by entering the key word **.A** as a file name (do not forget the full stop). Upon pressing the *Save* button, all measurements will be exported in the format selected.

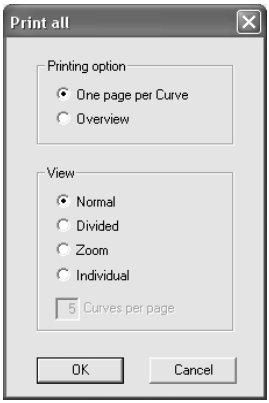


5.3.1.8 Print...

This menu item serves for printing out the current measurement. Upon selection of this menu item, a dialog box will appear, by means of which you may set the printer options. Print-out will be done in the view selected (normal, divided or zoomed).

5.3.1.9 Print All... (PD-Tools Pro)

Upon selection of this menu item, the following dialog box will appear:



Select the printing option *One page per curve*, to print out all opened measurements one after the other. Print-out will be done in the view selected. If you have selected the view *Individual*, all measurement will be printed out in the view currently set.

Select the printing option *Overview*, to obtain a print-out of several curves on one page. After you have selected this option, you may fix the number of curves to be printed on the page (max. 10).

Upon confirmation of this dialog box by pressing the *OK* button, a dialog box will appear by means of which you may select the printer options. The program automatically selects the orientation of the page (portrait or landscape) depending on the number of curves to be printed (in case of the option *Overview*).

5.3.1.10 Files last opened

Above the menu item *Exit*, the four measurements that have last been opened are shown. You may directly open any of these four measurements by selecting it.

5.3.1.11 Exit

Select this menu item, if you want to quit the program. If the modifications of a current measurement have not yet been saved, the program will automatically ask you, whether you want to save these modifications.

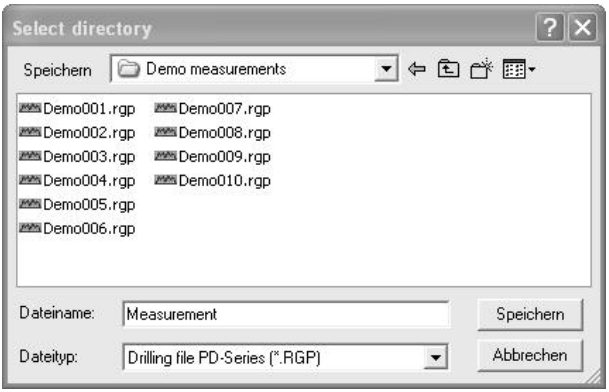
5.3.2 Menu Item *IML-RESI*



5.3.2.1 Transmit measurements...

This menu item serves for transmitting all measurements from the IML-RESI to your PC.

Upon selection of this menu item, a dialog box will appear, by means of which you may choose the target directory for these measurements.



As to the file name, there are two possibilities:

1. Enter a root name (any string of characters **without full stop**). In our example, the name entered is *Test*. The file name is then formed from the root name entered and the measurement number. If, for instance, four measurements are transmitted, the file names of these measurements will be:

```
Test001.rgp
Test002.rgp
Test003.rgp
Test004.rgp
```

2. Enter *.ID* in the field **File name** (do not forget the full stop). The file name will then be formed from the identification number of each measurement (e.g. the tree number) and the measurement number. If, for instance, four measurements have been carried out and each of these have been given an ID number:

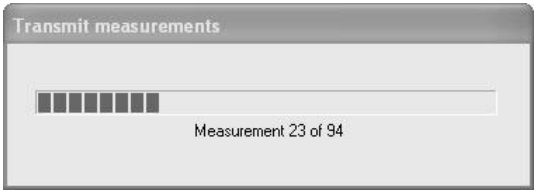
Measurement 1: 98-001
Measurement 2: 98-002
Measurement 3: 98-002
Measurement 4: 98-003

the file names after transmission of the measurement will be the following:

```
98-001M001.rgp
98-002M002.rgp
98-002M003.rgp
98-003M004.rgp
```

Attention: *Since the special characters* **\ / : * „ > < | ?** *must not be used in the file name (Windows default), please pay attention to* ***not*** *using these characters when entering the ID number (option 2 above). If, however, you want the file name to be formed from the root name (option 1), you may use these special characters for the ID number.*

After the file name has thus been entered and you have confirmed by pressing the *OK* button, the measurements will be transmitted:





5.3.2.2 Transmit Measurements automatically (PD-Tools Pro)

Select this menu item if the measurements should be transmitted automatically after the drilling process. Please note that the transmission is only supported by Bluetooth. The USB interface is not supported.

