Easy-Laser®

Measurement and Alignment Systems

D450

SHAFT ALIGNMENT

Quick, simple and effective.



SIMPLICITY FOR THE USER



Easy-Laser® D450 is a basic system, with the performance and potential for expansion of our more advanced ones, for example D505 and D525. In fact, with the right accessories your D450 system can be converted into any other Easy-Laser® system!

The general idea behind the system is "simplicity for the user". All parts included in the system are developed for rough use and to be easy to mount on the machines. As a user you are given step-by-step instructions on the display through the entire measurement procedure. Even though the technology inside is rather advanced, the measurement principle is straightforward. It is based on the "reverse indicator method" with two laser/measuring units mounted on each side of the coupling.

System D450 includes two measurement programs: Horizontal shaft alignment and Softfoot*. The displayed measurement resolution can be set as low as 0.05 mils/thou [0.001 mm]. When the measurement is complete you can produce a printout, save in the display unit or transfer the data to your PC.

*The display unit can be expanded with other Easy-Laser® measurement programs. Please see last page.

MEASUREMENT PROGRAMS AND FUNCTIONS

HORIZONTAL 9–12–3 - For alignment of horizontal machines by the 9–12–3 method.

SOFTFOOT - With this program you can easily check that the machine is standing evenly on its feet. Shows which foot should be corrected.

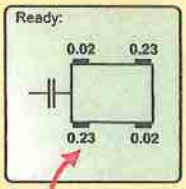
THERMAL GROWTH COMPENSATION - Compensates for difference in thermal growth between the machines. *Sub function.*

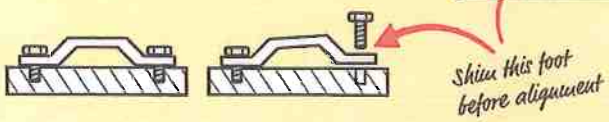
TOLERANCE CHECK - Checks the offset and angle values in relation to selected tolerance. Shows graphically when the alignment is within tolerance. *Sub function.*

MEASUREMENT VALUE FILTER - Advanced electronic filter function for accurate measurement result even in poor measuring conditions like air turbulence and vibration. *Sub function.*

SOFTFOOT PROGRAM

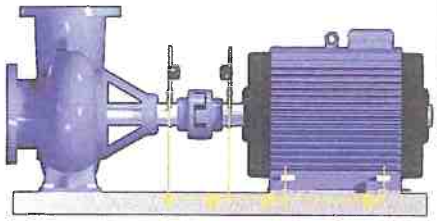
With this program you can easily check that the machine is standing evenly on all feet. This is a necessary condition for reliable alignment. Following the softfoot check, continue directly to the alignment program, with all machine parameters already entered.

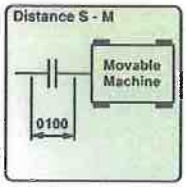




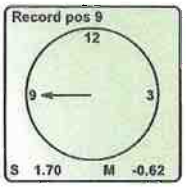
HORIZONTAL PROGRAM

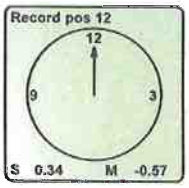
1. Mount the equipment on the machine.

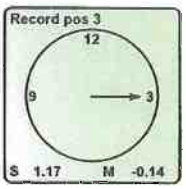




2. Enter the distances between the measuring units and feet.
(If not already entered when performing Softfoot check.)



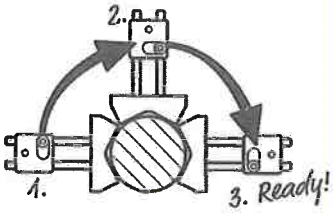




3. Turn shafts with measuring units to position 9, 12 and 3 o'clock.

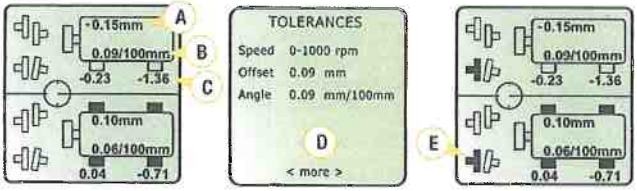
Press the Enter button ⏎ at each position to record the value.

