

# ROTALIGN<sup>®</sup> Ultra iS

Live Trend – Getting started





# Live Trend – Getting started

Dear Customer,

Thank you for acquiring Live Trend, an additional application within the ROTALIGN Ultra Shaft Expert platform. The Shaft Expert platform has been developed for experts by experts in the field of laser alignment.

This guide is intended for users of both **ROALIGN Ultra iS** and **ROALIGN Ultra** when using the Live Trend application. It is to be used in conjunction with the respective operating handbook.

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# Contents

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Safety notes .....	3
Safety symbols .....	3
Laser safety .....	3
Notes regarding data storage.....	4
General information .....	4
<b>Introducing the Live Trend application .....</b>	<b>4</b>
What is Live Trend?.....	4
What constitutes ROTALIGN Ultra / ROTALIGN Ultra iS Live Trend? .....	5
Updating the ROTALIGN Ultra firmware version .....	5
Upgrading to Shaft Expert .....	5
<b>Live Trend packages .....</b>	<b>6</b>
Live Trend ROTALIGN Ultra Shaft Expert add-on module with magnetic brackets ALI 4.005/2-10 .....	6
Live Trend ROTALIGN Ultra Shaft Expert add-on module with PERMAFIX brackets ALI 4.005/2-20 .....	7
<b>Getting started .....</b>	<b>8</b>
Starting and licencing the application .....	8
Mounting the brackets.....	9
Mounting the magnetic brackets .....	10
Mounting the PERMAFIX brackets .....	11
Set up machine.....	15
Measurement .....	16
Measurement options.....	17
Evaluating results .....	20
Feet and coupling results .....	20
Graph plots .....	20
Video sequence .....	24
Exporting measurement files as a CSV file .....	25
Displaying the CSV file as a spreadsheet.....	27
Saving report as PDF .....	30
Saving measurement files .....	31
<b>XY Tracking .....</b>	<b>31</b>
What is XY Tracking?.....	31
Carrying out XY Tracking .....	31
Viewing results .....	34
Live Trend technical data .....	36
<b>Index .....</b>	<b>37</b>

## Safety notes

ROTALIGN Ultra iS is to be used in industrial environments. Care must be taken to ensure that the instrument is not subjected to mechanical knocks. ROTALIGN Ultra iS must be operated only by properly trained personnel. No liability will be assumed when components or operating procedures as described in this guide are altered without permission of PRÜFTECHNIK Alignment Systems.

► The safety notes apply for also ROTALIGN Ultra

### Safety symbols

The following symbols are used in this guide in order to draw the reader's attention to especially important text, such as that regarding possible sources of danger or useful operating tips.

This symbol denotes general information and tips regarding operation of ROTALIGN Ultra iS.



Note

This symbol denotes information which must be followed in order to avoid damage to equipment.



CAUTION

This symbol denotes information which must be followed in order to avoid personal injury.



WARNING

Numbers in red circles indicate the corresponding operating step described in these instructions and must be performed exactly.



### Laser safety

- Do not look directly into the laser beam at any time.
- Do not insert any optical devices into the beam path.
- The red LED on the front of the laser illuminates whenever the laser beam is emitted.



ROTALIGN Ultra iS Live Trend application and its hardware components ARE NOT to be used in explosive atmospheres.



### Notes regarding data storage

- ▶ As with any data processing software, data may be lost or altered under certain circumstances. PRÜFTECHNIK Alignment Systems strongly recommends that you keep a backup or printed record of all important data.
- ▶ PRÜFTECHNIK Alignment Systems assumes no liability for data lost or altered as a result of improper use, repairs, defects, battery replacement/failures or any other cause.
- ▶ PRÜFTECHNIK Alignment Systems assumes no responsibility, directly or indirectly, for financial losses or claims from third parties resulting from the use of this product and any of its functions, such as loss or alteration of stored data.



Note

### General information

- ▶ Contents subject to change without further notice, particularly in the interest of further technical development.
- ▶ The calibration accuracy of the system should be checked every two years as indicated by the coloured date wheel label on the sensor. In the example to the right margin, the calibration due date is November 2016.



## Introducing the Live Trend application

This quick guide assumes that the user is fully conversant with the operation of ROTALIGN Ultra / ROTALIGN Ultra iS computer. It is highly recommended to refer to the respective operating handbook if and when necessary.



Note

### What is Live Trend?

ROTALIGN Ultra / ROTALIGN Ultra iS Live Trend is an additional application running on the ROTALIGN Ultra Shaft Expert platform. It is used for live monitoring of machine movements arising from thermal growth, machine foundation movement and changes in operating load. Live Trend can additionally be used to track machine drift as raw sensor data in the X,Y coordinates.

### What constitutes ROTALIGN Ultra / ROTALIGN Ultra iS Live Trend?

The Live Trend application will only run with the Shaft Alignment firmware version 2.10 and above. In addition to the actual firmware version, the ROTALIGN Ultra Shaft Expert module must be licenced and activated. Either of these two add-on modules is required in this case.

- › ALI 4.005/2-10 – Live Trend ROTALIGN Ultra Shaft Expert add-on module with magnetic brackets
- › ALI 4.005/2-20 – Live Trend ROTALIGN Ultra Shaft Expert add-on module with PERMAFIX brackets

Note that the Live Trend application will run only on ROTALIGN Ultra / ROTALIGN Ultra iS computers ALI 4.202 with a serial number greater than 43213000.

### Updating the ROTALIGN Ultra firmware version

The latest ROTALIGN Ultra Shaft firmware version is stored in the USB memory stick ALI 4.451 which is delivered with both Shaft Expert add-on modules. Detailed instructions on how to update the firmware are to be found in the respective operating handbooks. The latest Shaft firmware version may also be downloaded from the official PRÜFTECHNIK website – [www.pruftechnik.com](http://www.pruftechnik.com).

### Upgrading to Shaft Expert

To be able to use Live Trend, ROTALIGN Ultra Shaft firmware must be licenced to the Expert version. This is done by filling out and returning the ROTALIGN Ultra Shaft Expert firmware voucher ALI 4.743, which is part of both Shaft Expert add-on modules, to PRÜFTECHNIK Alignment Systems or your local representative who will then send you the ROTALIGN Ultra Shaft Expert registration certificate ALI 4.740. The certificate contains the licence code to activate the Shaft Expert alignment platform.

An important prerequisite for the activation of Shaft Expert is a prior registration of the ROTALIGN Ultra Advanced Shaft firmware whose registration is described in the respective operating handbook.



Note

## Live Trend packages

### Live Trend ROTALIGN Ultra Shaft Expert add-on module with magnetic brackets ALI 4.005/2-10

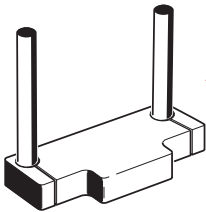
- ALI 14.310 Live Trend magnetic bracket for mounting laser and sensor including 115 mm support posts [Note that this package contains 2 no. ALI 14.310]
- ALI 14.320 Magnetic bracket for Bluetooth module [for ROTALIGN sensor]
- ALI 2.191 Anti-torsion bridge [Note that this package contains 2 no. ALI 2.192]
- ALI 2.193 Live Trend case for magnetic brackets
- ALI 4.743 ROTALIGN Ultra Shaft Expert firmware voucher
- ALI 4.451 USB memory stick for ROTALIGN Ultra firmware update
- DOC 04.100.en Live Trend Getting started (this handbook)
- 0 0739 1055 Allen key [2.5 mm]



ALI 2.191



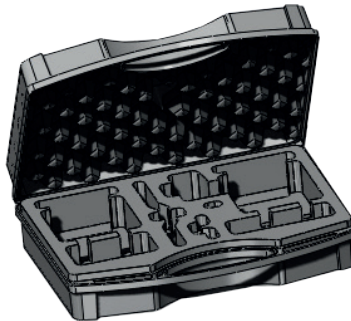
ALI 4.451



ALI 14.320



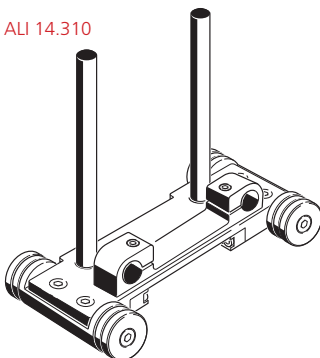
0 0739 1055



ALI 2.193



DOC 04.100.en



ALI 14.310



**Live Trend ROTALIGN Ultra Shaft Expert add-on module  
with PERMAFIX brackets ALI 4.005/2-20**

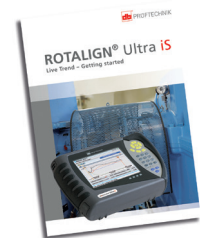
ALI 2.190	PERMAFIX mounting bracket for laser and sensor [Note that this package contains 2 no. ALI 2.190]
ALI 2.194	Striking cone
ALI 2.191	Anti-torsion bridge [Note that this package contains 2 no. ALI 2.191]
ALI 2.192	Live Trend case for PERMAFIX brackets
ALI 4.743	ROTALIGN Ultra Shaft Expert firmware voucher
ALI 4.451	USB memory stick for ROTALIGN Ultra firmware update
DOC 04.100.en	Live Trend Getting started (this handbook)