After selecting this menu item a dialog will appear where the destination folder and the file name for the measurements can be chosen. The procedure of naming the file is similar to the procedure of transferring measurements (see previous paragraph).

5.3.2.3 Delete measurements after transmission (PD-Tools Pro)

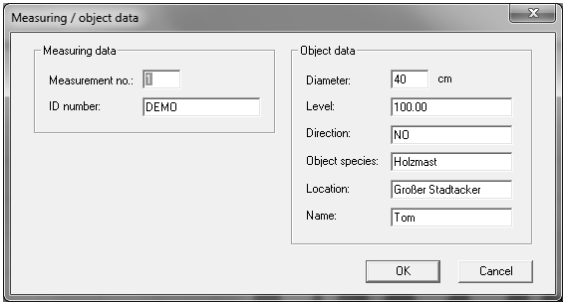
If this option is enabled all measurements, stored in the IML-RESI, will be deleted after transmission.

5.3.3 Menu Item *Data*



5.3.3.1 Measuring / object data...

This menu item serves for modifying the measuring and object data of the active measurement. Upon selection of this menu item, a dialog box will appear:

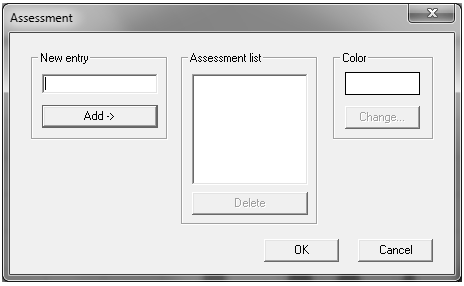


Upon pressing the *OK* button, the modifications will be shown in the main window.

Hint: You may invoke the dialog box as well by double-clicking with the left mouse button the case *Measuring / object data*.

5.3.3.2 Assessment...

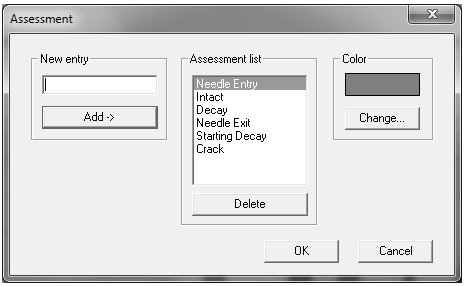
To facilitate assessment of the measurement, you have to previously make a list of the most current special terms. For this purpose, select the menu item *Options – Assessment*. The following dialog will appear:



Enter a new term into the field *New entry*. Press the *Add* button to add this term to the list. The term will be added to the list. If you want to delete a term from the list, highlight this term and press the *Delete* button.

To assign a color to the term, mark the term und press Color *Change*.

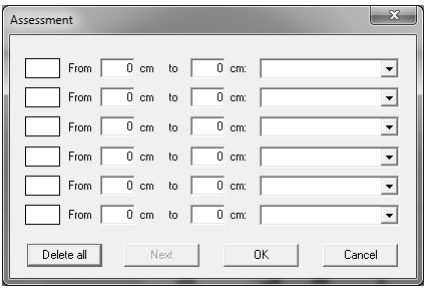
The following figure shows an example of an assessment list.



After you have made your assessment list, assessment of the curve may be carried out in two different ways:

1. Manual Assessment

Upon selection of the menu item *Data – Assessment* the following dialog box will appear:



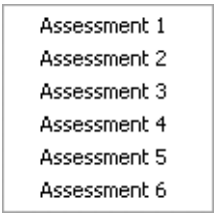
The cases *From* and *To* serve for entering the zone to be marked. In the case on the right side, you may either enter a term (e.g. entrance of needle) or select a pre-defined term from the assessment list by clicking the arrow. If you want to delete all cases, press the *Delete all* button.

Upon pressing the *OK* button, you can see the modifications in the main window.

Hint: You may invoke the dialog box as well by double-clicking with the left mouse button the case *Assessment*.

