



OPTALIGN® PLUS

The new Laser Shaft Alignment Tool

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Alignment precision pays big dividends

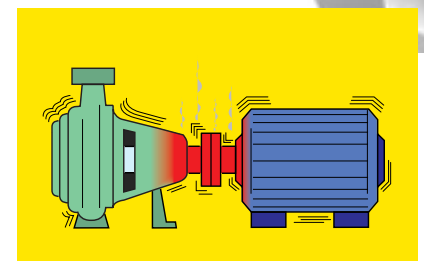
How accurate are dial indicator readings?

In the past, shaft alignment with dial indicators and straightedges was 'standard procedure' - mainly for lack of a better alternative! With so many sources of potential error and loss of accuracy, the success of these mechanical methods often ended up being a combination of long experience, guesswork and plain old-fashioned luck - so that only a few mechanics ever really achieved the 'knack' of shaft alignment. Today's maintenance personnel must be a true jack-of-all-trades to service ever-larger machine parks, yet the higher speeds and tighter design specifications of modern machines demand reliable, highly accurate shaft alignment. OPTALIGN® PLUS rises to the challenge by letting anyone perform precision alignment while saving significant time and effort over conventional methods.

Why precision shaft alignment?

Even small machines can generate big losses when shaft misalignment places reaction forces on shafts, even if the 'flexible' coupling suffers no immediate damage. The result: premature failure of critical seals and bearings. OPTALIGN® PLUS pays for itself in short order by preventing the consequences of poor alignment.

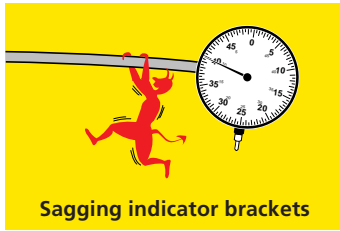
Precise alignment pays back through:



Lower energy losses to friction and vibration.



Raise
savin



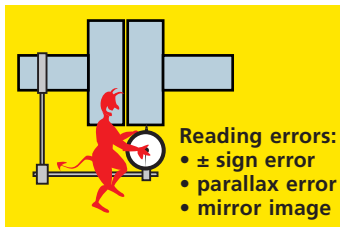
Sagging indicator brackets



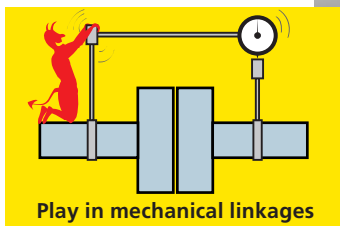
Sticking/jumping dial hands



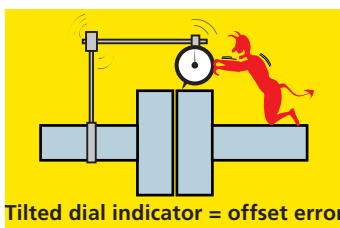
Low resolution=rounding losses



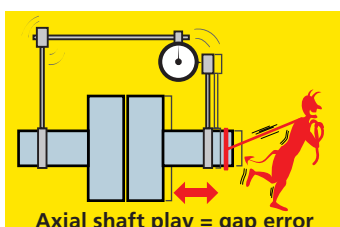
- Reading errors:
- \pm sign error
 - parallax error
 - mirror image