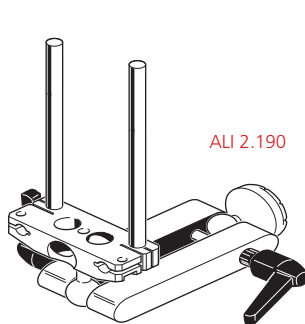
ALI 2.191



ALI 4.451



DOC 04.100.en



ALI 2.190




ALI 2.194

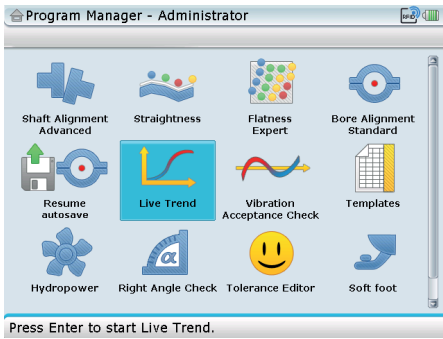


ALI 2.192







# Getting started


## Starting and licencing the application

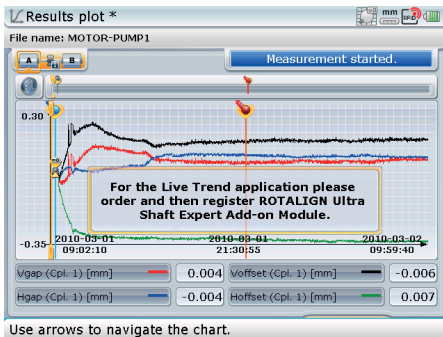
Press and hold  the 'On/Off/Enter' key briefly. The opening screen below appears.



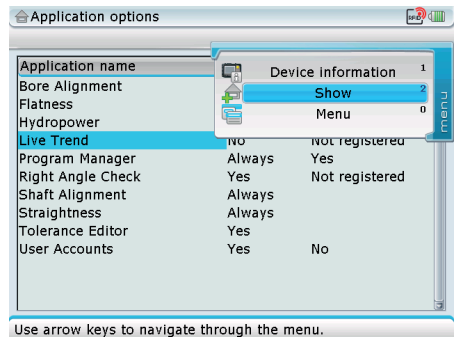
Use the navigation keys and highlight the 'Live Trend' icon. If the 'Live Trend' icon is not visible within the "Program Manager" screen, then select 'Configuration' -> 'Application options' to unhide the icon. See screen below right.

While in the "Application options" screen [refer to screen below right], use  /  and highlight the option 'Live Trend' then press . With the context menu displayed, use  /  and highlight 'Show' then press  to confirm selection.

With the 'Live Trend' icon highlighted, press  to start the application. If the application has not yet been licenced, a hint appears as shown in the left figure below.



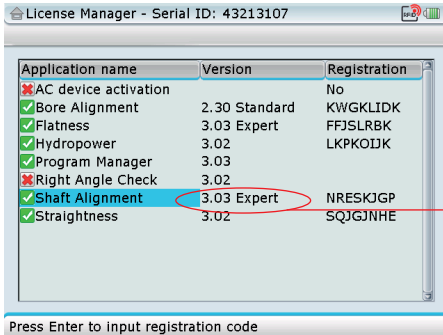
Use arrows to navigate the chart.



Use arrow keys to navigate through the menu.

When the hint above appears, select 'Configuration' -> 'Licence Manager' and proceed to enter the registration key (licence code) contained in the ROTALIGN Ultra Shaft Expert registration certificate ALI 4.740.

After successful registration, the suffix 'Expert' appears next to the Shaft application version number and the 'Live Trend' application may now be started.



Shaft feature level

## Mounting the brackets

- ▶ All prevailing site safety regulations must be adhered to at all times.
- ▶ Mount the brackets as close as possible to the rotational axes of the machines.
- ▶ The brackets should be affixed to enable the sensor be mounted upright. If this is not physically possible, the sensor may be placed at any angular position. The result will not be affected as the inclinometer is active before measurement begins and therefore the initial angular position is taken into consideration when computing results.
- ▶ Before commencing with mounting the respective laser and sensor, ensure that the ROTALIGN Ultra rechargeable battery is charged to full capacity, and both sensALIGN rechargeable batteries [in both sensALIGN laser and sensor] are also charged to full capacity. If using ROTALIGN laser and sensor, replace the 9V laser block battery and the two "AA" Bluetooth module batteries with new good quality batteries.



### Mounting the magnetic brackets

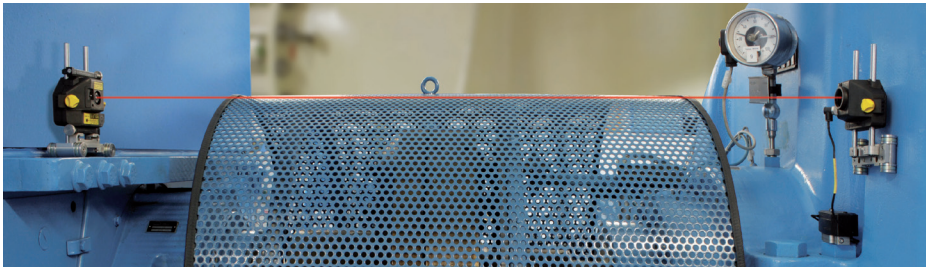
Mounting of the brackets depends on the package purchased. If using the package with the magnetic brackets ALI 4.005/2-10, simply mount the brackets (ALI 14.310) on the appropriate surfaces of the machines. The powerful magnets and the supplied anti-torsion bridges help minimize twisting, enhancing accuracy.

DO NOT use a maximum torque exceeding 1 Nm when tightening the supports posts on the magnetic base.



Due to the powerful magnets, the magnetic brackets mount rigidly and easily on the appropriate parts of the machinery to be monitored.

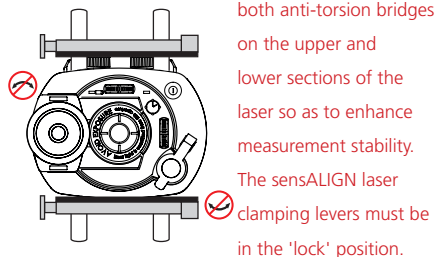
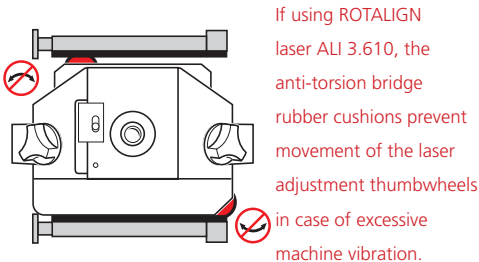
It must be ensured that both locations where the brackets are mounted are consistent with obtaining optimum line-of-sight between the sensor and the laser.



10

In the above mounting example, both the ROTALIGN sensor and laser have been mounted using the magnetic bracket ALI 14.310 while the Bluetooth module has been mounted on the magnetic bracket ALI 14.320. The laser is held firmly between the rubber cushioned anti-torsion bridges.

If using sensALIGN laser ALI 4.910, it is recommended to mount both anti-torsion bridges on the upper and lower sections of the laser so as to enhance measurement stability. The sensALIGN laser clamping levers must be in the 'lock' position.



### Mounting the PERMAFIX brackets

If using the PERMAFIX brackets package ALI 4.005/2-20 proceed to mount the brackets as described below.

1. After identifying the locations on the machinery to mount the PERMAFIX brackets, mark the bracket bolt locations using a centre punch, making sure the punch mark is visible.

