PRÜFTECHNIK

OPTALIGN® smart RS5

The power of precision shaft alignment

Always one step ahead

with precision shaft alignment

RS5 technology
5-axis XL HD PSD
Precision built-in inclinometer
Ambient light compensation
2-axis straightness application
Faster data transmission
Laser and sensor battery status warning
Longer laser and sensor runtime
Bluetooth® communication

Benefits of laser shaft alignment

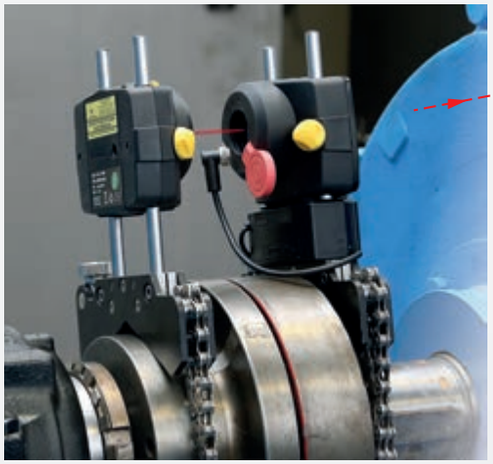
- Reduced energy consumption
- Reduction in bearing, seal, shaft and coupling failure
- Reduced bearing and coupling temperatures
- Reduced vibration
- No cracking or breaking of shafts
- Secure foundation bolts

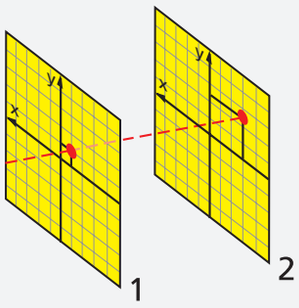
Faster and smarter shaft alignment

with OPTALIGN® smart RS5 technology

The measurement principle

OPTALIGN® smart RS5 uses a single laser and a 5-axis sensor. The sensor contains two fully-linearized biaxial position detectors and a precision inclinometer. It can precisely measure relative shaft movement in five degrees of freedom. This measurement principle is the only one which allows 'Live Move' with concurrent monitoring of the vertical and horizontal machine corrections and with the sensor at any angular position.





With two position-sensitive detectors and an electronic inclinometer the sensor measures the exact position of the laser beam as the shafts are rotated.

The SWEEP measurement mode

With this exclusive and patented measurement mode, data is automatically and continuously collected as the shafts are rotated. During shaft rotation, a large number of measurement points are captured to accurately determine the alignment condition. Measurement can start at any position and in any direction.

Concurrent Live Move

Monitor the machine corrections concurrently in both horizontal and vertical directions with laser and sensor mounted at any angular position on the shaft.

OPTALIGN® smart RS5 is packed with powerful functions for the alignment of horizontal, vertical and flange-mounted machines. The system has been designed for industrial applications and can be used in extreme maintenance working conditions.

3 keys to precision alignment

The main function keys allow a quick switch between the main functions during the alignment.

