

Precision Meets Connectivity

The first cloud-based shaft alignment system ROTALIGN® touch integrates shaft alignment into the overall plant assessment

Big Data, Cloud, Internet of Things, and Smart Factory: This is just a selection of the buzzwords currently dominating the discussions in many industry sectors. Beneath all of this is the need for almost complete automation of production and control processes.

However, the move towards self-controlling production plants increases the functional complexity and also drastically increases the requirements on the operating personnel. User-friendly and well-conceived solutions will therefore become even more important in the future.

Objective: Smart Factory

An important prerequisite for automation and plant management is the communication among the machines. For this reason, connecting all the components within a plant is a central prerequisite for setting up the so-called "Smart Factory." The vision of the Smart Factory also requires that all upstream and downstream production processes be interconnected. Such a plant monitoring system also requires interfaces for the seamless data exchange between plant control, process visualization, and operator.

Device connectivity is the measure of all things in maintenance as well

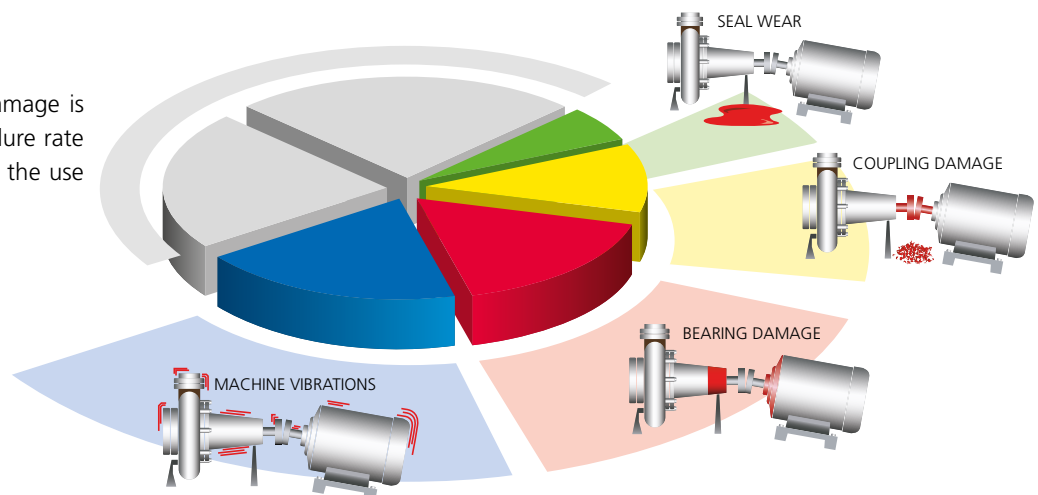
Comprehensive device connectivity, be it via a network, Bluetooth, Wi-Fi, or a Cloud solution is also a key requirement when implementing maintenance solutions. Connectivity is decisive for mobile service and maintenance teams. They often perform maintenance work at different sites and/or for different clients and need to be able to call up orders or send measurement reports at any time.

Alignment as part of the maintenance strategy

Intelligent condition monitoring of machines and plants is an important part of a comprehensive maintenance strategy. This also includes the precise alignment of machine shafts, as incorrect alignment causes more than 50 % of all damage to rotating machines.

Misalignments

More than 50 % of all pump damage is caused by misalignment. The failure rate can be significantly reduced with the use of laser measuring systems.



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Misalignment means:

- ▶ Premature wear of bearings, seals, shafts, and couplings
- ▶ High temperatures at bearing and coupling
- ▶ Excessive vibrations
- ▶ Loose foundation screws
- ▶ Breaking (or tearing) of shafts on the inside
- ▶ Increased power consumption

If a new machine has been correctly aligned at commissioning, and regularly checked thereafter, a significant amount of operating and maintenance costs can be saved.

Laser shaft alignment with online functionality

Different shaft alignment methods are available. Shaft alignment using a straight-edge, a feeler gauge, or a dial gauge can still be found.

One of the disadvantages of these methods is that they cannot be integrated into a Smart Factory with self-controlling production processes as they do not offer connectivity. However, integration of maintenance tools into technologies of the Smart Factory are already possible: The laser-optical method is used worldwide and across many industry sectors as standard process for shaft alignment.