Play in mechanical linkages



Tilted dial indicator = offset error



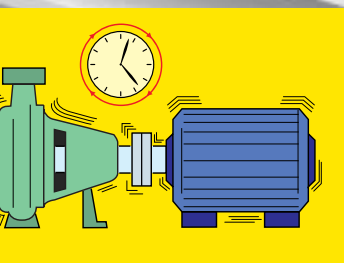
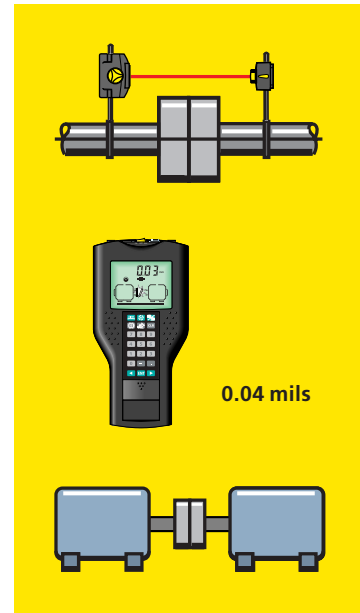
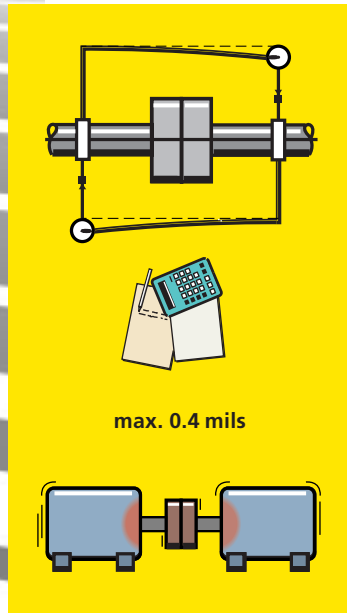
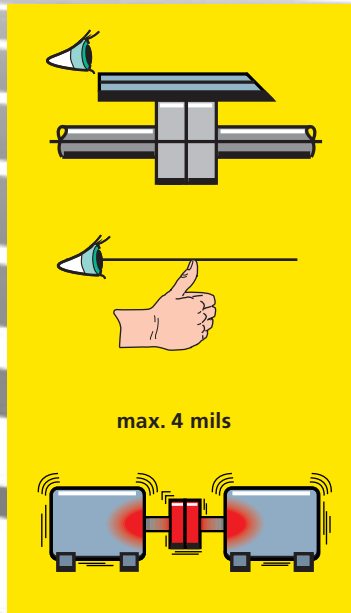
Axial shaft play = gap error

Better alignment with less effort for longer machine life

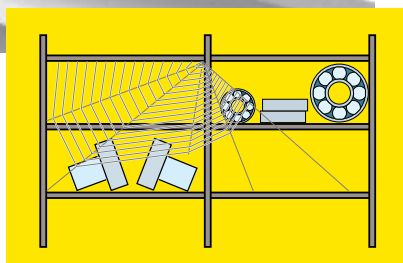
Laser shaft alignment offers 10 to 100 times the accuracy of conventional methods. More importantly, this unmatched precision pays off big in terms of extended machine

life and reduced alignment effort. Let OPTALIGN® PLUS save you the trouble of calculating alignment corrections – and vastly increase the MTBF of rotating equipment!