Machine shaft alignment with a twist

Only three steps to the perfect alignment

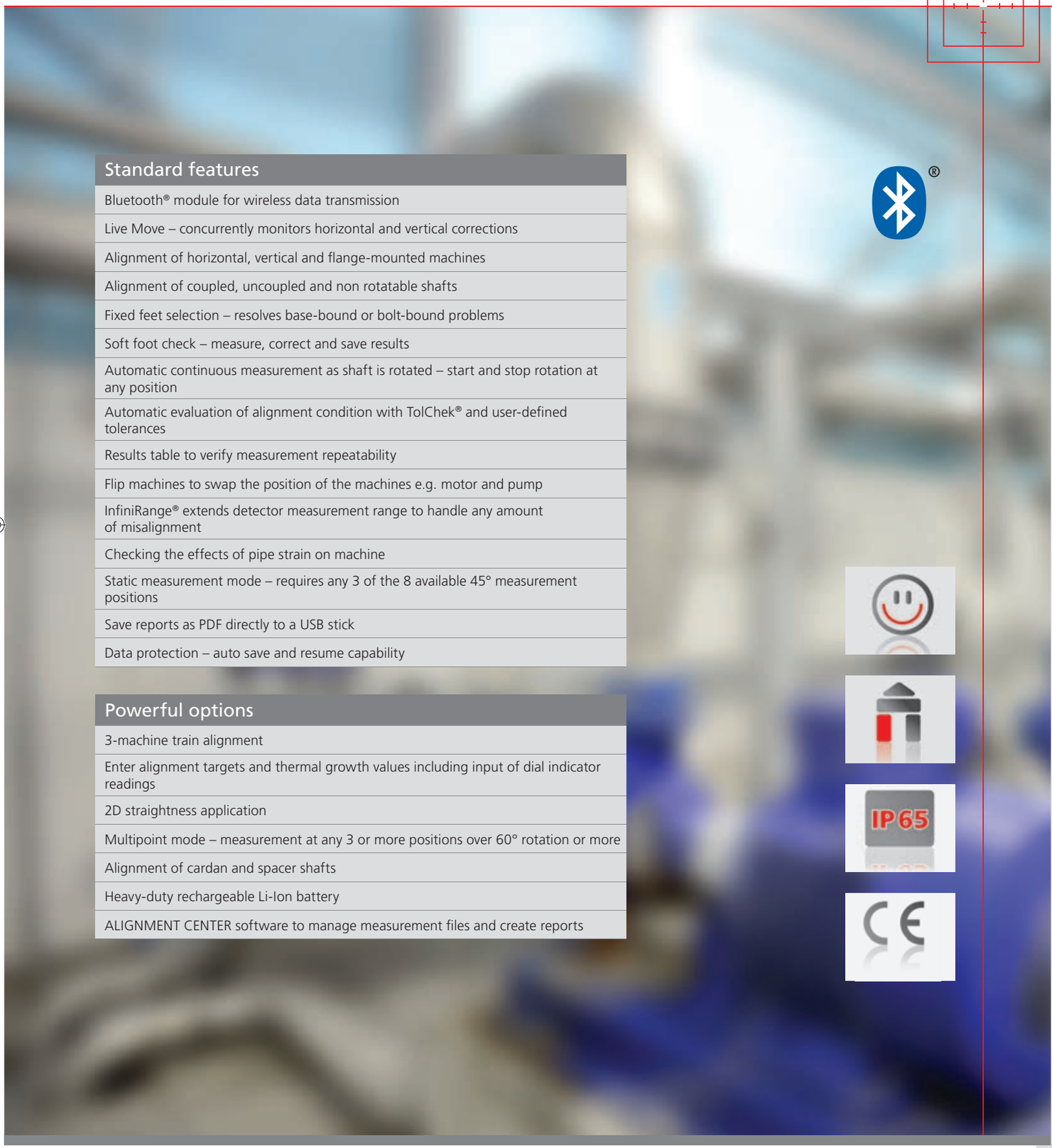
Laser / Sensor
The OPTALIGN® smart RS5 measurement principle is based on the patented single laser beam technology which uses one laser and a sensor including two biaxial position detectors and an electronic inclinometer.

Computer
The OPTALIGN® smart RS5 computer features a high resolution TFT colour display for clear information readability even in unfavourable light conditions. The computer is operated by disposable or Li-Ion rechargeable batteries. The USB interface enables easy connection to a PC and other peripheral devices such as a printer.

Operation and user interface
The alphanumeric keyboard and the navigations keys ensure comfortable operation of the measurement system. With the context menu the user can easily access all required options. The status line text provides valuable guidance for beginners. The alignment results are clearly displayed in graphic and digital formats.

- **Bluetooth® communication**
  Convenient and flexible wireless data transmission.
- **SWEEP measurement mode**
  Automatic collection of alignment data during shaft rotation.
- **Concurrent Live Move**
  Monitor the machine corrections in both horizontal and vertical directions with laser and sensor at any angular position on the shaft.
- **Single laser technology**
  Patented single laser/sensor technology for easy set-up.
- **InfiniRange®**
  This function extends the detector surface, making it possible to measure machines with severe angular misalignment or distant from each other.
  Rough alignment is not necessary, and the initial alignment condition is recorded and documented.
- **Intuitive user guidance**
  The system guides the user step-by-step to determine the machinery alignment condition and its tolerance evaluation.
- **Flip machines**
  Swap the position of the machines e.g. motor and pump, together with machine dimensions.
- **Automatic evaluation of alignment**
  The Smiley and LED provide visual indication of the alignment condition and a live status update during machine correction.
- **Soft foot check**
  Measure, correct and save results.
- **File management**
  Save measurement files in the device or transfer reports as PDF to a USB memory stick.
- **Data protection**
  Auto save and resume capability.