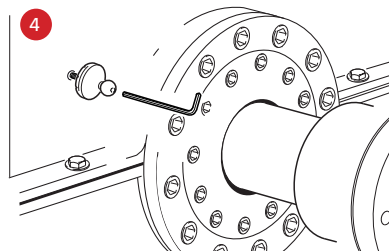
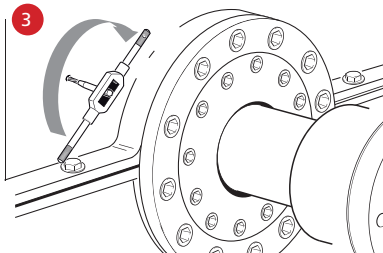
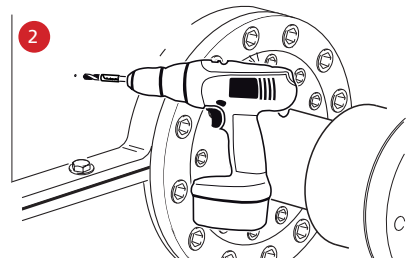
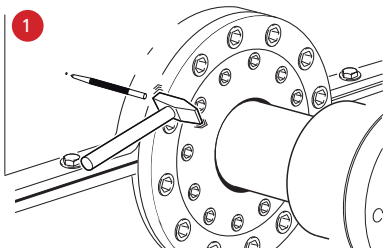
Make sure both locations are consistent with obtaining optimum line-of-sight between the components.

Before commencing the drilling works, confirm the machine wall thickness and obtain permission to drill and tap the machines.



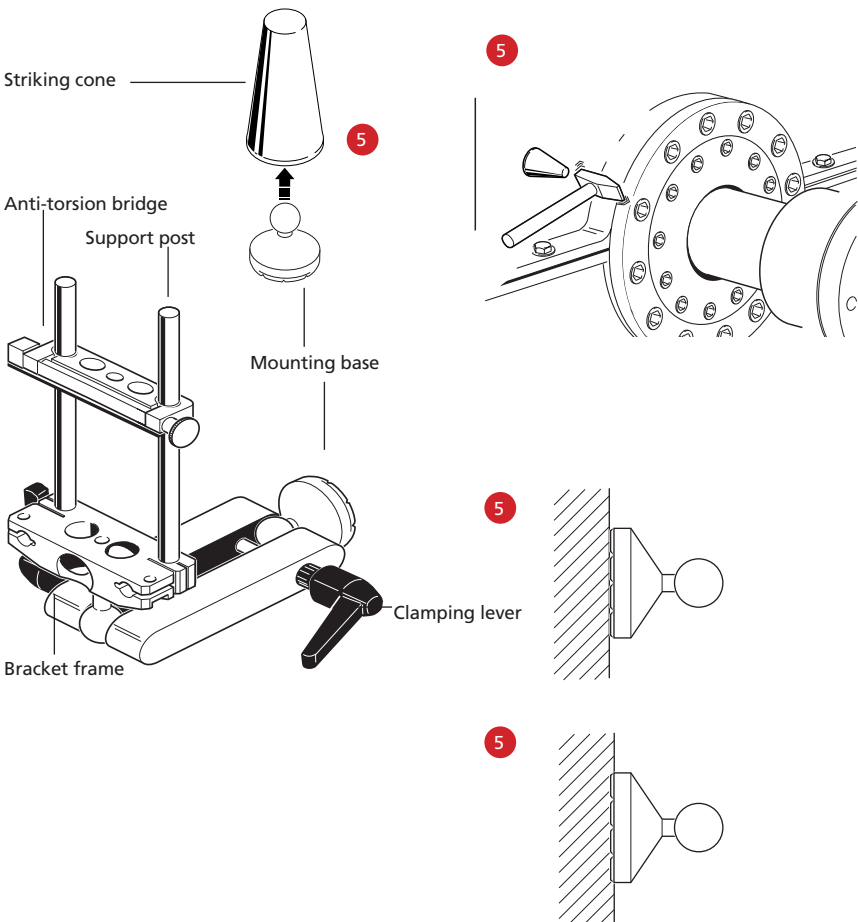
Note

2. Use a 4.2 mm diameter drill bit to bore a 9 mm deep pilot hole at the centre-punched location.
3. Tap an M5 thread in each pilot hole.
4. Use the provided allen key to fasten the mounting bases to their respective mounting locations.

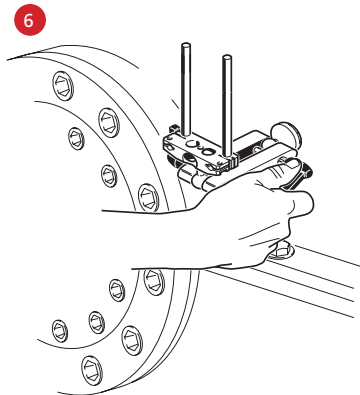


## Getting started with ROTALIGN Ultra iS Live Trend

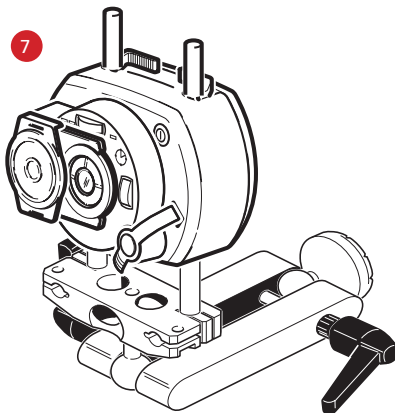
5. Place the striking cone over the ball of the mounting base and hammer it to drive the base into the machine casing deeper, then retighten the M5 allen screw and repeat this sequence until the mounting base is firmly embedded in the machine housing. The sharp edges of the mounting base should be completely "buried" into the machine housing.



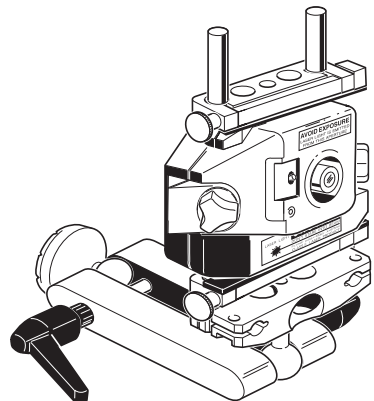
6. Place the frame bars over the ball of the mounting base, then tighten the entire assembly into place using the clamping levers. The bracket should be folded together as far as possible so that the centre of gravity is as close as possible to the machine housing; avoid extending the bracket further than necessary to hold bending moments to a minimum. Check that the clamping levers are firmly tightened. The entire assembly should now be rigid.
7. Now proceed to mount respective laser and sensor then establish communication between the respective sensor and ROTALIGN Ultra / ROTALIGN Ultra iS computer [refer to the respective operating handbook for details on establishing communication].



The illustration below shows how sensALIGN laser ALI 4.910 is attached to the PERMAFIX bracket.



The illustration below shows how ROTALIGN laser ALI 3.610 is attached to the PERMAFIX bracket.



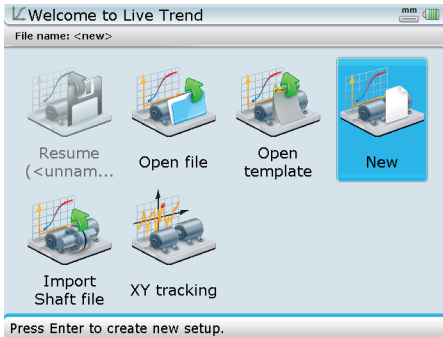
**Getting started with ROTALIGN Ultra iS Live Trend**

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## Set up machine

After starting the Live Trend application, the screen below appears. Use the navigation keys to highlight action to be carried out. To create a new file, select 'New'.

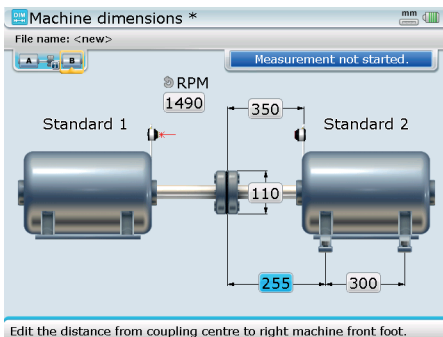


The Live Trend opening screen provides the user with the additional option of using a template or importing an existing shaft alignment file. Any included coupling target values are also imported.

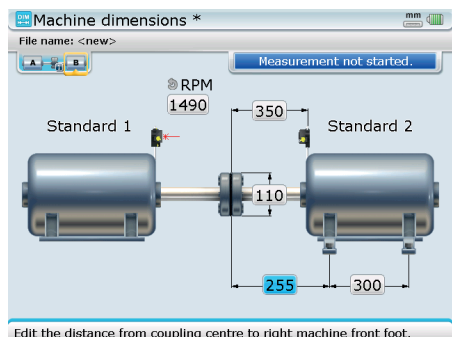
**Note:** The functionality to toggle or rotate machines during set-up is not available within the Live Trend application. If machines require "toggling" the measurement files should first be created within the Shaft application then imported into the Live Trend application.