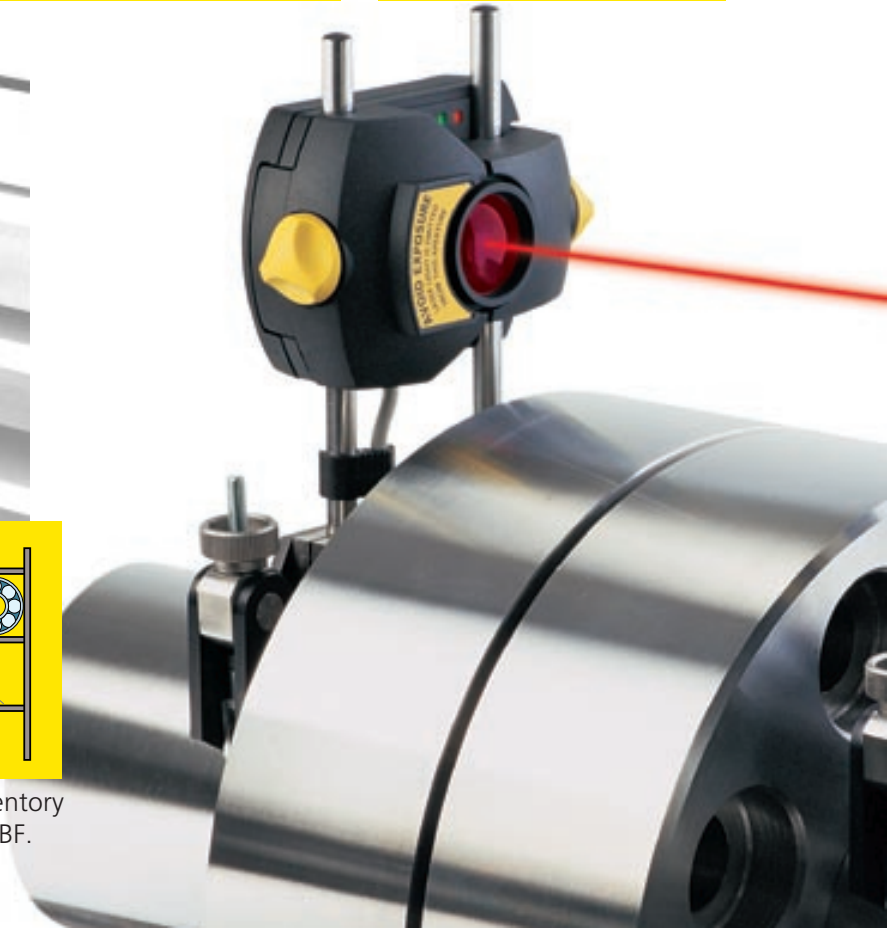
Alignment accuracy is critical to machine longevity



and productivity through time savings and reliable results.



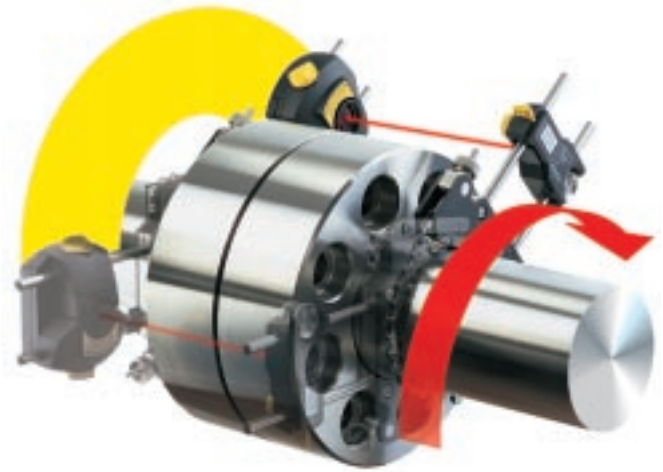
Lower parts expense and inventory levels thanks to extended MTBF.



Measurement flexibility lets you master alignment challenges



OPTALIGN® PLUS frees you from limitations imposed by restricted measurement positions: its patented EZ-Sweep® method lets you measure alignment in seconds simply by turning the shafts from any position to any other position in one continuous sweep. The transducer automatically takes a vast number of readings, even over just a few degrees rotation, ensuring unmatched reliability of alignment results. Perfect for handling blocked measurement positions and hard-to-turn shafts! And the unique InfiniRange® feature lets you measure any amount of misalignment over any distance!

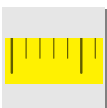


Get a feel for shaft alignment

OPTALIGN® PLUS reflects over ten years' leadership by the inventors of laser-optical shaft alignment. It gives you the expertise of thousands of alignment professionals who have contributed their suggestions and ideas based upon the demands of the real world.



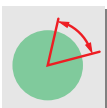
Only one beam to adjust! Patented UniBeam® technology saves setup time & effort!



The industry's smallest optical components fit into tight spaces (total weight: less than 9 oz.)!



Patented InfiniRange® function provides unlimited measurement range to handle any amount of misalignment at any distance!