2. Assessment by Means of the Mouse

If you want to assess the curve by means of the mouse, please press the right mouse button. The following context menu will be shown:



Please select the line where you want the assessment to be entered. A line will appear (if the mouse pointer is positioned above the curve), which marks the beginning of the marking. As soon as you have positioned the line at the beginning, press the left mouse button. A second line will appear, by means of which you may fix the end of the marking. Upon pressing the left mouse button again, the above assessment dialog box will appear. The beginning and the end of the marking will be automatically entered into the cases. If necessary, you may manually modify the value. Now, please enter an assessment term either manually or by selecting one from the assessment list.

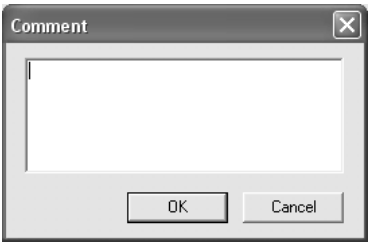
Upon pressing the *OK* button, you can see the modifications in the main window. You may now carry out the next assessment by pressing the right mouse button.

If you click the *Continue* button instead of the *OK* button, the next measurement will automatically be started, the programme adopting the final value of the previous measurement as starting value of the new measurement. This function serves for quickening the assessment of a curve, since each time you only have to select the end of an assessment section.

A checkmark beside an entry in the context menu shows that this assessment has already been carried out.

5.3.3.3 Comment...

Select this menu item to provide the measurement with a comment. Upon selection of this menu item, the following dialog box will appear:



You may enter 6 lines with 70 characters each.

Hint: You may invoke the dialog box as well by double-clicking with the left mouse button the case *Comment*.

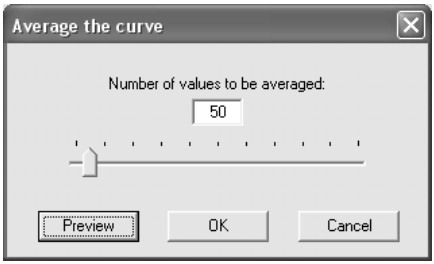
5.3.3.4 Transfer measuring / object data…

This function serves for transferring different measuring / object data of the active measurement to all other open measurements. This is very helpful if there are a large number of measurements, since many data will have to be entered just once.

Select this function after you have edited the measuring / object data of a measurement. A dialog box will appear where you may select the data to be adopted. Highlight the desired fields and click the *OK* button.

5.3.3.5 Average the curve... (PD-Tools Pro)

Please select this menu item, if you want to add an averaged curve into the diagram. Depending on the extent to which the curve has been averaged, the tendency is more clearly recognizable. You may, however, not activate this function before the averaged curve is shown on the screen (menu *View*, item *Average the curve*, submenu *Show*). Upon selection of the menu item *Average the curve*, the following dialog box will appear:



You may fix the number of values to be averaged either in the case or by means of the scroll box. The *Preview* button serves for showing the curve without closing the dialog box. If the averaged curve meets your requirements, press the *OK* button to confirm the modifications and to close the dialog box.

5.3.3.6 Start annual ring analysis... (PD-Tools Pro)

This function serves for measuring the annual rings and subsequently exporting the data. Upon selection of this menu item, the following dialog box will appear in the top left corner of the active measurement:



When the mouse cursor is moved above the curve, a marker will appear. Please position this marker on the first annual ring and press the left mouse button to fix the start position. The dialog box will show the start value. Now you may highlight all annual rings (left mouse button). The dialog box will show the annual ring number, the start and end positions, and the width of the annual ring. If you want to delete the last marking, press the *Delete* button in the dialog box. If you want to quit the annual ring analysis, press the *Quit* button.

Before you quit the annual ring analysis, you should, however, save your data by pressing the *Save...* button. Upon pressing this button, the same dialog box as described in section 5*.3.1.7 Export...* will appear. The selection box *Type of file* serves for selecting either 'ASCII file' or 'measuring table file'.

The ASCII format serves for saving the data of the annual ring analysis in the text format so that you may import them into another application (e.g. Excel®). The data of the individual annual rings start in line 37.