Press  to confirm selection, then enter machine dimensions in the respective screen.

### ▶ sensALIGN laser and sensor

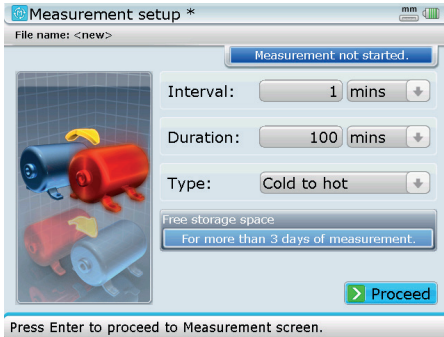


### ▶ ROTALIGN laser and sensor



After entering all necessary dimensions, press  to access the "Measurement set-up" screen.

## Getting started with ROTALIGN Ultra iS Live Trend




In this example, the sampling interval [time that elapses between taking readings] has been set at 1 minute. The duration for the entire measurement is set at 100 minutes, and the running condition set as cold to hot.

In this screen proceed to edit the measurement parameters [interval between measurements and duration of measurement], and to specify the machine running condition. Note that the indicated free storage space is based on the computer file storage capacity and not the current battery operating capacity.

After setting the parameters, use  /  to highlight 'Proceed' then press .

If a Live Trend measurement had previously been carried out in a given measurement file, then the "Measurement set-up" screen [shown previously] is accessed via the "Measurement screen" context menu item 'Measurement set-up'.


Press  to access the context menu items related to that particular screen.



Note

16

## Measurement

If the laser beam is centred, press  to start measurement. If not, you may use the "Measurement screen" context menu item 'XY view' to centre the laser beam.

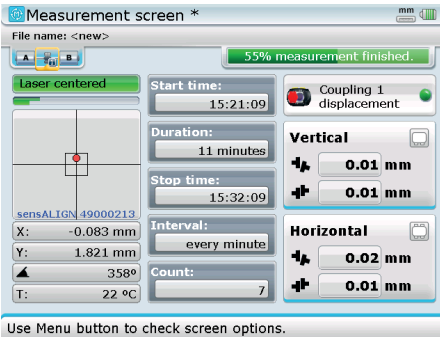
Measurement may also be started using the "Measurement screen" context menu item 'Start'.

After taking of measurements has been started, neither the laser may be touched nor the laser beam adjusted.



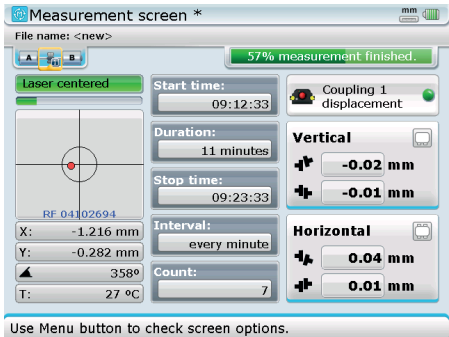
Note

▶ sensALIGN laser and sensor



Use Menu button to check screen options.

▶ ROTALIGN laser and sensor



Use Menu button to check screen options.

Once measurement is started, the "Measurement screen" displays the time measurement commenced, the scheduled duration, time when measurement will end, the sampling interval and number measurements taken.

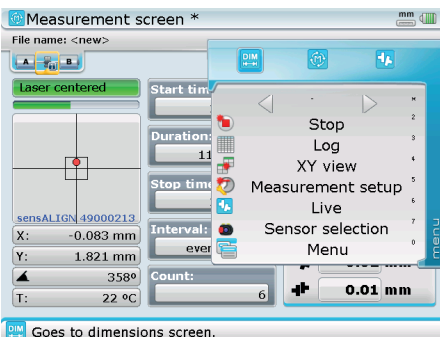
Note that progressive measurements are taken automatically.



**Measurement options**

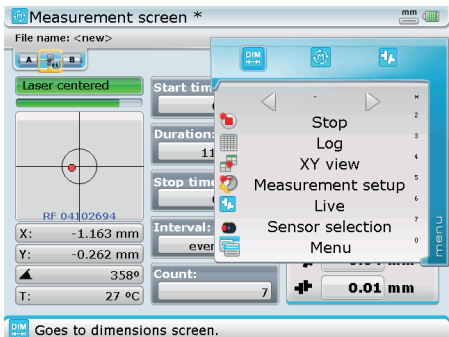
During measurement, the "Measurement screen" context menu items may be used to review actual measurement progress.

▶ sensALIGN laser and sensor



Go to dimensions screen.

▶ ROTALIGN laser and sensor

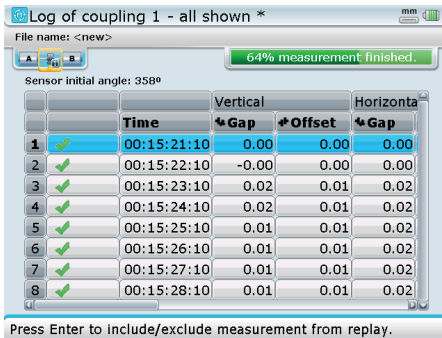


Go to dimensions screen.

*'Log'*

Highlighting the context menu item 'Log' and confirming selection by pressing **Enter** reveals a detailed recording of all measurements already taken plus relevant sensor information. This information may be exported as a CSV file for further analysis.

## Getting started with ROTALIGN Ultra iS Live Trend




	Time	Vertical Gap	Offset	Horizontal Gap
1	00:15:21:10	0.00	0.00	0.00
2	00:15:22:10	-0.00	0.00	0.00
3	00:15:23:10	0.02	0.01	0.02
4	00:15:24:10	0.02	0.01	0.02
5	00:15:25:10	0.01	0.01	0.02
6	00:15:26:10	0.01	0.01	0.02
7	00:15:27:10	0.01	0.01	0.02
8	00:15:28:10	0.01	0.01	0.02

The measurement log comprises following information relating to the measurement: time, vertical and horizontal gap and offset values, sensor serial number and temperature, the averaging, and raw X1/X2 and Y1/Y2 values.


If using sensALIGN laser and sensor, the log includes the laser temperature and vibration as velocity RMS.

The coupling values displayed depend on the coupling type and display format selected in the shaft alignment file.

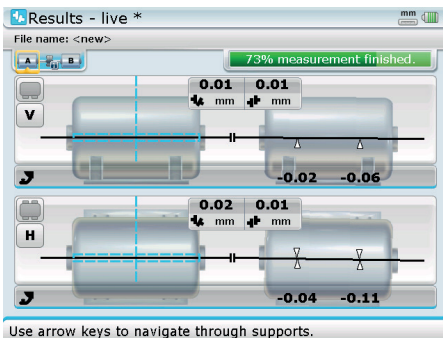
### 'Measurement set-up'


Highlighting the context menu item 'Measurement set-up' and confirming selection by pressing  opens the "Measurement set-up" screen shown previously in the section 'Set up machine'. The screen may be used to edit the sampling interval, the measurement duration and if required, the running condition. The context menu item 'Live' is used to display current results in the three analysis formats – as feet and coupling results, as graph plots and in a video sequence.


### 'Live'

Highlighting 'Live' and confirming selection by pressing  opens the "Live results" screen.

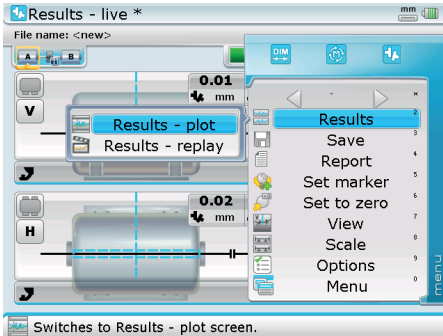
18



In this example, the context menu item 'Live' has been selected with 73% of the measurement duration completed. While viewing these results, measurements continue to be taken. Press  to return to the "Measurement screen".

To view the current Live results plot or replay the current measurement video sequence, use the Live results context menu item 'Results'. Access the context menu by pressing  while in the previous "Live results" screen.

While in the Live results screen, the two results options [graph plots and video sequence] are accessed via the screen context menu.