OPTALIGN® smart RS5 powerful features



Standard features
Bluetooth® module for wireless data transmission
Live Move – concurrently monitors horizontal and vertical corrections
Alignment of horizontal, vertical and flange-mounted machines
Alignment of coupled, uncoupled and non rotatable shafts
Fixed feet selection – resolves base-bound or bolt-bound problems
Soft foot check – measure, correct and save results
Automatic continuous measurement as shaft is rotated – start and stop rotation at any position
Automatic evaluation of alignment condition with TolChek® and user-defined tolerances
Results table to verify measurement repeatability
Flip machines to swap the position of the machines e.g. motor and pump
InfiniRange® extends detector measurement range to handle any amount of misalignment
Checking the effects of pipe strain on machine
Static measurement mode – requires any 3 of the 8 available 45° measurement positions
Save reports as PDF directly to a USB stick
Data protection – auto save and resume capability

Powerful options
3-machine train alignment
Enter alignment targets and thermal growth values including input of dial indicator readings
2D straightness application
Multipoint mode – measurement at any 3 or more positions over 60° rotation or more
Alignment of cardan and spacer shafts
Heavy-duty rechargeable Li-Ion battery
ALIGNMENT CENTER software to manage measurement files and create reports

OPTALIGN® smart RS5 technical data

Computer	
CPU	Intel XScale PXA270 running at 520 MHz
Memory	64 MB RAM, 64 MB Flash
Display	Type: TFT, transflective (sunlight-readable), 65 535 colours, backlit LED
	Resolution: 320 x 240 Pixel; Dimensions: 3.5 inch diagonal
	Keyboard elements: Navigation cursor cross with up, clear and menu keys; Alphanumeric keyboard with dimensions, measure and results hard keys
LED indicators	4 LEDs for laser status and alignment condition
	2 LEDs for wireless communication and battery status
Power supply	Operating time: 18 hours typical use (based upon an operating cycle of 25% measurement, 25% computation and 50% 'sleep' mode)
	Disposable batteries: 5 x 1.5 V IEC LR6 ("AA") with typical operating time of 10 hours (based upon an operating cycle of of 25% measurement, 25% computation and 50% 'sleep' mode)
	Lithium-Ion rechargeable battery (optional): 7.2 V / 2.4 Ah with typical operating time of 18 hours (based upon an operating cycle of of 25% measurement, 25% computation and 50% 'sleep' mode)
External interface	USB host
	USB slave
	RS232 (serial) for transducer
	Integrated wireless communication, class 1, transmitting power 100 mW
	AC adapter/charger socket
Environmental protection	IP 65 (dustproof and water spray resistant), shockproof. Relative humidity 10% to 90%
Temperature range	Operation: -10°C to 50°C [14°F to 122°F]
	Storage: -20°C to 60°C [-4°F to 140°F]
Dimensions	Approx. 214 x 116 x 64 mm [8 7/16" x 4 7/16" x 2 1/2"]
Weight	865 g [1.9 lb]
CE conformity	EC guidelines for electric devices (2004/108 EWG) are fulfilled

Sensor	
5-axis sensor	2 planes (4 displacement axes and angle)
Environmental protection	IP 65 (dustproof and water spray resistant), shockproof. Relative humidity 10% to 90%
Ambient light protection	Yes
Storage temperature	-20°C to 80°C [-4°F to 176°F]
Operating temperature	-10°C to 60° [14°F to 140°F]
Dimensions	Approx. 105 x 74 x 53 mm [4 9/64" x 2 29/32" x 2 3/32"]
Weight	Approx. 220 g [7 3/4 oz.]
Measurement area	Unlimited, dynamically extendible (U.S. Patent 6,040,903)
Resolution	1 µm (0.04 mil) and angular 10 µRad
Accuracy	> 98%
Inclinometer resolution	0.1°
Inclinometer error	0.3% full scale

