

# ROTALIGN® Ultra iS

Multiple Coupling – Getting started





# Multiple Coupling – Getting started

Dear Customer,

Thank you for acquiring the Multiple coupling functionality, an additional module 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 sets out to aid the ROTALIGN Ultra Shaft Expert user with the Multiple Coupling application. This document is to be used in conjunction with the ROTALIGN Ultra iS Shaft handbook DOC 40.200.en.

PRÜFTECHNIK Condition Monitoring GmbH

Oskar-Messter-Str. 19 – 21

85737 Ismaning

Germany

Tel +49.89.99616-0

Fax +49.89.99616-300

Email [info@pruftechnik.com](mailto:info@pruftechnik.com)

Edition November 2014

Part number DOC 40.109.en

Firmware version 3.xx

ROTALIGN® is a registered trademark of PRÜFTECHNIK Dieter Busch AG. PRÜFTECHNIK products are the subject of patents granted and pending throughout the world. Contents subject to change without further notice, particularly in the interest of further technical development. Reproduction, in any form whatsoever, only upon express written consent of PRÜFTECHNIK Condition Monitoring GmbH.

© Copyright 2014 by PRÜFTECHNIK Condition Monitoring GmbH



# Contents

---

Multiple Coupling – Getting started.....	1
Safety notes .....	3
Symbols used in this guide .....	3
Laser safety .....	3
Notes regarding data storage.....	4
General information .....	4
Introducing Multiple Coupling . . . . .	4
What is Multiple Coupling? .....	4
Firmware requirements for Multiple Coupling.....	5
Updating the ROTALIGN Ultra firmware version .....	5
Upgrading to Shaft Expert .....	5
Multiple Coupling package ALI 40.900 . . . . .	6
ROTALIGN Ultra iS sensALIGN Expert add-on package ALI 40.900.....	6
Getting started . . . . .	8
Multiple element drives.....	8
Set-up .....	8
Preparing for Multiple Coupling measurement.....	11
Understanding "Multiple Coupling measurement" screen icons.....	11
Understanding the Multiple Coupling measurement screen .....	12
Enabling coupling for measurement.....	14
Selecting measurement mode.....	14
Single coupling measurement screen .....	15
Selecting sensor/communication mode .....	15
Taking measurements using Continuous Sweep .....	17
Taking measurements using Multipoint and Static measurement mode .....	19
Other Multiple Coupling measurement options.....	20
Evaluating results.....	23
Aligning multiple element drive trains .....	25
Live Multiple Coupling simultaneous Move .....	27
Index . . . . .	30

## 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 Condition Monitoring.

### Symbols used in this guide

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.

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

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

This laser safety warning symbol denotes laser radiation.

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



Note



CAUTION



WARNING



1

### 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.



The ROTALIGN Ultra Multiple Coupling functionality and the related 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 strongly recommends that you keep a backup or printed record of all important data.
- ▶ PRÜFTECHNIK assumes no liability for data lost or altered as a result of improper use, repairs, defects, battery replacement/ failures or any other cause.
- ▶ PRÜFTECHNIK 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 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 inspection due date is November 2016.



# Introducing Multiple Coupling

---

4

This quick guide assumes that the user is fully conversant with the operation of the ROTALIGN Ultra iS computer. It is highly recommended to refer to the ROTALIGN Ultra iS Shaft handbook DOC 40.200.en if and when necessary.



Note

## What is Multiple Coupling?

Multiple Coupling is an additional functionality running on the ROTALIGN Ultra Shaft Expert platform. This functionality is used to determine the alignment condition of multiple-element drives with three or more machines without the need to mount or dismount components as in conventional alignment methods. The functionality may be used to measure up to six couplings simultaneously.

### Firmware requirements for Multiple Coupling

The functionality Multiple Coupling runs only on ROTALIGN Ultra iS [or ROTALIGN Ultra] computer ALI 4.202 using the current ROTALIGN Ultra Shaft firmware. In addition to the current firmware version, the ROTALIGN Ultra Shaft Expert module must be licenced and activated.

Note that the Multiple Coupling functionality runs only on the ROTALIGN Ultra computer [with a black faceplate] ALI 4.202.

### Updating the ROTALIGN Ultra firmware version

The latest ROTALIGN Ultra Shaft firmware version may be downloaded from the official PRÜFTECHNIK website – [www.pruftechnik.com](http://www.pruftechnik.com). Detailed instructions on how to update the firmware are contained in the current version of the ROTALIGN Ultra iS Shaft handbook DOC 40.200.en.

### Upgrading to Shaft Expert

To be able to use the Multiple Coupling functionality, 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 contained in the ROTALIGN Ultra iS sensALIGN Expert add-on package ALI 40.900, to PRÜFTECHNIK Condition Monitoring 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.

Note: The ROTALIGN Ultra iS Multiple Coupling package is called ROTALIGN Ultra iS sensALIGN Expert add-on package ALI 40.900.

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 ROTALIGN Ultra iS handbook DOC 40.200.en under "Upgrading from Standard Shaft to Advanced Shaft version".

The Multiple Coupling function can be applied using a combination of sensALIGN heads [laser and sensor] together with ROTALIGN heads [laser and sensor]. If also using ROTALIGN components, please refer to the ROTALIGN Ultra Multiple Coupling Getting started DOC 04.805.en.



Note

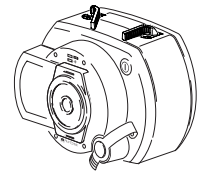
## Multiple Coupling package ALI 40.900

The Multiple Coupling package using sensALIGN sensor and laser is ROTALIGN Ultra iS sensALIGN Expert add-on package ALI 40.900.

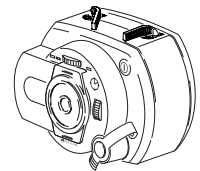
If further assistance with regard to ROTALIGN Ultra Multiple Coupling package configurations is required, please contact your local PRÜFTECHNIK Alignment representative.