Forget 3:00 - 12:00 - 9:00! Minimal shaft rotation to determine alignment



Patented EZ-Sweep® measurement eliminates backlash effects!

Alignment expertise at your fingertips





Simple 3-key operation:
 1. Enter dimensions
 2. Rotate shafts
 3. Read results!

Rugged flat keypad resists water/ grease/ shock, with reliable positive-click action (even with gloves!).



Only one cable to connect!
 Eliminates tangling!

Industrial-strength water resistant housings: control unit electr. compartment: IP65, transducer & reflector: IP67.



'Go' or 'no-go'?
 TolChek® 'smiley' shows whether alignment corrections are needed.

Non-volatile memory stores alignment jobs, accepts advance setups from PC.



Automated reporting via direct printer connection.



Intrinsic safety optional

Patented technology gives you the edge

PRÜFTECHNIK AG, the inventors of laser shaft alignment, have over a decade of experience and know-how to provide you with patented innovations such as:

- The UniBeam® single-laser measurement principle: faster and easier handling, since there's only one beam to adjust!
- EZ-Sweep® continuous measurement during shaft rotation: hundreds of points are measured over only a few degrees of shaft rotation for superior accuracy in the alignment results!
- InfiniRange® measurement range extension: lets you handle any amount of misalignment over any separation distance!

No wonder, then, that OPTALIGNment has become the first word in precision shaft alignment.

Now easier than Alignment read

What could be simpler?

1. 'Dimensions': enter a few basic machine distances
2. 'Measure': turn shafts as little as 75° in one continuous sweep
3. 'Results': coupling alignment, tolerance condition, foot corrections

'MOVE': Guides the user interactively through machine positioning for alignment correction.

Soft foot: Checks whether all machine feet rest firmly on the foundation and helps determine corrections.

Practical details enhance productivity



Connectivity PLUS

The RS-232 interface easily transfers machine setups and measurement data to or from a PC for archival, customized reporting and further use on future alignment jobs.

Lasting connections

All OPTALIGN® PLUS connections are made to take in stride the inevitable stress and strain that comes with the territory of shaft alignment. No 'weak links' to disrupt your productivity!



'How-to' at a glance

Practical help at the job site: short instructions pull out of the rear panel to give a step-by-step checklist for basic alignment and a quick reference of special functions. Printed on grease-resistant stock.



Interfaces



Rear view

DESIGN
AWARD
WINNER
1 9 9 7



PLANT
ENGINEERING &
MANAGEMENT™

Award-winning innovation

Immediately upon its market introduction, OPTALIGN® PLUS has already won several prestigious awards for outstanding functionality and industrial design, including 'Best New Product' at the 1997 Plant Engineering and Management Show in Chicago and the coveted seal of approval from Industrie Forum Design Hannover.

...n ever before:
...ings with only three keys!



DIM



2. Measure



3. Results

1. Dimensions

Vertical machines

Measurement at 3 or more rotation positions gives flange offset and shimming values

Printer

Directs output to the printer for producing a measurement report

Function key

For special functions such as 6-feet machine setup, selection of stationary feet and coupling type, mm/in., date and time setting, self-diagnostic tests, etc.

Thermal growth targets

Enter values to compensate for thermal growth specified either at the coupling or at machine feet.

Save/Open file

For storing and recalling up to 99 machine setups and results in a file.

**Added-value functionality:
A sliding cover reveals additional
keys used in special situations**





Quick & rigid mounting:
the perfect bracket
for any alignment situation



The ultimate bracket

Fastest! Easiest! Most versatile! All true of the compact magnetic bracket ALI 2.112set: its powerful magnets fit onto nearly any flat coupling surface for rigid mounting in a matter of seconds. It's the favorite choice of experienced laser alignment users!