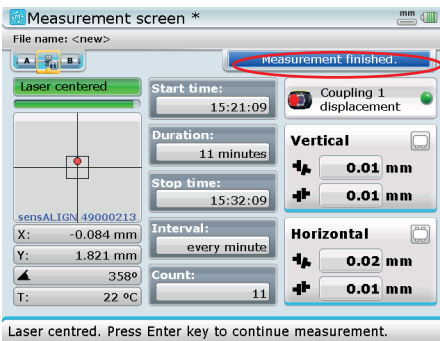


Press **Menu** while in "Results-Live" screen then use the navigation keys and highlight 'Results'-> 'Results-plot' to plot the graphs or highlight 'Results'-> 'Results-replay' to replay the Live trend video sequence.

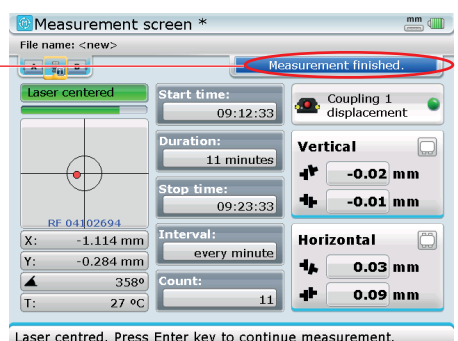
Live continuous measurement results can also be viewed at any time during measurement by pressing **RES**. However, an elaborate evaluation should only be made after measurement has finished.

When the measurement duration elapses, the green measurement status bar turns blue.

▶ sensALIGN laser and sensor



▶ ROTALIGN laser and sensor

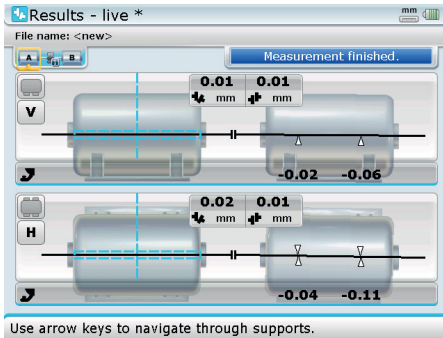


Measurement status bar

## Evaluating results

### Feet and coupling results

After measurement has finished, press **RES**. The screen below appears. View and analyse machinery movement while it was running.

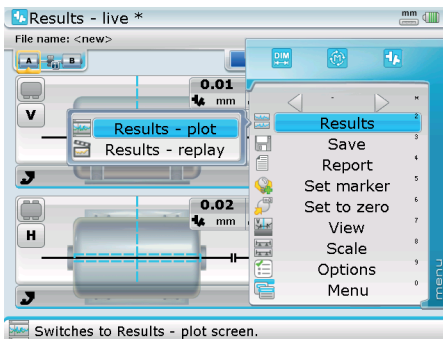


In addition to the feet and coupling results shown in the "Results" screen above, two other important Live Trend analysis tools include the results graph plots and the measurement video sequence.

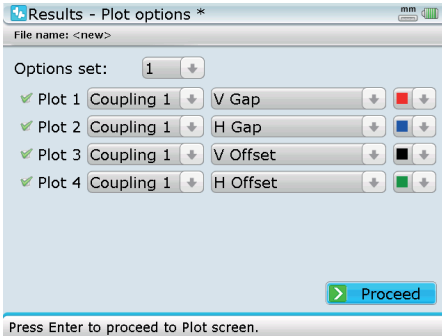
### Graph plots

To plot the required machinery Live Trend curves, press **Menu** to reveal the context menu.

20



With the context menu displayed, use the navigation keys and highlight 'Results' -> 'Results-plot'. Confirm selection by pressing **Enter**. The "Results - Plot options" screen opens.



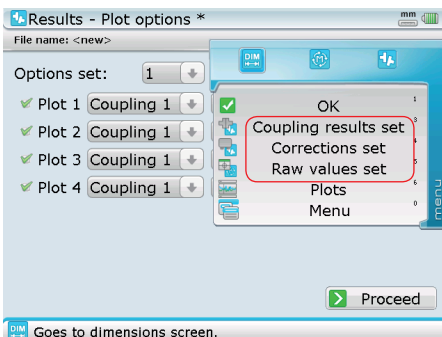
The "Results – Plot options" screen is used to create plots using the required data. Four plots can be created at any one time with the parameters varying as desired. Plots can be created for the coupling or individual machines.

Data that can be configured include: vertical and horizontal gap; vertical and horizontal offset; temperature; raw X,Y values and other machine related data which are selected using the drop down menus. The colour drop down menus are used to modify the colour of the curves.



The above "Results -plot options" screen appears in this sequence only with new measurement files. If a measurement file is being reused, and there is need to redefine the plotted curves, then the "Results-plot options" screen may be accessed via the "Results-plot" screen context menu item 'Options'.


The "Results – Plot options" screen allows the user to define the type of graph to be used for the results analysis. The 'Options set' drop down menu allows the selection of up to 10 predefined plots which include the three default plots which are also accessible via the "Results – Plot options" screen context menu.

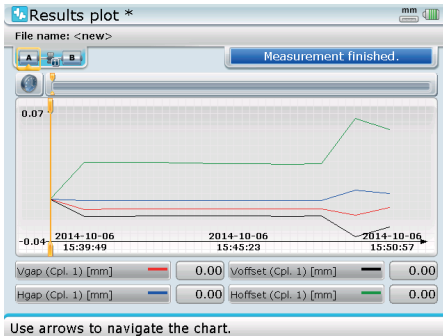



The following are the three default predefined option sets:

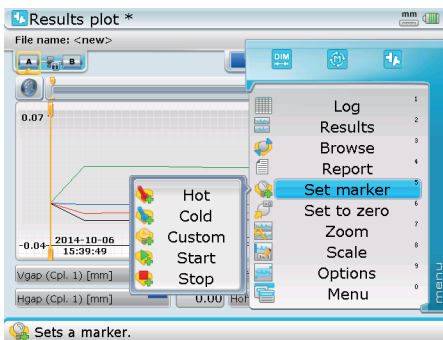
- ▶ Coupling results set – plots the vertical and horizontal gap and offset values
- ▶ Feet corrections set – plots the X and Y values for the two machine feet pair
- ▶ Raw value set – plots raw XY values on both position detectors

## Getting started with ROTALIGN Ultra iS Live Trend





After defining the curves to be displayed, use the navigation keys to highlight the button 'Proceed', then press  to continue. Curves belonging to the selected plot option will be displayed.



Using the "Results plot" screen context menu, an extended definition of the graph may be carried out. Open the context menu by pressing  while in the "Results plot" screen.



The "Results plot" screen context menu has the following useful items:

- ▶ 'Log' – this menu displays a measurement table with all the relevant parameters for every single measurement. To scroll the table from left to right press  /  repeatedly. Use  /  to scroll the table from top to bottom.

The "Log" screen context menu may also be used to define markers.



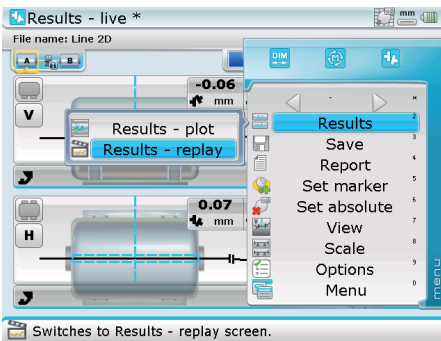
- ▶ 'Results' – this context menu item reveals two submenu items:
  - › 'Results - live' – during measurement, shows the current position of the machinery and the final position when measurement is finished. If this option is selected, the resulting context menu will reveal the item 'Results-plot'.
  - › 'Results - replay' – shows a video sequence of the measurement
- ▶ 'Browse' – the menu item reveals two submenu items:
  - › 'Browse markers' – with this submenu item, only defined measurements are browsed
  - › 'Browse all' – with this submenu item, the cursor browses all measurements taken
- ▶ 'Report' – this menu item is used to print the measurement file or save it as PDF (refer to the respective operating handbook for details on printing and saving files as PDF)
- ▶ 'Set marker' – this menu item reveals five markers that may be set. These are often significant points within the measurement:
  - › 'Hot' – used to indicate the running condition or when machinery has warmed up
  - › 'Cold' – used to indicate the initial running phase from being stationary
  - › 'Custom' – a customer-specified marker
  - › 'Start' – used to indicate point where the machines are started
  - › 'Stop' – used to indicate the point where machines are shut off
  - › 'Remove' – is used to delete unwanted markers
- ▶ 'Set to zero' – this context menu item is used to set the curve values where the cursor is presently located to the value zero.
- ▶ 'Set absolute' – this menu item reverses the setting of zero and is only available when a measurement value has been set to zero.
- ▶ 'Zoom' – this menu item reveals three submenu items:
  - › 'In' – is used to zoom in the graph, increasing the magnification of the curves
  - › 'Out' – zooms out the graph, reducing the magnification of the curves
  - › 'Show all' – is used to display the entire curves
- ▶ 'Scale' – this context menu item reveals two submenu items:
  - › 'Set scale' – used to set the maximum and minimum values of the graph
  - › 'Auto scale' – is used to magnify the curves so as to fit the display