### ROTALIGN Ultra iS sensALIGN Expert add-on package ALI 40.900

ALI 4.900	sensALIGN sensor [sensALIGN rechargeable battery ALI 4.960 is mounted]
ALI 4.910	sensALIGN laser [sensALIGN rechargeable battery ALI 4.960 is mounted]
ALI 4.921-2	sensALIGN sensor and laser cable
ALI 4.651-I	sensALIGN charger/adaptor (universal) – for powering and charging sensALIGN sensor/laser and rechargeable battery]
ALI 2.113 SET	Compact chain-type bracket set includes: chains – ALI 2.114, ALI 2.115 support posts – ALI 2.170, ALI 2.171, ALI 2.172, ALI 2.173, ALI 2.174 storage pouch – ALI 3.590-200
ALI 2.905	Lens cleaning cloth
ALI 3.588	Tape measure mm/inch
ALI 4.451	USB memory stick
ALI 4.905	Vibration check probe
DOC 40.109.en	ROTALIGN Ultra iS Multiple Coupling Getting started (this handbook)
DOC 40.100.en	ROTALIGN Ultra iS Shaft pocket guide
DOC 40.200.en	ROTALIGN Ultra iS Shaft operating handbook
DOC 40.900.en	ROTALIGN Ultra iS product catalog
ALI 13.700 CD	ALIGNMENT CENTER CD
ALI 4.742	ROTALIGN Ultra Shaft Advanced firmware voucher
ALI 4.743	ROTALIGN Ultra Shaft Expert firmware voucher
0 0739 1055	2.5 mm allen key
ALI 4.820	ROTALIGN Ultra iS Shaft case



ALI 4.900



ALI 4.910

sensALIGN sensor ALI 4.900 and sensALIGN laser ALI 4.910 are shown here with the sensALIGN rechargeable battery ALI 4.960 attached.





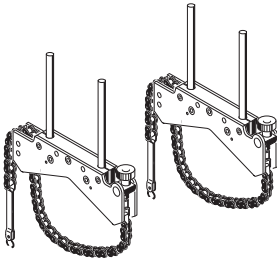
ALI 4.921-2



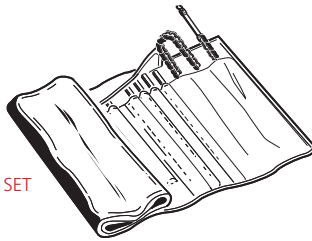
ALI 4.651-I



ALI 2.905



ALI 2.113 SET



ALI 3.588



ALI 4.905

DOC 40.200.en



0 0739 1055



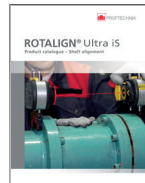
ALI 4.451



DOC 40.109.en



DOC 40.100.en



DOC 40.900.en



ALI 4.742



ALI 4.743



ALI 4.820

# Getting started


## Multiple element drives

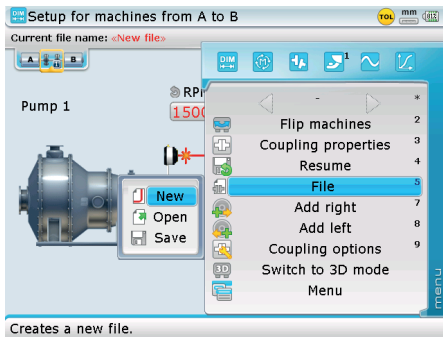
### Set-up

1. After starting the alignment application, either select a suitable template or configure the machines as appropriate.



The Multiple Coupling functionality may be used to measure machine trains with up to six coupling positions.

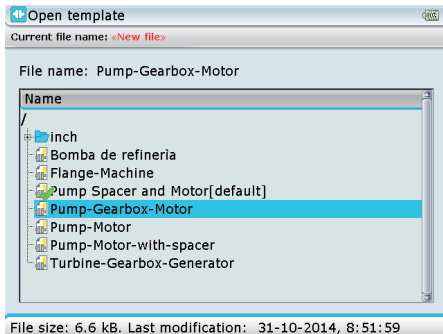


2. To select a suitable template, press  while in the set-up screen. The context menu appears. Use the navigation keys to select 'File' -> 'New'



8

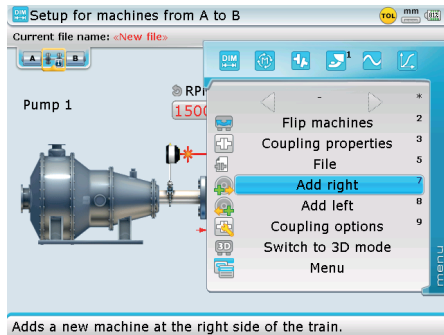
3. Confirm selection by pressing . The 'Open template' screen appears. Use / to select desired template.



After highlighting the required template, confirm selection by pressing



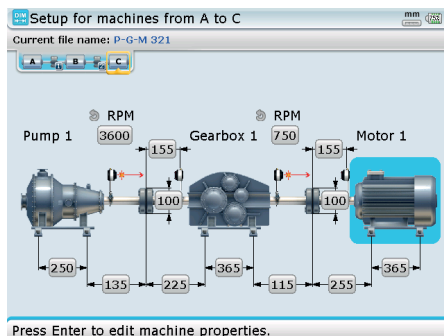
Multiple machine trains can also be configured from the set-up screen. Press . The context menu appears. Use / to highlight 'Add left' or 'Add right' depending on which end of the machine train a machine is to be added.



After highlighting the required train end, confirm selection by pressing .




After either selecting an appropriate template or configuring the machine train, proceed to define the machines and enter the corresponding dimensions as detailed in the ROTALIGN Ultra iS Shaft handbook DOC 40.200.en [sections 4.7 and 4.8].

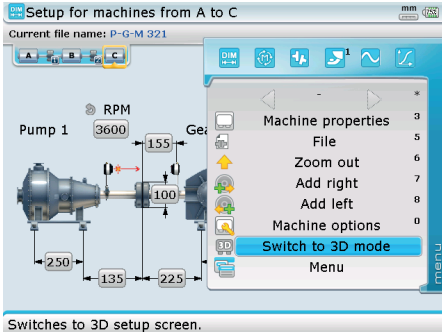
A multiple element drive train of up to a maximum of seven machines (six couplings) can be measured using the Multiple Coupling functionality.



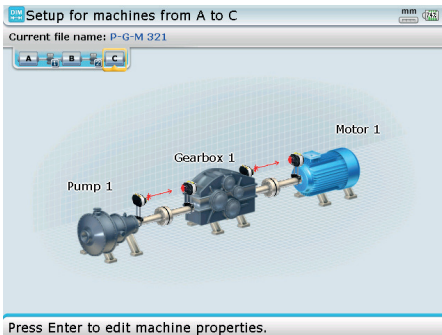
The complete machine train can be viewed using the context menu item 'Zoom out' [use / to zoom out/in respectively], however, the maximum number of machines for which all dimensions can be viewed at one time, in 2-D, is 5 machines (4 couplings) Use / to scroll through the elements in the train.