It turns when shafts can't

When one or both shafts cannot be rotated for measurement, the sliding magnetic bracket ALI 2.230 comes to the rescue. It glides around the outside of the coupling or shaft end from one measurement position to the next, providing an elegantly simple solution.

A bracket for every need



Compact magnetic brackets mount quickly on faces of large couplings and shafts. (ALI 2.112set, optional)

Compact chain-type brackets (ALI 2.892set, standard equipment)



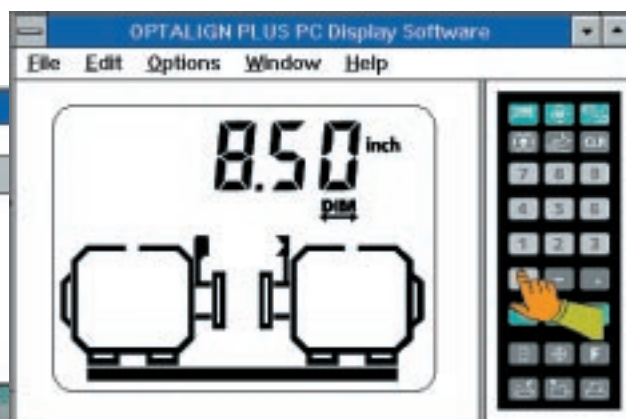
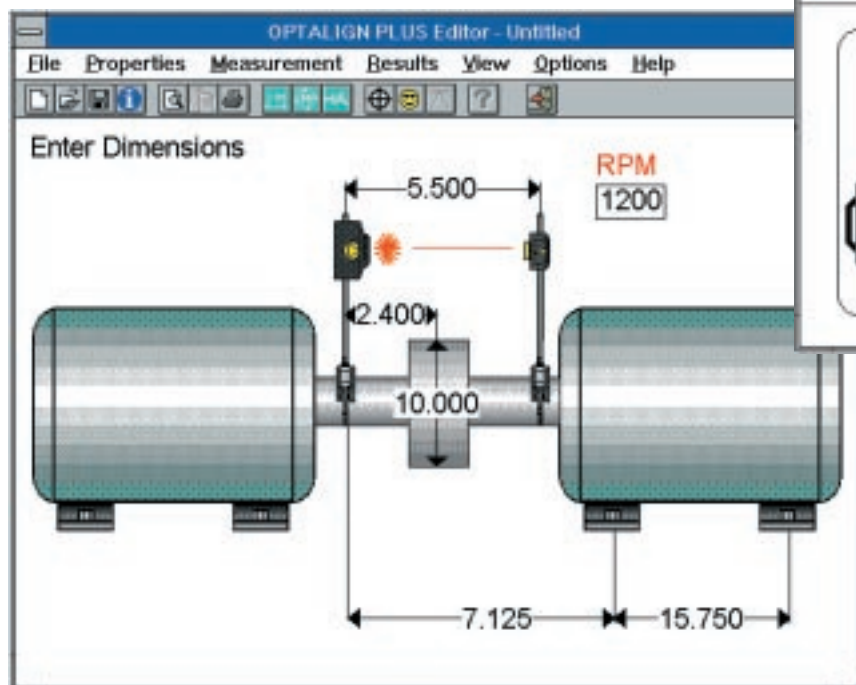
Magnetic sliding brackets (ALI 2.230, optional) provide the ideal solution for non-rotatable shafts.

CALI-CHEK T makes it easy for anyone to perform OPTALIGN® PLUS calibration checking, traceable to national or international norms, in a matter of minutes. An easy-to-use PC program records results and prints out calibration reports.

**Calibration checking
traceable to your
national standards**



PC software for advance job setup, archival, reporting & training



The PC display program lets you view the OPTALIGN® PLUS screen and key stroking 'Live' on your PC. Perfect for training and group presentations! This program, 'On-Screen' color training illustrations and handbook (in electronic format) are part of the OPTALIGN® PLUS training package available on CD ROM (Order number ALI 5.230).