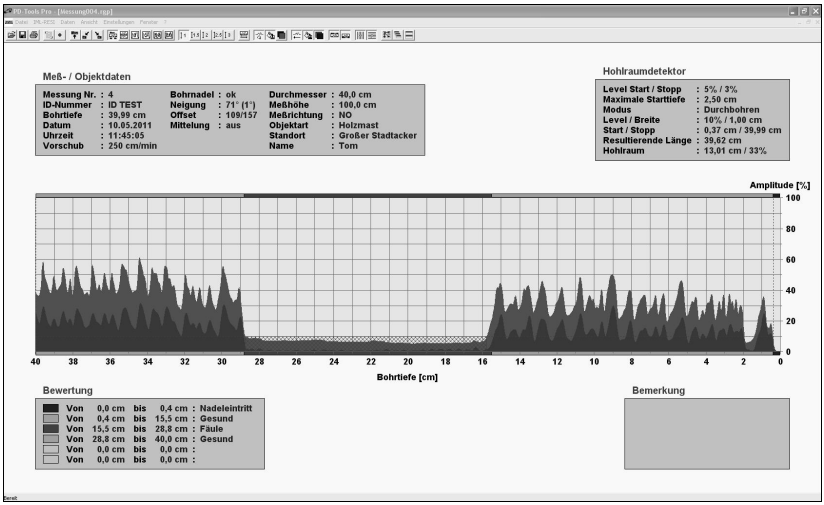
The export filter *Measuring table file (*.MST)* serves for saving the annual ring analysis in the MST format. This file may be opened and processed by means of the software T-Tools or T-Tools Pro.

To ensure accuracy, the annual ring analysis should be carried out in enlarged view (factor 20, cf. section 2.3.4.3)!

5.3.4 Menu Item *View*

5.3.4.1 Normal

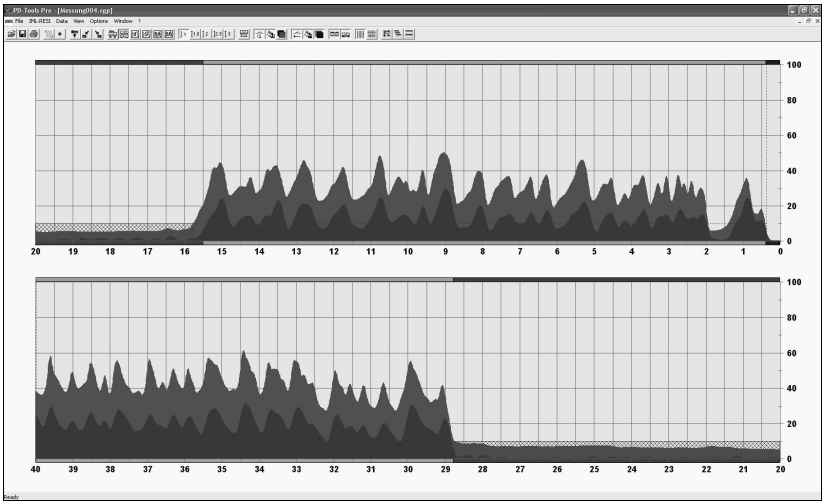
Select this view to get an overall view of the measurement. The curve and all relevant data will be displayed.





5.3.4.2 Divided

This view serves for dividing the curve into two parts. The upper part shows the drilling curve up to half of the overall drilling length of the instrument and the lower part shows the other half of the curve. This stretching of the curve results in a higher resolution in x direction.








5.3.4.3 Zoom

This menu item contains a submenu with various factors of enlargement. Depending on the factor, the width of the curve will be more or less enlarged. You may scroll through the curve by means of the scroll bar at the bottom of the window (except in case of factor 1). Instead of the scroll bar, you may use the arrow keys to shift the curve to the right and to the left:

⇨ = Shift curve to the left by 1 mm
⇦ = Shift curve to the right by 1 mm
⇧ = Shift curve forward by 1 cm
⇩ = Shift curve backward by 1 cm
Pos1 = Start of the curve
End = End of the curve

Shifting of the curve by means of the keys is only possible if no marker is displayed.







5.3.4.4 Amplitude

This point of the menu contains a submenu with different factors. With these factors you can magnify the amplitude. Thus, profiles with little amplitude can be shown better.



5.3.4.5 Mirror curve

This menu item serves for mirrored representation of the curve. The curve will be represented from the left to the right instead of from the right to the left.



5.3.4.6 Drilling Curve




This point of the menu contains the subpoints *Show, Fill*, *To the front* and *Show average*. With *Show* you can show the drilling profile or mask it. With *Fill* you can fill up the area under the drilling curve. With *To the front* you can bring the drilling profile to the front and the feed curve (if present) to the background. With *Show average* you can show or hide the averaged curve.