## ROTALIGN Ultra iS Multiple Coupling – Getting started

Elements in the machine train may be displayed in 3-D format. The maximum number of machines that may be displayed at any one time is four machines. The 3-D mode is accessed via the "Set-up" screen context menu item 'Switch to 3-D mode'. While in the "Set-up" screen, press  then use / and highlight 'Switch to 3-D mode'.

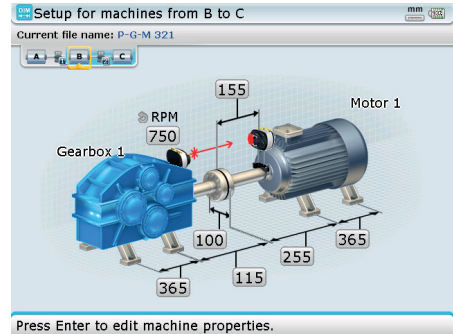
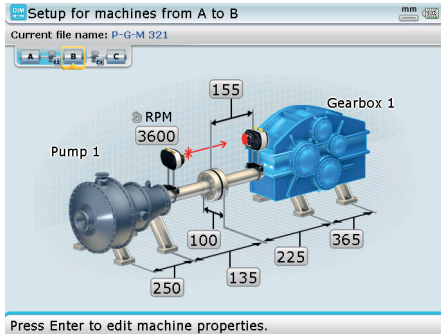


Confirm selection by pressing . The elements appear in 3-D graphics.



Note that the 3-D format displays only a maximum of four machines. To display elements on the far left or far right of the train, press / long enough, respectively.

For clarity of depiction the maximum number of machines for which all dimensions are displayed is limited to two machines (one coupling position).



### Preparing for Multiple Coupling measurement

Ensure that the measurement components have been mounted as required. You may refer to the ROTALIGN Ultra iS handbook DOC 40.200.en.





The Multiple Coupling functionality has the ability to carry out measurement using five Bluetooth modules [integrated within sensALIGN sensor], and the sensor cable connected via the RS 232 port simultaneously.







Note

### Understanding "Multiple Coupling measurement" screen icons

To perform Multiple Coupling measurement with ease, it is important to get acquainted with the following screen icons.


- ▶  — The green check mark icon is used to enable measurement be taken at the selected coupling position.
- ▶  — The measurement mode icon is used to select the measurement mode to be used to measure the respective coupling position.
- ▶  — This icon is used to display the measurement screen for the single coupling position selected.
- ▶  — This icon is used to select the sensor and mode of transmitting data to ROTALIGN Ultra iS computer.

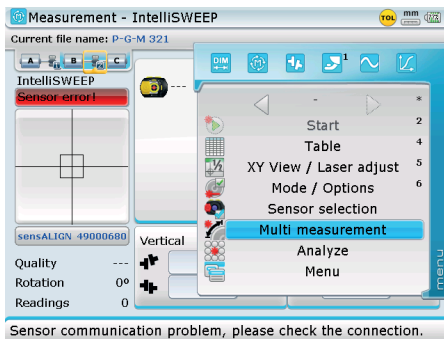
## ROTALIGN Ultra iS Multiple Coupling – Getting started




- ▶  — The start measurement icon is used to start measurement at the particular coupling position and appears at the same position as the check mark. The icon appears at all coupling positions as soon as the first coupling measurement is started.
- ▶  — The stop measurement icon which is used to stop measurement at the particular coupling position appears at the same position as the start measurement icon. This happens as soon as measurement at the selected coupling position is started
- ▶  — The extend measurement range icon is used to extend the sensor detector measurement range at the selected coupling position. This icon appears at the same position as the icon used to display measurement for a single coupling position [  ].


This option is available only when taking measurement using "Multipoint" and "Static" measurement modes.

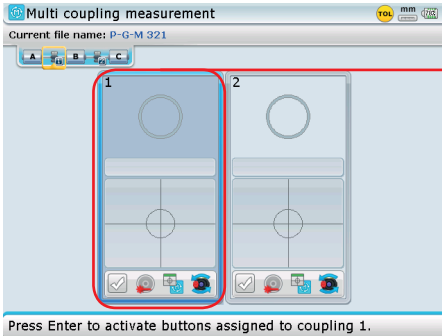
### Understanding the Multiple Coupling measurement screen

After setting up the measurement file and mounting components as required, press  twice to access the "Multiple Coupling measurement" screen. Alternatively, use the 'standard' measurement screen menu item 'Multi measurement'.






With the 'standard' measurement screen opened, press  to display the context menu items. Use  and  and highlight the context menu item 'Multi measurement'.

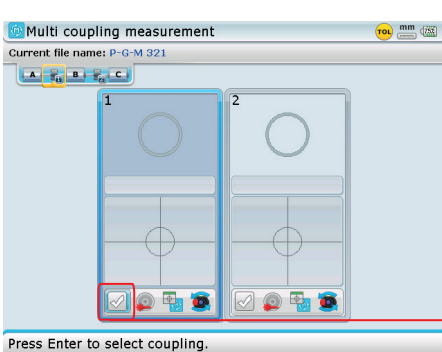
The following "Multiple coupling screen" opens when the selection above is confirmed through pressing .




In this example the configured machine train has two coupling positions with coupling position 1 presently highlighted.

Use  /  to cycle through all the machine train couplings.

To edit the measurement properties of any single coupling position, simply press  when the coupling position is highlighted.




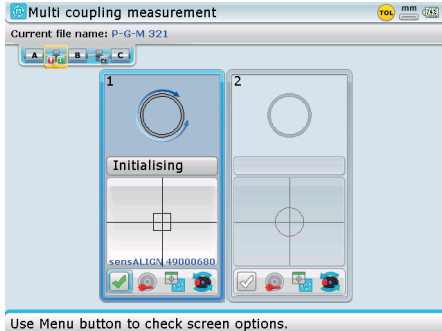
In this example,  has been pressed with coupling position 1 highlighted. The 'small' highlighting box appears on the check mark.