## Getting started with ROTALIGN Ultra iS Live Trend

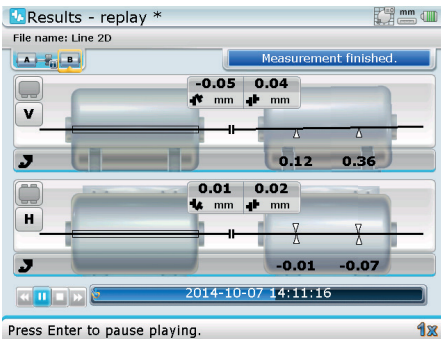
- ▶ 'Options' – this menu item returns the user to the "Results – Plot options" screen where the plots may be defined as desired.
- ▶ 'Menu' – used to access the global menu




### Video sequence

The video sequence of the measurement is another important Live Trend analysis tool. The measurement video sequence is replayed via the "Results" screen context menu item 'Results'.



With the submenu item 'Results-replay' highlighted, press  to view the video sequence of the measurement.



It is possible to rewind, pause, discontinue or fast forward the video sequence. Use  and select the desired action [  ] then press  to confirm selection.



## Exporting measurement files as a CSV file

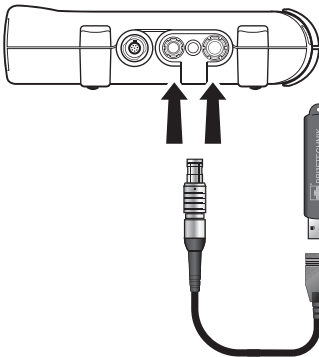
Measurement data appearing in the 'Log' may be exported as a CSV file and saved directly onto a memory stick.

After connecting the 'short' USB/peripheral devices cable ALI 12.503 to either ROTALIGN Ultra / ROTALIGN Ultra iS computer USB port, attach an approved PRÜFTECHNIK Alignment Systems memory stick into the 'short' USB cable.

Before connecting the memory stick to the ROTALIGN Ultra iS computer, make certain that the folder named 'Ultra' on the memory stick is empty, to prevent inadvertently launching a firmware upgrade of the device.




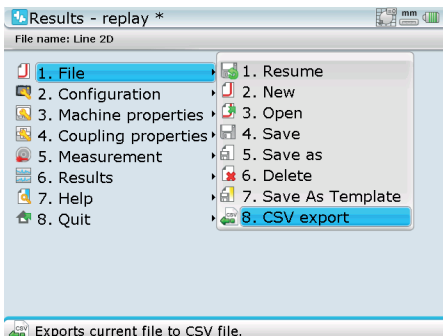
Note



USB memory stick ALI 4.451.  
Other PRÜFTECHNIK approved memory sticks may also be used.

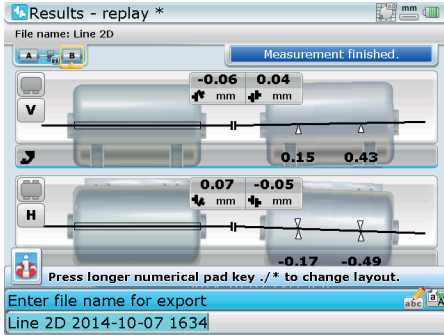
USB/peripheral devices cable  
ALI 12.503


Press  twice to open the global menu, then use the navigation keys and highlight the item 'CSV export'.




## Getting started with ROTALIGN Ultra iS Live Trend

Press  to confirm selection. The editing box opens.






Enter the CSV file name then press . The CSV file will now be saved to the attached memory stick, which can then be analyzed on a PC.

Alternatively, measurement data may also be exported as CSV files for saving to a memory stick via the "Log" screen. After accessing the "Log" screen, press  to reveal the context menu.

**Note:** The "Log" screen may be accessed via the context menu for "Results plot" screen (see page 22).



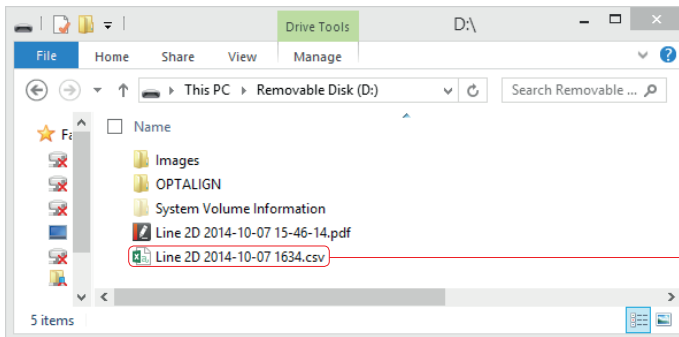
26

Use  and  and highlight the item 'CSV'. With 'CSV' highlighted, press  to save the exported CSV file on to the attached memory stick.

## Displaying the CSV file as a spreadsheet

The exported CSV file displays Live Trend data bundled together in single cells. To be able to use the data effectively, it is necessary to display the data in correct tabular format. Follow the following steps to reformat the exported CSV file data to a columnar format.

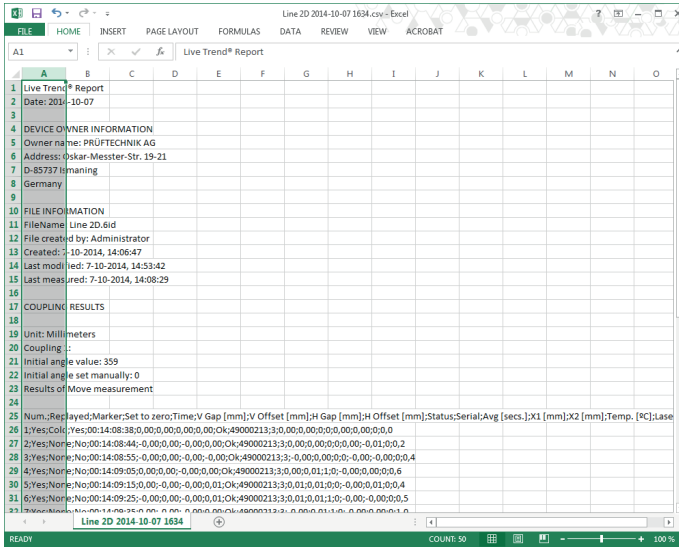
1. Live Trend measurement data is exported as a CSV file then saved on a memory stick as described in the 'Live Trend Getting started' guide. After saving the file on a memory stick, transfer it to a PC. Now navigate to the drive you saved the CSV file.



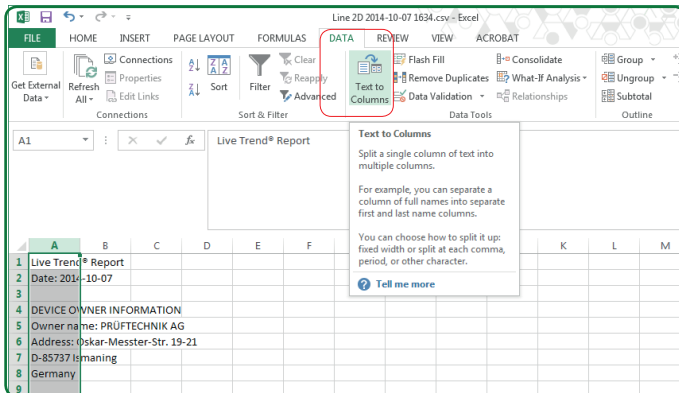
The CSV file has an Excel icon

2. You will notice the icon for the file looks like an Excel file. Double click on the icon to open this file in Excel. You will notice that the data take up one column and several rows and separated through semicolons only. Click on the column header to select the entire column, in this case column A [as shown next].