5.3.4.7 Feed Curve




This point of the menu contains the subpoints *Show, Fill*, *and To the front* and *Show average*. With *Show* you can show the feed profile or mask it. With *Fill* you can fill up the area under the feed curve. With *To the front* you can bring the feed profile to the front and the drilling curve to the background. With *Show average* you can show or hide the averaged curve.



5.3.4.8 Subsidiary lines



This menu item contains the submenus *x axis* and *y axis*. These functions allow activating and deactivating the subsidiary lines of the x axis and the y axis. You may use the subsidiary lines to adapt the sectioning of the different views to your personal requirements.



5.3.4.9 Assessment



This menu item contains the submenus *Top* and *Bottom*. They serve for activating and deactivating the coloured markings of the assessment.



5.3.4.10 All windows

This menu item serves for transferring the view of the active window to all other opened measurements. This is helpful in case several measurements are represented side by side or one above the other and you want to adapt the views of all measurements to the active measurement.

5.3.5 Menu Item *Options*

5.3.5.1 Drilling machine

Upon selecting this menu item, a list of the different types of IML-RESI will appear. Choose from this list the type of drilling instrument you employ, to ensure that the calibration of the drilling curve is adjusted to the drilling length of your instrument.

5.3.5.2 Date format

This menu item allows selecting between Day.Month.Year or Month/Day/Year data format.

5.3.5.3 Unit

This menu item allows selecting between metric and imperial unit. Calibration of the drilling curve and all numeric values are indicated in the unit selected.

5.3.5.4 Decimal separator

This menu item allows selecting between comma or point as decimal separator. After changing this setting, all numbers will be displayed or exported with the separator selected.

5.3.5.5 Angle horizontal

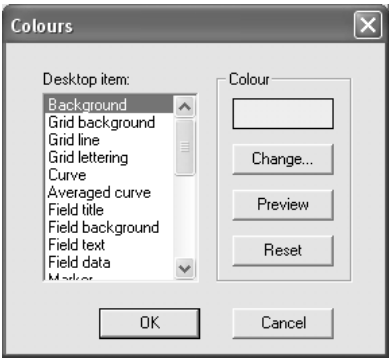
This option determines if the angle 0° or 90° is displayed when the device is aligned horizontally. Select **0°** and the display will be in the range between -90° (unit tilted forward) and +90° (unit tilted backwards). Select **90°** and the display will be in the range between 0° (unit tilted forward) and 180° (unit tilted backwards).

5.3.5.6 Assessment...

This menu item serves for modifying the assessment list (cf. section *5.3.3.2 Assessment*).

5.3.5.7 Colours...

Upon selection of this menu item, a dialog box will appear, by means of which you may change the desktop item colours:



Choose an item in the list field *desktop items*. The current colour of the respective item is shown in the box on top on the right side. To change the colour, press the *Change* button. A dialog box will appear, by means of which you may choose a colour. Upon closing of the dialog box, the colour selected will be shown in the above box. If you want to be shown the modification in advance, press the *Preview* button. The main window will now be displayed in the current colours. To reset all colours to default, press the *Reset* button.

5.3.5.8 Print-out

This menu item serves for managing the printing options. The following is a description of the sub-menu items.

5.3.5.8.1 Change footer...

Select this menu item to enter a text which will appear in the footer of the print-out. Here, you may enter for instance the name of your company.

5.3.5.8.2 Colour print-out

If you have connected a colour printer to your PC, you may activate this menu item to have the drilling curve and the data printed out in the desktop colours selected.

5.3.5.8.3 No print-out of file name

If this menu item is activated, the file name will not appear on the print-out.

5.3.5.8.4 Print file name

If this menu item is activated, the name of the measurement (file name) will appear on the print-out.

5.3.5.8.5 Print file name including path

If this menu item is activated, the file name of the measurement, incl. the directory containing the file, will appear on the print-out.

5.3.5.9 Configuration

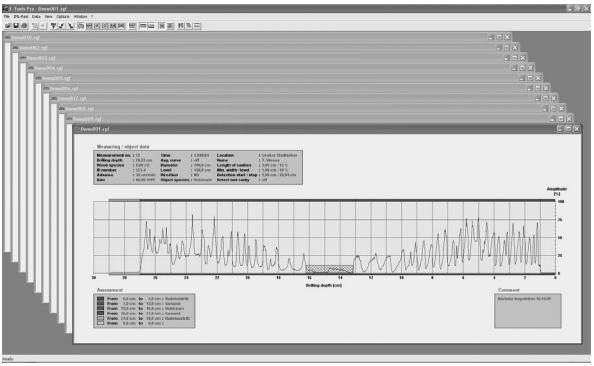
This menu is for internal service activities and not accessible for end users.