Check mark to enable coupling measurement

## ROTALIGN Ultra iS Multiple Coupling – Getting started




### Enabling coupling for measurement

The 'small' highlighting box appears round the check mark. With the check mark highlighted, press  to select the coupling at the highlighted position. The check mark is activated changing interior colour from white to green.





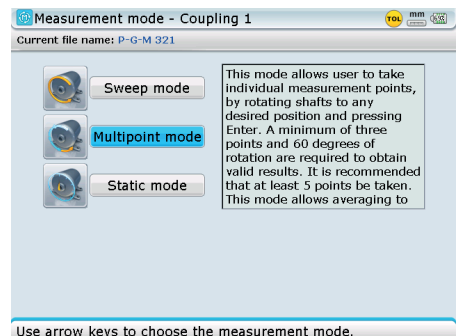
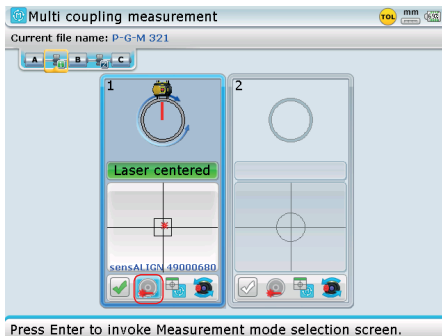
In this example, the 'small' highlighting box appears on the check mark and coupling 1 is selected by pressing .




When within a given coupling  position, use / to cycle through the available Multiple Coupling measurement properties. These include selection of measurement mode, use of the single coupling measurement screen and mode of transmitting measurement data to the ROTALIGN Ultra iS computer.

### Selecting measurement mode



14 To set the measurement mode to be used in measuring the selected coupling, highlight the measurement mode icon  then press  to confirm selection. The "Measurement mode" screen appears.








Use the navigation keys to select the desired measurement mode, confirming selection by pressing .

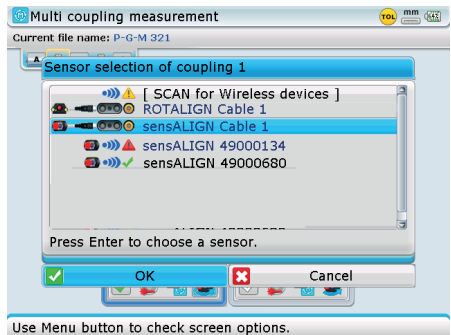
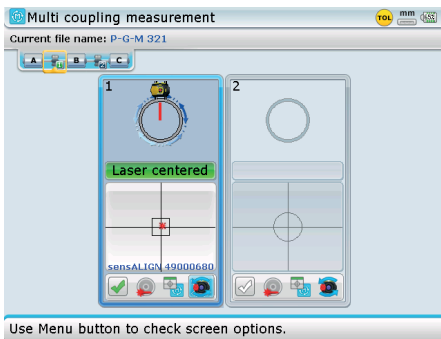
*Single coupling measurement screen*



Highlighting the measurement icon  then confirming selection by pressing  opens the single coupling measurement screen which may be used to monitor measurement at that particular coupling position and to access the measurement table for the particular position. The single measurement screen context menu item 'XY view' is used to carry out laser beam adjustment for the sensor and laser combination mounted at the particular coupling position, and set the averaging if using either "Static" or "Multipoint" measurement mode.




*Selecting sensor/communication mode*

The sensor icon  is used to select sensor or mode in which measurement data from the sensor is transferred to the ROTALIGN Ultra iS computer. Highlighting the sensor icon  then confirming selection by pressing  opens a "Sensor selection" window.

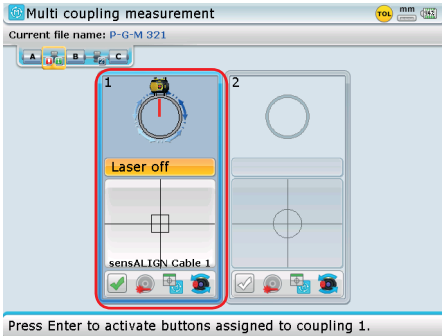





Use  /  to select the required sensor or mode for transmitting data to the computer.

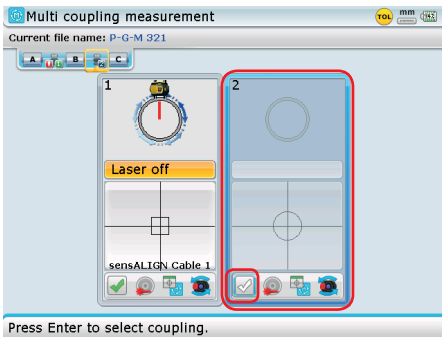
In the above example the current data transmission mode is via sensALIGN sensor Bluetooth. The mode is to be changed to sensALIGN cable.

To edit the properties of the next coupling position press  to exit the navigation of the property icons. Only one cursor is now active and it highlights the current coupling position.

## ROTALIGN Ultra iS Multiple Coupling – Getting started

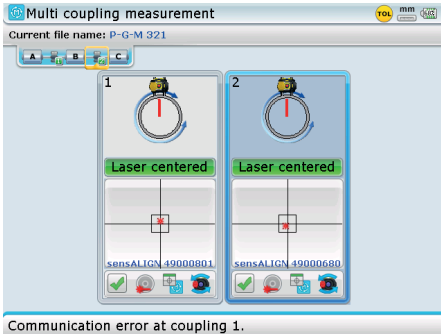


Now use   to highlight the next coupling position, then press  to confirm selection.



16 The measurement properties of the next coupling position may now be edited as described previously above.

After the measurement properties for all couplings have been set and all sensors initialized, the "Multiple Coupling measurement" screen appears as shown below.

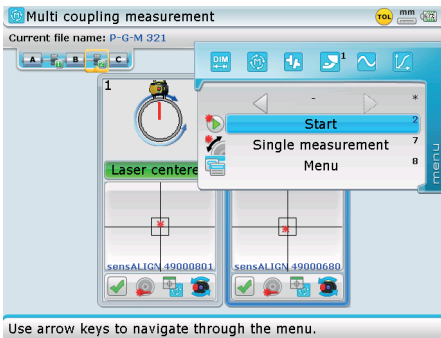



In this example, a three-machine train has been considered. Both coupling positions 1 and 2 will be measured simultaneously using Continuous Sweep measurement mode and measurement data for the two positions transferred via sensALIGN Bluetooth.