OPTALIGN® PLUS Commander (optional ALI 5.250SET) lets you set up alignment jobs in advance, permanently archive measurement files, and create versatile customized alignment reports for fulfillment of ISO quality standards - all with the convenience of Windows on any standard PC. Perfect for transferring alignment jobs from one OPTALIGN® PLUS unit to another, across a local PC network or across the country!

A good case for durability

The OPTALIGN® PLUS case reflects attention to detail: its contoured foam insert provides optimal protection for transport and storage while maintaining proper order to save you time during setup and disassembly. This lockable, textured case also provides plenty of space for your favorite accessories – and weighs less than 16 lb complete with standard parts!



Make sure you get the most from laser shaft alignment by insisting on the features you need:

-  Get the job done fast... Continuous-sweep measurement for quick, reliable results
-  ...and within tolerance! TolChek automatic tolerances save your precious time
-  Why use more than one laser beam? UniBeam laser system for rapid setup
-  Extreme offsets? No problem! InfiniRange for measurement of any misalignment amount over any distance
-  Bolt-bound? Static feet function lets you easily overcome bolt-bound problems
-  Need results documentation? Complete, full-page alignment reports at the press of a key
-  Don't be left powerless! Extended battery life and reserve battery power
-  ISO 9000 compatibility! Calibration traceable to your national standards

OPTALIGN® PLUS technical data

Transducer

Measurement principle	Coaxial, reflected laser beam
Environmental protection	IP 67 (submersible, dustproof)
Ambient light protection	yes
Temperature storage	-4°F to 176°F
operating	32°F to 131°F
Dimensions	approx. 4 1/4" x 2 3/4" x 2"
Weight:	only about 6½ oz.

Laser

Laser	Ga-Al-As semiconductor laser
Wavelength (typical)	675 nm (red, visible)
Safety class	Class 2; FDA 21CFR 1000 and 1040
Beam power	< 1 mW
Safety precautions	Do not look into laser beam

Detector

Measurement area	unlimited, dynamically extendible (patents pending)
Resolution	1 µm
Accuracy	better than 2.0%

Inclinometer

Measurement range	0° to 360°
Resolution	≤ 1°

Reflector

Type	90° roof prism
Accuracy	better than 1.0%
Environmental protection	IP 67 (submersible, dustproof)
Temperature: storage	-4°F to 176°F
operating	-4°F to 140°F
Dimensions:	approx. 4" x 1 5/8" x 1 3/8"
Weight:	approx. 2½ oz.

Control Unit

Display	fixed-segment LCD display
Display dimensions	approx. 3 3/4" x 2 7/8"
Keyboard	robust, flat, greaseproof keyboard
Environmental protection	Control unit electronics compartment IP 65 (=water spray resistant, dustproof)
Operating temp.	32°F to 131°F
Main power supply	6 x 1.5V IEC LR6 ("AA") batteries (even rechargables)
Backup power supply	1 x 9V IEC 6LR61 battery
Battery life (alkaline)	25 hours on main batteries plus 3 hours on reserve battery - based upon an operating cycle of 25% measurement, 25% computation and 50% 'sleep' mode.
Interfaces	1 sensor; 1 printer/PC (serial)
Dimensions	approx. 5 3/4" x 11 1/2" x 2 3/4"
Weight w/o batteries	approx. 2.4 lb.

Carrying case

Standard	ABS, drop tested (6 1/2ft.)
Case dimensions	approx. 18 1/2" x 15 3/4" x 7 3/4"
Weight, including all standard parts	only about 15.2 lb.!

Options

Intrinsic safety



EEx ib IIC T4, Zone 1
Approx. U.S. equivalent: NEC Article 500-4, Class 1, Division 1, groups D,C,B,A and special safeguards T4.



PRÜFTECHNIK AG products are designed with respect for the environment during their manufacture, use and disposal.



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Proven maintenance technology