5.3.6 Menu Item *Window*



5.3.6.1 Cascade

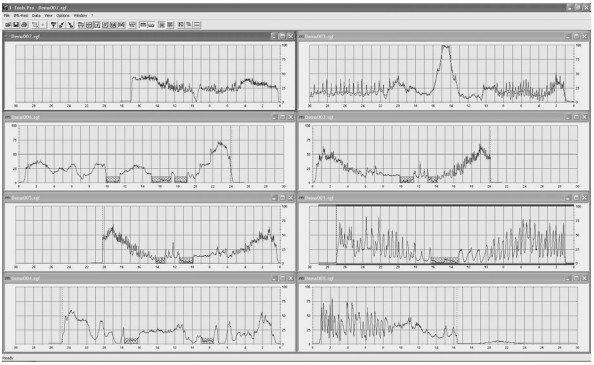
Upon selection of this menu item all opened windows are arranged cascadingly.





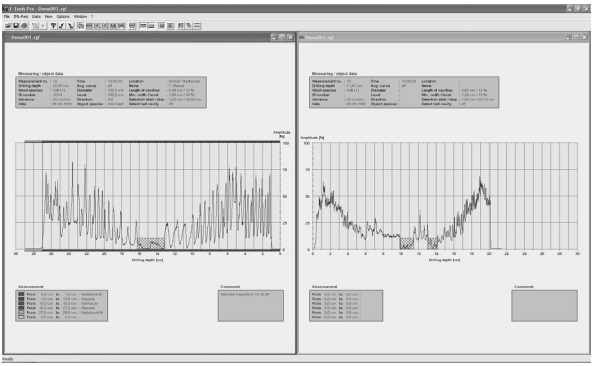
5.3.6.2 Tile horizontal

Upon selection of this menu item all opened windows are arranged one above the other:



5.3.6.3 Tile vertical

Upon selection of this menu item all opened windows are arranged side by side:



5.3.6.4 Arrange Icons

Upon selection of this menu item, the icons of the minimized windows are arranged.

Declaration of Conformity

according to EC - Machinery Directive (2006/42/EG, Anh. II 1. A)
-Original-

The manufacturer,

IML Instrumenta Mechanik Labor System GmbH
Sebastian Hunger
Parkstraße 33
69168 Wiesloch

CE

declares under its sole responsibility that the machine,

Designation: RESI PowerDrill
Model: PD200, PD300, PD400, PD500, PD600, PD750 und PD1000
Serial No.: PDx00-0001 – PDx00-9999
Year of manufacture: 2023

complies with all relevant provisions of Directive 2006/42/EC - Machinery Directive. The machine further complies with all provisions of the following directives:

- Directive 2014/30/EU on electromagnetic compatibility
- Directive 2011/65/EU RoHS Restriction of the use of certain hazardous substances in electrical and electronic equipment.

The following harmonized standards have been applied:

Standard	Title
EN ISO 12100:2010	Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)
EN 62841-2-1:2020-07	Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 2-1: Particular requirements for hand-held drills and impact drills (IEC 62841-2-1:2017, modified)
EN 55014-1 (2018-08)	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
EN 55014-2 (2016-01)	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity
EN 55016-2-3 (2020-11)	Specification for radio disturbance and immunity measuring apparatus and methods
EN 61000-4-2 (2009-12)	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test
EN 61000-4-3 (2021-11)	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test

The following other technical standards and specifications have been applied:

- None

For the compilation of the technical documentation is assigned: Sebastian Hunger

Signatory and signatory's details: Sebastian Hunger (CEO)

Place, Date: Wiesloch 02.01.2023 Signature: .....

UK Declaration of Conformity according to Supply of Machinery (Safety) Regulations 2008

The manufacturer,

IML Instrumenta Mechanik Labor System GmbH
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Designation: RESI PowerDrill
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Authorized person to compile the technical documentation: Mark Vestey, Sorbus International Limited L1-L3 Marshall Way, Commerce Park, Frome, Somerset, BA11 2FB, UK

Authorized to sign: Sebastian Hunger (Chief Executive Officer)

Place, Date: Wiesloch 02.01.2025 Signature: .....