We are now ready to take measurements.

### Taking measurements using Continuous Sweep

Use the "Multiple Coupling measurement" screen context menu item 'Start' to commence measurement.

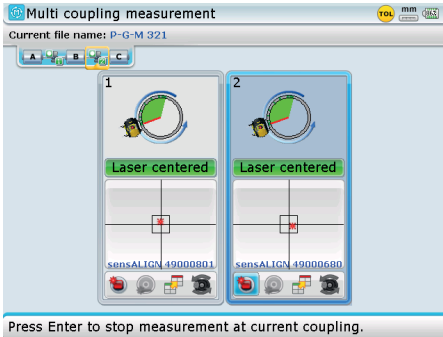


Alternatively, measurement may be started directly from the "Multiple coupling measurement" screen shown previously by pressing .

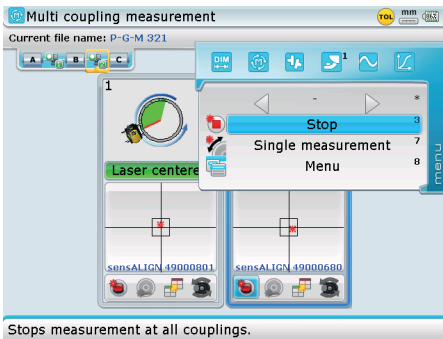
Use  /  to highlight 'Start' then press  to start taking measurement.

As the couplings in this example are being measured using Continuous Sweep mode, turn the shafts through a rotational angle as wide as possible.




## ROTALIGN Ultra iS Multiple Coupling – Getting started

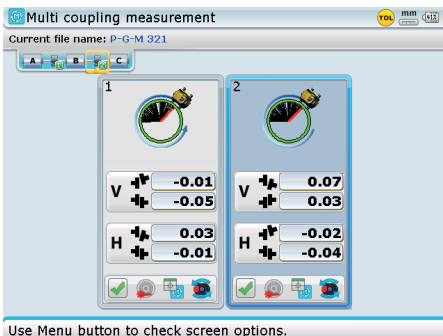


After rotation, stop measurement via the "Multiple Coupling measurement" screen context menu item 'Stop'.

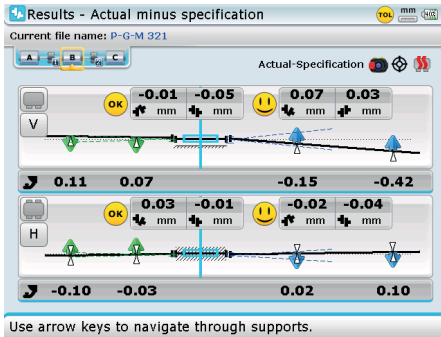


Alternatively, one may elect to stop measurement by pressing **RES** once. In this case, measurement will be stopped and all coupling results displayed.

18 Use  /  to highlight 'Stop' then press  to finish measurement and display coupling results.

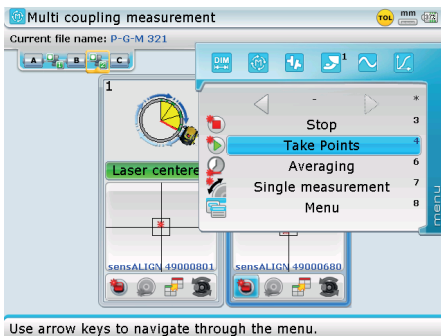


Press **RES** to view both machine foot results and coupling values.



### Taking measurements using Multipoint and Static measurement mode

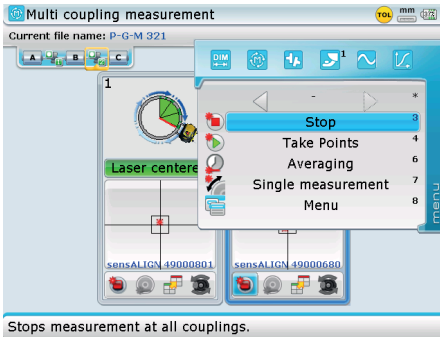
If using either Multipoint or Static measurement mode or a combination of both measurement modes, start measurement using the "Multiple Coupling measurement" screen context menu item 'Start'. Take measurement at the selected positions using the context menu item 'Take points'. Use **△** / **▽** to highlight 'Take points' then press **Enter** to take the measurement points at the selected shaft angular positions.



Alternatively, measurement may be started directly from the "Multiple coupling measurement" screen by pressing **Start** when the shafts are in the required positions. Measurements will be taken at the points each time **Start** is pressed.

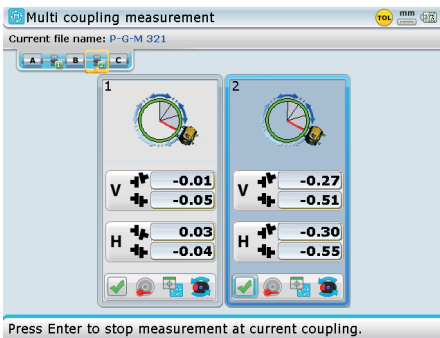
After taking sufficient measurement points, use the screen context menu item 'Stop' to finish measurement.

## ROTALIGN Ultra iS Multiple Coupling – Getting started



Alternatively, one may elect to stop measurement by pressing **RES** once. In this case, measurement will be stopped and all coupling results displayed.

Use **Δ**/**▽** to highlight 'Stop' then press **Enter** to finish measurement and display coupling result

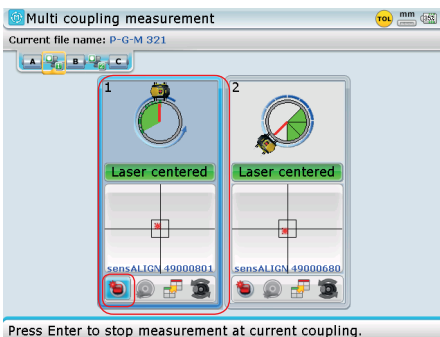


Press **RES** to view both machine foot results and coupling values.