## Getting started with ROTALIGN Ultra iS Live Trend

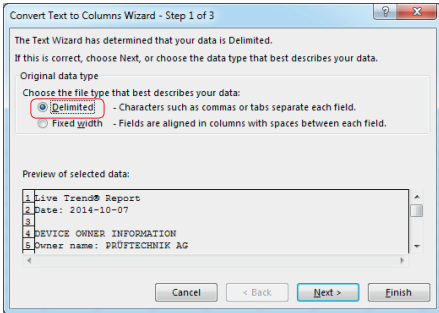


3. With column A highlighted, click the menu bar item 'Data' followed by 'Text to columns'.

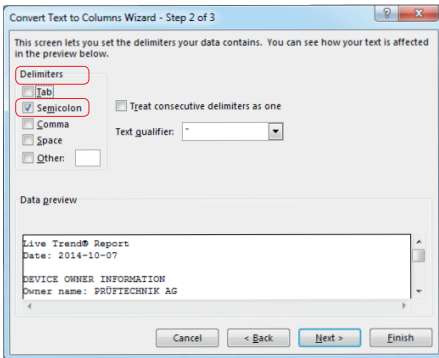


28

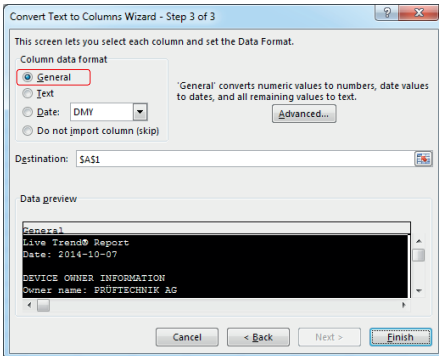
4. On clicking 'Text to columns', the 'Text to Columns' wizard opens.
5. In the wizard, choose 'Delimited' [see next screen].



- Confirm selection by clicking the 'Next' button.
- In the second step of the wizard, choose under the 'Delimiters' frame the option 'Semicolon [as this is how the data is separated in the Live Trend CSV file], then click the 'Next' button to proceed.



- In the final window, you may preview the table, but leave the 'Column data format' set to 'General' which is the default.



## Getting started with ROTALIGN Ultra iS Live Trend

9. Now click the 'Finish' button to exit the wizard and get your neatly arranged spreadsheet.

Num.	Replayed	Marker	Set to zen Time	V Gap [mr V Offset]	H Gap [mr H Offset]	Status	Serial	Avg [secs. X1 [mm]	X2 [mm]	Temp. [°C]
1	Yes	Cold	Yes 00:14:08:3	0	0	0 OK	49000213	3	0	0
2	Yes	None	No 00:14:08:4	0	0	0 OK	49000213	3	0	0
3	Yes	None	No 00:14:08:5	0	0	0 OK	49000213	3	0	0
4	Yes	None	No 00:14:09:0	0	0	0 OK	49000213	3	0	0,01
5	Yes	None	No 00:14:09:1	0	0	0,01 OK	49000213	3	0,01	0,01
6	Yes	None	No 00:14:09:2	0	0	0,01 OK	49000213	3	0,01	0,01
7	Yes	None	No 00:14:09:3	0	0	0 OK	49000213	3	0	0,01
8	Yes	None	No 00:14:09:4	-0,06	-0,08	0,11 0,21 OK	49000213	3	0,33	-0,02

## Saving report as PDF

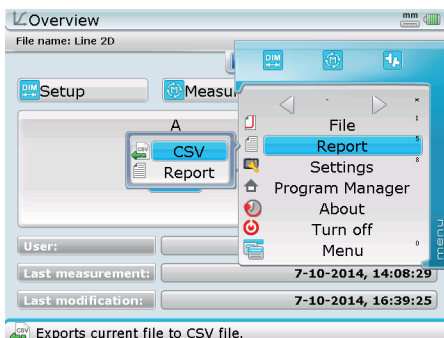
File measurement reports may be saved directly from the system as a PDF copy. For more information saving files as PDF please refer to the respective operating handbook.

30

Note that with Live Trend there is the added option of exporting measurement files to CSV file via the overview screen.



Note



Select 'Report' -> 'Report' then proceed to save report as PDF (refer to the respective operating handbook).  
Selecting 'Report' -> 'CSV' exports measurement file to a CSV file.



### Saving measurement files

Measurement files are saved as described in the respective operating handbook.

## XY Tracking

### What is XY Tracking?

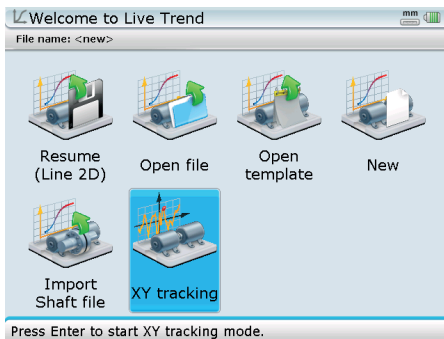
XY Tracking is the monitoring of machinery movement on the dual position detectors of the sensor. This measurement displays the raw horizontal (X) and vertical (Y) detector values.


In XY Tracking, the user has the ability to determine type of movement to be measured. This could either be relative or absolute movement.



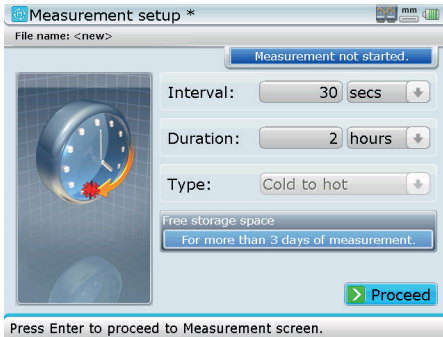
### Carrying out XY Tracking

After mounting the laser and sensor as required [refer to the section 'Mounting brackets' starting on page 9], proceed to turn on ROTALIGN Ultra / ROTALIGN Ultra iS computer and start the Live Trend application. After starting the application, use the navigation keys to highlight on the 'XY Tracking' icon.



With the 'XY Tracking' icon highlighted, press  to access the "Measurement set-up" screen.

## Getting started with ROTALIGN Ultra iS Live Trend



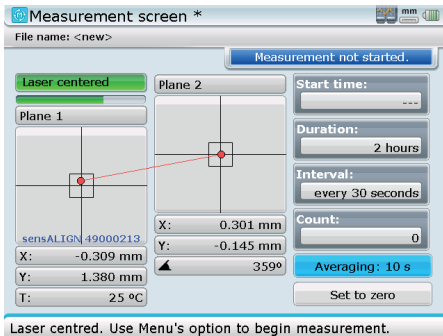
In the "Measurement set-up" screen edit the sampling interval and the measurement span. Notice that the running condition is grayed out and therefore not required for XY Tracking.

Having edited the measurement parameters, use the navigation keys to highlight the 'Proceed' button then press .

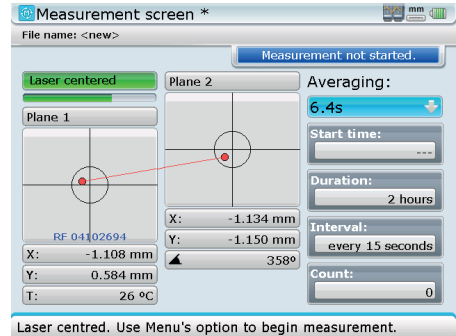
Before the measurement screen opens, a hint indicating change in the averaging appears.



### ▶ sensALIGN laser and sensor



### ▶ ROTALIGN laser and sensor

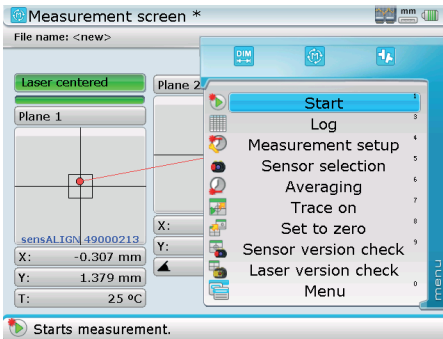


The above screens appears if the laser beam is centred and communication between ROTALIGN Ultra / ROTALIGN Ultra iS computer and the respective sensor is established.

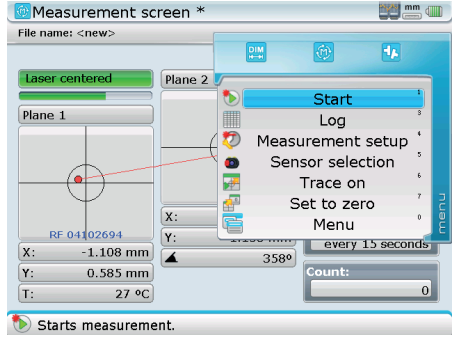
The averaging may be edited in the above screens if required.