Laser	
Type	Semiconductor laser diode
Beam divergence	0.3 mrad
Environmental protection	IP 65 (dustproof and water spray resistant), shockproof Relative humidity 10% to 90%
Beam power	< 1 mW
Wavelength	670 nm (typical) (red, visible)
Safety class	Class 2, IEC/EN 60825-1:2007
Safety precautions	Do not look into laser beam
Power supply	Batteries 2 x 1.5V IEC LR6 ("AA")
Operating time	180 hours
Storage temperature	-20°C to 80°C [-4°F to 176°F]
Operating temperature	-10°C to 50°C [14°F to 122°F]
Dimensions	approx. 105 x 74 x 47 mm [4 9/64" x 2 29/32" x 1 27/32"]
Weight	approx. 227 g (8 oz.] including batteries

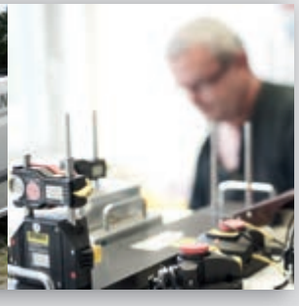
Bluetooth® module	
Class 1 connectivity, transmitting power	100 mW
Transmission distance	Up to 30 m [98 ft.] direct line of sight
Complies with	FCC rules part 15
LED indicators	1 LED for wireless communication, 3 LEDs for battery status
Power supply	Batteries 2 x 1.5 V IEC LR6 ("AA")
Operating time	17 hours typical use (based upon an operating cycle of 50% measurement, 50% standby)
Operating temperature	-10°C to 50°C [14°F to 122°F]
Environmental protection	IP 65 (dustproof and water spray resistant), shockproof
Dimensions	Approx. 81 x 41 x 34 mm [3 1/8" x 1 11/16" x 1 5/16"]
Weight	Approx. 133 g [4.7 oz.] including batteries and cable

Carrying case	
Standard	ABS, drop tested 2 m [6 1/2 ft])
Dimensions	Approx. 470 x 400 x 195 mm [18 1/2" x 15 3/4" x 7 3/4"]

Services and customer support

- Alignment high-tech lab
- Customized product training
- Machinery service – worldwide
- Calibration and repair



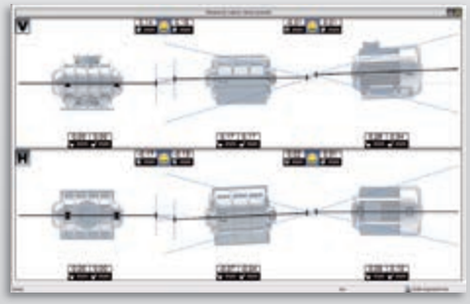



ALIGNMENT CENTER PC software

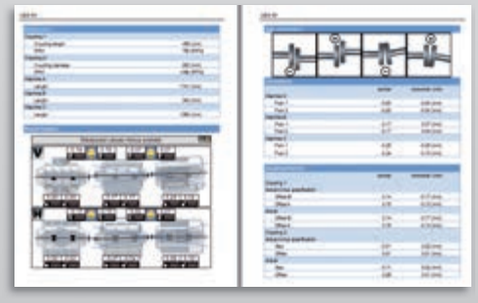
Manage your alignment data the most convenient way

ALIGNMENT CENTER is a Windows® based common PC software platform for all current PRÜFTECHNIK alignment systems and applications.
In a nutshell, you can use ALIGNMENT CENTER to manage your measurement files in a central database. Map your plants and share files across users. Use the two-way communication to transfer files from your PC to the device and back.

ALIGNMENT CENTER



Graphic display of measurement results.



Customized professional reports (example)

Set-up

- Create user-specific templates to suit the measurement job
- Set up file information to include file and user names, company, plant, area and machine train
- Prepare file in advance on a PC and transfer to the instrument via the two-way communication
- Transfer measurement results from the device back to the PC

Analysis and reporting

- 2D or 3D display depending on application
- Customize measurement reports to include company information and logo
- Realistic machine graphics and customized digital images for machines and coupling
- Evaluate results using the measurement table
- Move simulator for machine feet corrections
- Simulate measurement results by entering manual coupling values
- Optimise alignment by redefining fixed feet
- Conversion of dial gauge readings

Archiving

- Create a backup of measurement files
- Restore files saved in the backup
- Organize files in a tree structure with unlimited hierarchy
- Any file type can be stored in the tree structure
- Comprehensive database search
- Ability to import and export data

PRÜFTECHNIK
PROVEN QUALITY
- Made in Germany
- Global Presence
- Qualified Support
- Quality Service

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