20

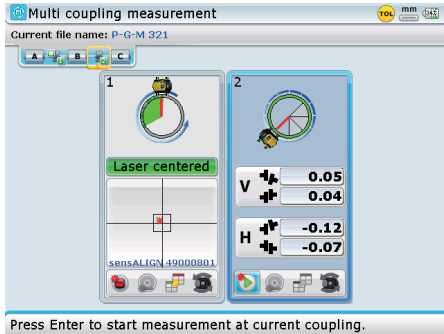
### Other Multiple Coupling measurement options




As soon as measurement is started, the 'start measurement icon' [▶] is replaced by the 'stop measurement' icon [⏹].



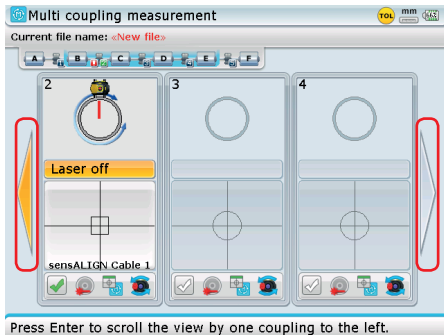
Use **▶**/**◀** to highlight the desired coupling position then press **Enter** to confirm selection. The 'small' highlighting box appears round 'stop measurement' icon [⏹]. Press **Enter** to stop measurement at the particular coupling position.




The above example is used to show how measurement on any one particular coupling may be finished directly within the measurement screen.






After stopping measurement at any given coupling position, the 'start measurement' icon [  ] appears. To start measurement at the selected coupling position, highlight  then press  to confirm selection.

The maximum number of coupling positions that may be displayed at any one time on the ROTALIGN Ultra iS computer screen is three. If the multiple machine train has more than three coupling positions, the "Multiple Coupling measurement" screen displays an image with broad scroll arrows that are used to control which three coupling positions are to be shown on the screen.

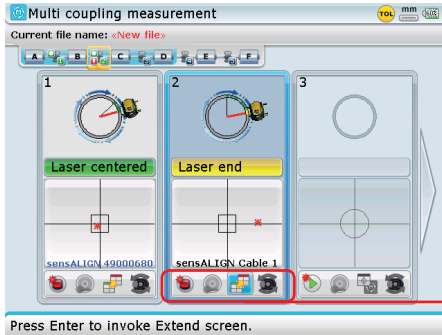


In this example, the broad arrow on the left has been highlighted. Confirming selection by pressing  reveals coupling positions 1, 2, and 3. If however the broad arrow on the right was highlighted and selection confirmed, then coupling positions 3, 4, and 5 would be displayed. The shifting of the view from left to right is also achieved by pressing  or  long enough.

Depending on the number of coupled machines within the train, broad scroll arrows appear on one or both sides of the train. To display the desired coupling position, use  /  to highlight the arrow then press  to display next coupling in the chosen direction.


## ROTALIGN Ultra iS Multiple Coupling – Getting started

Worse misalignment of the machine train shafts can cause the laser beam to leave the detector surface during measurement. When this happens, 'Laser end' appears on the display screen.



Measurement properties icons box

Note: Extend function cannot be started in 'Laser end' position. When the message appears, rotate shafts backwards until the laser beam re-enters the measurement range and either 'Laser OK' or 'Laser centered' appears on the display then proceed with Extend. For details of the Extend function refer to the ROTALIGN Ultra iS Shaft handbook DOC 40.200.en.

To use the 'extend measurement range' function within the "Multiple coupling measurement" screen, use  $\leftarrow/\rightarrow$  to highlight the coupling position where the 'extend' function is to be activated. Confirm selection by pressing  $\text{Enter}$ . The 'small' highlighting box appears on the measurement properties icons box. Use  $\leftarrow/\rightarrow$  to highlight the 'extend' function icon , then press  $\text{Enter}$ . The "Extend" screen opens. Proceed to use the 'Extend' function as described in the ROTALIGN Ultra iS Shaft handbook DOC 40.200.en [section 5.2.6 'Extending measurement range'].

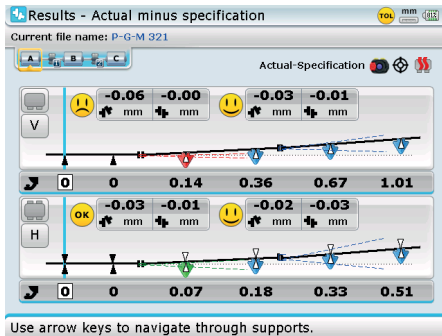
The 'extend' option is available only in Multipoint and Static Measurement modes.





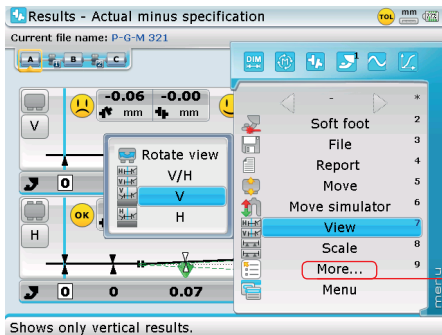
## Evaluating results

Once measurement is completed, press **RES** to display both coupling and foot results.



Use arrow keys to navigate through supports.

For a detailed analysis of the coupling alignment condition of the multiple element drive, results can be displayed in either vertical, horizontal or both planes by pressing **△**/**▽**. These depictions can also be displayed using the "Results" screen context menu item 'View'.



Shows only vertical results.

After highlighting the desired plane, confirm selection by pressing **Enter**. The results will now be displayed in the selected plane.

Individual coupling positions may be viewed by zooming the multiple machine train display in. Zooming the screen in or out is achieved by pressing **△**/**▽** long enough respectively.

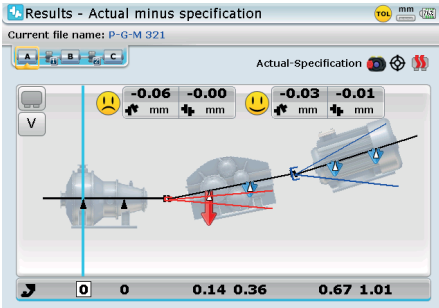
In addition to the smiley tolerance symbol, coloured correction arrows are used on the foot values as further help in determining the coupling alignment condition of the multiple element drive.