To start the XY Tracking, press **Menu** while in the "Measurement screen" then use **▽** / **△** and highlight the context menu item 'Start'

▶ sensALIGN laser and sensor

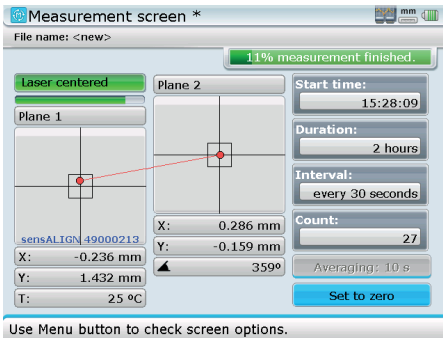


▶ ROTALIGN laser and sensor



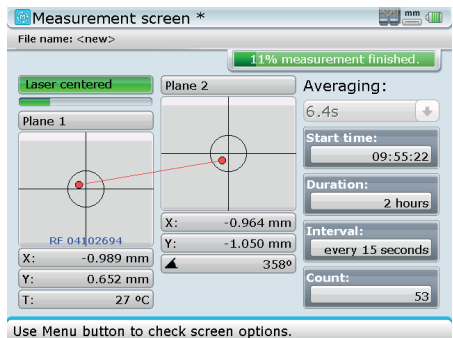
Start measurement by pressing **Enter**.

▶ sensALIGN laser and sensor



Use Menu button to check screen options.

▶ ROTALIGN laser and sensor

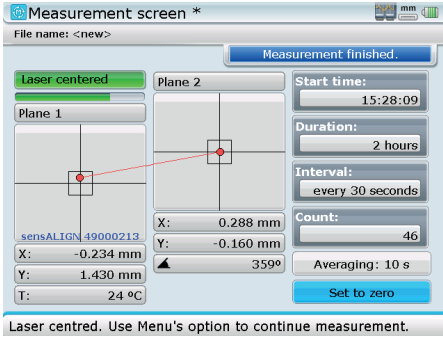


Use Menu button to check screen options.

When measurement is finished, the measurement status bar turns blue.

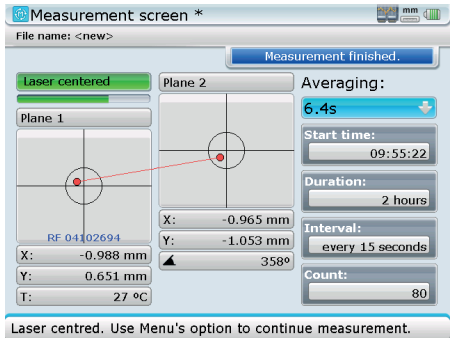
## Getting started with ROTALIGN Ultra iS Live Trend

### ▶ sensALIGN laser and sensor



Laser centred. Use Menu's option to continue measurement.

### ▶ ROTALIGN laser and sensor

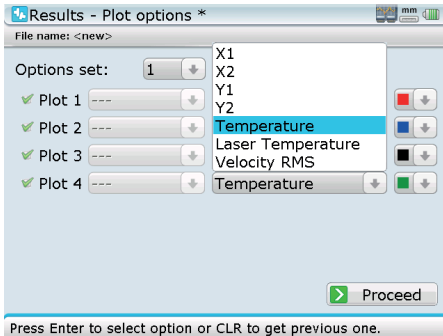


Laser centred. Use Menu's option to continue measurement.

## Viewing results

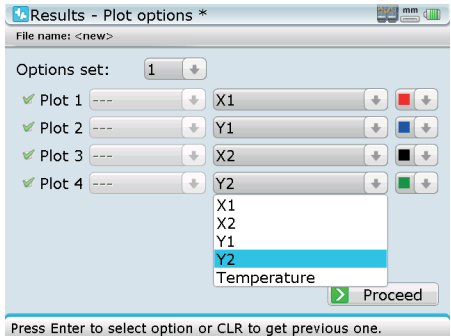
After measurement has come to an end, press **RES** to view results. From the "Results - Plot options" screen that appears, proceed to define the curves to be plotted, then highlight the 'Proceed' button and confirm selection by pressing **Enter**.

### ▶ sensALIGN laser and sensor



Press Enter to select option or CLR to get previous one.

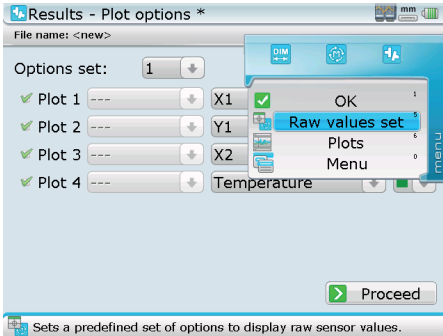
### ▶ ROTALIGN laser and sensor




Press Enter to select option or CLR to get previous one.

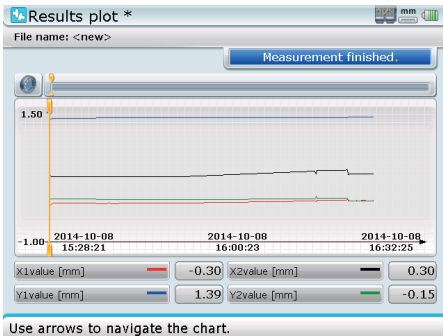
The parameters that may be selected in the plot drop down menus are the raw X,Y data on the two position detectors, and the sensor temperature. If using sensALIGN laser and sensor for measurement additional parameters that may be plotted include laser temperature and vibration measurement as velocity RMS.

Alternatively use the context menu to select the option to display collected raw data.



The context menu item 'Raw values set' is the standard XY Tracking results option and displays the X,Y values in both position detectors.

Highlighting 'proceed' and confirming selection by pressing  reveals the defined graphs.



Use arrows to navigate the chart.

## Live Trend technical data

The following technical data is restricted to the Live Trend application only. For a detailed ROTALIGN Ultra iS [or ROTALIGN Ultra] system technical data please refer to the corresponding system brochure and the respective operating handbook.

Also note that the respective system computer, sensor and laser are not included in the Live Trend ROTALIGN Ultra Shaft Expert add-on modules.

### System computer

Power supply                      Lithium-Ion rechargeable battery: 7.2 V / 6.0 Ah  
Operating time: approx. 10 hours continuous measurement with fully charged battery  
External power supply

### sensALIGN laser

Power supply                      Lithium Polymer rechargeable battery 3.7 V / 1.6 Ah 6 Wh  
Operating time: approx. 70 hours continuous use with fully charged battery  
External power supply

### sensALIGN sensor

Power supply                      Lithium Polymer rechargeable battery 3.7 V / 1.6 Ah 6 Wh  
Operating time: approx. 12 hours continuous use with fully charged battery

### ROALIGN laser

Power supply                      9V block battery (IEC 6LR61, alkali or lithium)  
Operating time: approx. 80 hours with a new good quality block battery

### ROALIGN sensor

Power supply                      Powered via system computer or Bluetooth module (optional)

### Bluetooth module for wireless communication with ROTALIGN sensor (optional)

Power supply                      Batteries 2 x 1.5 V IEC LR6 ("AA")  
Operating time: approx. 7 hours continuous use with new good quality batteries

# Index

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## A

ALI 2.190 7  
ALI 2.191 6, 7  
ALI 2.192 7  
ALI 2.193 6  
ALI 2.194 7  
ALI 4.005/2-10 5  
ALI 4.005/2-20 5  
ALI 4.451 6  
ALI 4.740  
  Shaft Expert  
  registration certificate 8  
ALI 4.743 6  
ALI 12.503 25  
ALI 14.310 6  
ALI 14.320 6  
Allen key 6  
Anti-torsion bridge 10, 12

## C

Clamping lever 12  
Coupling results set 21  
CSV file 17, 25

## D

DOC 04.100.en 6

## E

Embedding 12

## F

Feet corrections set 21  
File  
  storage capacity 16

## I

Import  
  shaft alignment file 15

## L

Licence Manager 8  
Log 22

## M

Magnetic brackets  
  mounting 10  
Markers 22  
  set 23  
Measurement status bar 19  
Mounting base 12

## P

PERMAFIX brackets 11

## R

Raw XY values 21  
Results plot 18  
Running condition 16

## S

Sampling interval 16  
Shaft Alignment  
  firmware 5  
Shaft Expert  
  firmware voucher ALI 4.743 5  
  platform 1  
  registration certificate ALI 4.740 5  
  upgrading 5

Shaft Expert add-on module  
  ALI 4.005/2-10 6  
  ALI 4.005/2-20 7  
Shaft Expert firmware voucher  
  ALI 4.743 7  
Striking cone 12

## T

Toggle machines 15

## V

Video sequence 20, 24

## X

XY Tracking 31

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