Mobile devices, such as tablet PCs or smartphones, can communicate with the sensor system. Thus, measurement reports can be sent immediately via e.g. e-mail.

Laser shaft alignment offers many outstanding advantages, including:

- ▶ Graphical display of the alignment results
- ▶ No coupling disassembly required during measurement
- ▶ Accurate and repeatable results paired with high usability
- ▶ Results can be electronically stored and printed
- ▶ Display of vertical and horizontal corrections in real time during machine adjustment (Live Move mode)

ROTALIGN® touch – the first Cloud-based alignment system for Smart Factories

Connectivity and usability paired with high precision: ROTALIGN® touch, the latest member of the PRUFTECHNIK product family meets all the requirements for a modern and innovative alignment system.

Mobile connectivity at its best

As the only cloud-based laser shaft alignment system with touchscreen, the ROTALIGN® touch can be fully utilized in the area of connectivity. Using the new ALIGNMENT RELIABILITY CENTER 4.0 software, alignment work orders e.g. to service teams can be sent in real time via the Cloud to mobile ROTALIGN® touch devices worldwide.

In return, the Wi-Fi- and Bluetooth-enabled devices can send measurement results back from any location directly via the Cloud and without PC connection.

In combination with the integrated RFID scanner, the plant-specific tasks enable a fully automated and error-free machine identification.

After the corrections, the alignment condition as left can be conveniently stored in the RFID tag of the machine. Using the in-built camera, the user can add photos to the measurement report for a more visual documentation.



The ROTALIGN® touch package

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ROTALIGN® touch – Alignment as a dynamic condition monitoring parameter

With the ROTALIGN® touch, alignment is not a static snapshot anymore. It becomes a dynamic machine condition monitoring parameter. ROTALIGN® touch is the only alignment system that can track the alignment condition over time in order to detect machine problems early on.

Easy user interface enables alignment in one-key flow

Alignment has never been easier: The newly developed user interface with 3D animations enables a fully intuitive and visual work sequence. Using the wizard-like user guidance, users may perform standard and more sophisticated alignment jobs by only pressing one button. Navigating back and forth between the screens is possible at any time.



Real-time communication between ALIGNMENT RELIABILITY CENTER 4.0 and ROTALIGN® touch via the Cloud

Step-by-step alignment

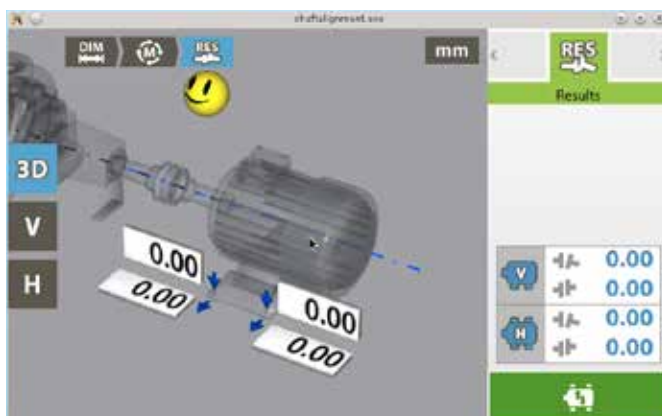
Step 1: Enter dimensions



Step 2: Measure



Step 3: View results



Step 4: Perfect alignment

Easy navigation between the screens
via navigation keys

ROTALIGN® touch – More highlights

- ▶ Voice recognition – ROTALIGN® touch can recognize and process voice commands making both your hands free for the alignment task
- ▶ sensALIGN® – The unique, intelligent sensor technology offers the unmatched precision and accuracy you've come to expect from PRUFTECHNIK
- ▶ Display screen made of strengthened glass and robust housing – ROTALIGN® touch withstands even the most intensive industrial use
- ▶ Results table for quick check of measurement repeatability without navigating away from the current measurement.
- ▶ First capacitive touchscreen-embedded system on the shaft alignment market that can also be operated with gloves.

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About PRUFTECHNIK

With groundbreaking technological developments in the field of laser and vibration measurement technology for condition monitoring and availability optimization of machines and plants, the PRUFTECHNIK Group, with its companies and partners in more than 70 countries, continues to set new standards.

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