The colour codes for the foot positions are translated with respect to the adjacent coupling alignment condition as follows:

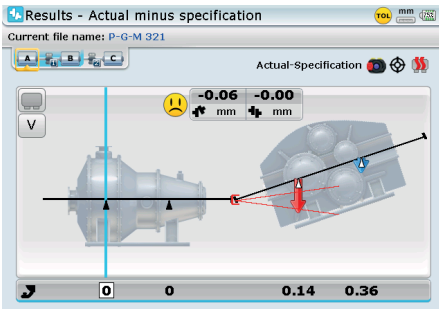
- excellent condition [foot should not be moved]
- good condition [if possible foot should remain unaltered]
- poor condition [foot requires moving to attain a better coupling alignment condition for the multiple element drive.

The context menu item 'More..' is used to access the submenu items 'Options' and 'Details'.

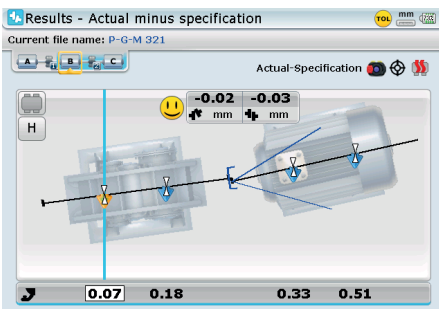
## ROTALIGN Ultra iS Multiple Coupling – Getting started



Use arrow keys to navigate through supports.



Use arrow keys to navigate through supports.



Use arrow keys to navigate through supports.

Short key presses of  $\Delta$  /  $\nabla$  cycles through the V/H, V and H results views.

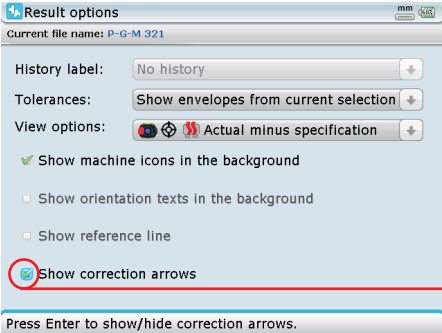
Pressing  $\text{RES}$  zooms out or zooms in the respective results view.

Pressing  $\nabla$  long enough zooms the machine train in while pressing  $\Delta$  long enough zooms the machine train out. The different single coupling V/H, V and H results views are then displayed by short key presses of  $\Delta$  /  $\nabla$ .

Note: The coloured correction arrow at any foot position shows feet correction with respect to the adjacent coupling position. In the example shown here, moving the feet with the red correction arrow predominantly influences the coupling values of machines A/B. Note however, that moving any foot pair affects the alignment condition of the entire machine train.

Pressing  $\triangleright$  /  $\triangleleft$  long enough displays the elements to the right or left respectively. The different single coupling V/H, V and H results views are then displayed by short key presses of  $\Delta$  /  $\nabla$ .

Foot results can also be displayed without the colour coded foot tolerances. This option can be deactivated in "Results options" screen. Select the results context menu item 'More..' followed by 'Options' then press  $\text{Enter}$  to confirm selection.



Check mark denotes that colour coded tolerances are activated. Deactivate by pressing  $\text{Enter}$ . The check mark disappears..

Use the navigation keys to highlight the 'Show correction arrows' check box. If a check mark is present, the colour coded tolerances are activated. Deactivate this option by pressing  $\text{Enter}$  with the check box highlighted. Foot results will now be displayed without the colour code tolerance arrows.

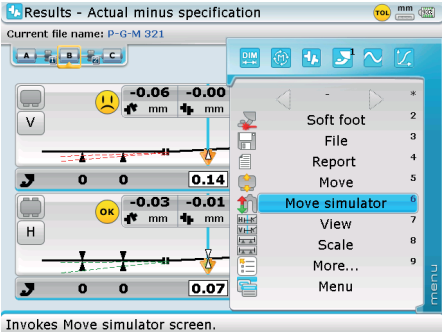
### Aligning multiple element drive trains

It is highly recommended that such demanding alignment tasks be carried out by experienced alignment personnel. Use all information available with regard to the drive train to be aligned.




After measuring all couplings on the multiple element drive train simultaneously, display the train results and optimize corrections. Before carrying out any real machine corrections you may use the Move simulator function to determine the foot correction values required to reposition the machines to achieve a collinear shaft operation.

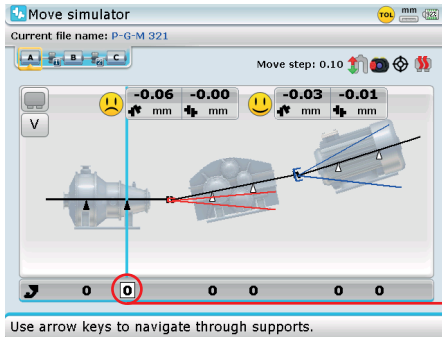
Access the Move simulator using the "Results" screen context menu.



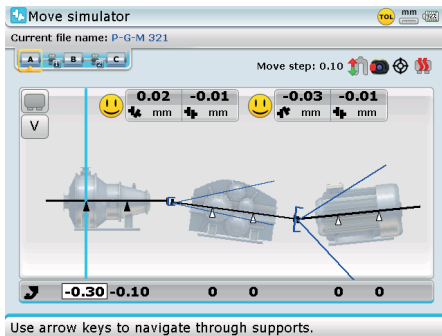
Invokes Move simulator screen.

## ROTALIGN Ultra iS Multiple Coupling – Getting started

Initiate the Move simulator by pressing  with the menu item 'Move simulator' highlighted.



Proceed to use Move simulator as described in the ROTALIGN Ultra iS Shaft handbook DOC 40.200.en.



In this example, an excellent alignment condition could be achieved by lowering the front feet of the pump by 0.10 mm and the back feet by 0.30 mm.

26


- › Note that the Move simulator menu item 'Options' which is used to activate the tolerance envelope, set the results format and display background elements is accessed via the "Results" screen menu item 'More...'.
- › To follow the position of the cursor, pay attention to the position of the white box just above the status line.

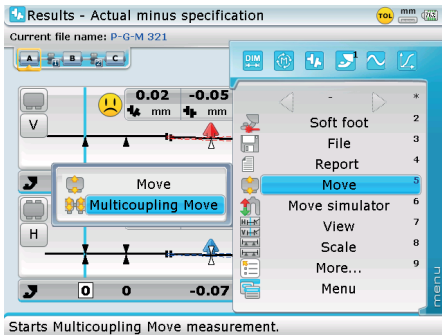


Note


### Live Multiple Coupling simultaneous Move

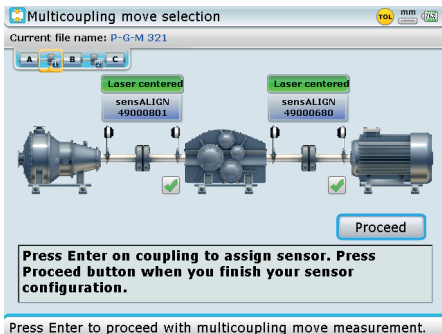
The alignment corrections involving shimming and the lateral positioning of the entire multiple element drive train can be followed in a real-time interactive display using the Live Multiple Coupling Move function.

From the results screen, press . The context menu appears. Use the navigation keys to highlight 'Multiple coupling Move'.






Starts Multicoupling Move measurement.

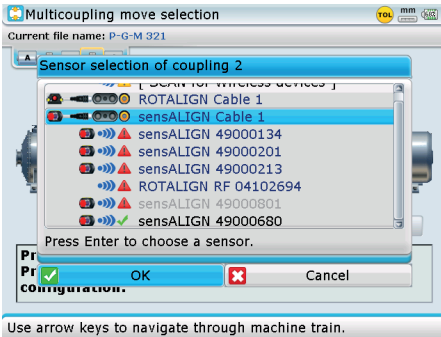
With the sub-menu item 'Multicoupling Move' highlighted, press  to access the "Multiple coupling Move selection" screen.



Press Enter to proceed with multicoupling move measurement.

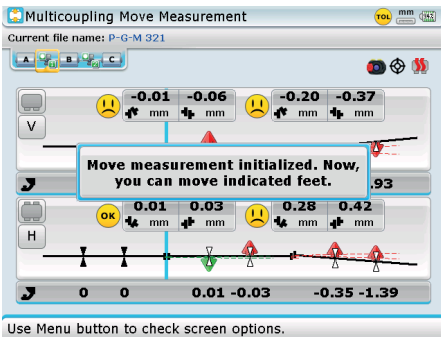
The above screen is used to identify sensors mounted at respective coupling positions. Should there be need to change the sensor or mode of data transmission at any given coupling position, use   to select the respective coupling then press . A window to assist in sensor selection and data transmission mode pops-up.

## ROTALIGN Ultra iS Multiple Coupling – Getting started

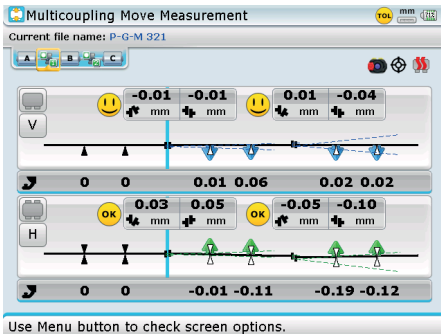


Use the window to set the sensor positions or data transmission mode as desired.

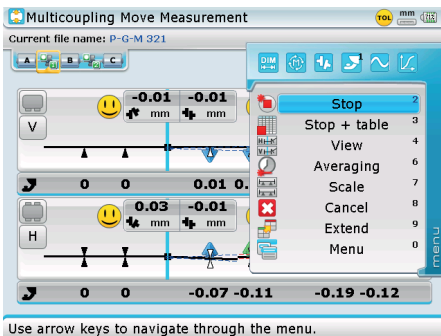
If no further configuration is deemed necessary, use  $\leftarrow$ / $\rightarrow$  and highlight 'Proceed' then confirm selection by pressing  $\text{Enter}$ . If all sensors are initialized, Live horizontal and vertical Multiple Coupling Move starts and can be monitored on the display.




Using the Live Multiple Coupling Move function and observing all plant and machinery maintenance requirements proceed to move machines as appropriate.



When a good alignment condition is attained, use the "Multiple coupling Move measurement" screen context menu item 'Stop' to finish Live Move.



Alternatively, press  to stop Live Move and start to remeasure the machines.

Consider the alignment successful after you have rechecked alignment by taking another set of measurements and the displayed results are within tolerances.

# Index

---

## Symbol

3-D format 10

## A

Accuracy

system 4

Add-on package ALI 40.900

ROTALIGN Ultra iS

sensALIGN Expert 5

ALI 4.740

ROTALIGN Ultra Shaft Expert

registration certificate 5

ALI 4.743

ROTALIGN Ultra Shaft Expert

firmware voucher 5

## C

Check mark 14

30

Colour coded

tolerances 24

## D

Data storage

notes 4

DOC 40.200.en

ROTALIGN Ultra iS Shaft

handbook 1

## F

Firmware version 5

## H

Handbook

ROTALIGN Ultra iS Shaft

DOC 40.200.en 4

## I

Inspection

due date 4

## L

Laser safety 3

Live Move function

multiple coupling 27

## M

Measurement mode 14

Continuous Sweep 17

Static 19

Measurement properties

icons box 22

Move simulator 26

cursor position 26

Multiple element drives 8

Multiple element drive train 9

Multiple element drive trains 25

Multiple machine trains 9



## R

### Results

colour codes 23

RS 232 port 11

## S

### Screen icon

data transmission 15

extend measurement range 12

measurement 15

start measurement 12

Screen icons 11

### Scroll arrows

broad 21

Shaft Expert platform 4

### Symbols

safety 3

## U

### Upgrading

Shaft Expert 5

## Z

### Zooming

in/out 23

Page intentionally left blank



Visit our Internet homepage for  
information on new products,  
accessories and technical applications.

[www.pruftechnik.com](http://www.pruftechnik.com)

---

ROTALIGN® Ultra is a registered trademark of PRÜFTECHNIK Dieter Busch AG. No copying or reproduction of this information, in any form whatsoever, may be undertaken without express written permission of PRÜFTECHNIK Condition Monitoring GmbH. The information contained in this leaflet is subject to change without further notice due to the PRÜFTECHNIK policy of continuous product development. PRÜFTECHNIK products are subject to patents granted or pending throughout the world.



PRÜFTECHNIK  
Condition Monitoring GmbH  
Oskar-Messter-Str. 19 – 21  
85737 Ismaning  
Germany  
Tel +49 89 99616-0  
Fax +49 89 99616-300  
[info@pruftechnik.com](mailto:info@pruftechnik.com)  
[www.pruftechnik.com](http://www.pruftechnik.com)

A member of the PRÜFTECHNIK Group