The measurement is ready!



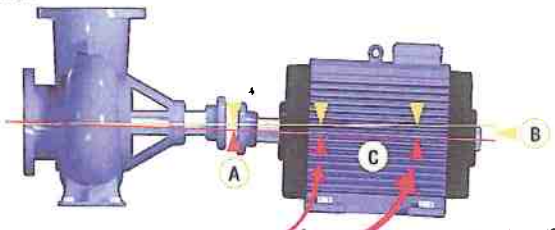
THE RESULT IS CLEARLY DISPLAYED

4. Offset, Angular values and Shim and Adjustment values are clearly displayed. Both horizontal and vertical values are shown "live", which makes it easy to adjust the machine.

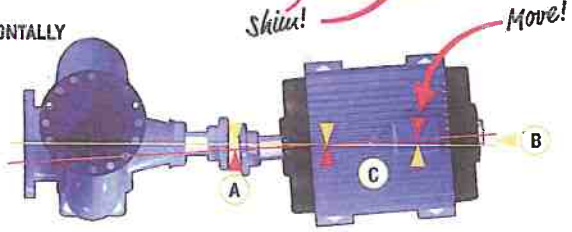


A. Offset value.
B. Angular value.
C. Shim/Adjustment values. Live direction indicated by filled machine feet symbols.
D. Tolerance settings display. Select speed range.
E. Filled coupling symbols, indicating that alignment is within tolerance.

VERTICALLY



HORIZONTALLY



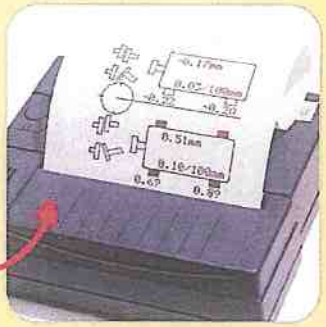
DOCUMENTATION

When measurement is complete, you have several options for documenting the results. Choose the one that is best suited for the situation, depending, for example, on whether further analysis is needed or whether a measurement report needs to be produced. A keyboard with all characters available makes it quick and easy to give each measurement a unique description.

Your description



SAVE IN THE DISPLAY UNIT
You give every measurement an individual name. The system then adds the time and date of the measurement. Up to 1000 shaft alignment measurements can be saved.



Printout with all measurement data

PRINT
Quickly print all measurement data locally. This is useful, for example, if you don't want to connect the display unit to a PC.

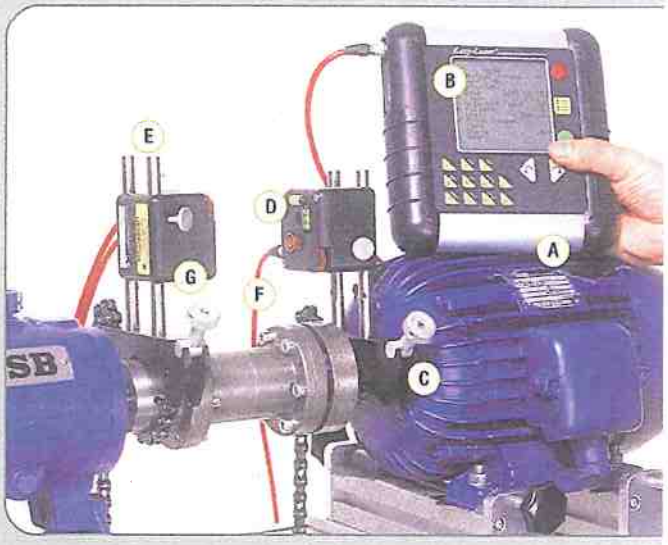


Excel® sheet with graphics

TRANSFER MEASUREMENT DATA TO PC
With the EasyLink™ program for Windows® (included), you can produce professional reports with both measurement data and pictures, export to spreadsheets such as Excel®, etc.

RUGGED DESIGN

The rugged aluminium and stainless steel design guarantees stable measurement values and reliable alignment even in the harshest of environments. Double rods for the measuring units and stable chain shaft fixtures are other features making this a high performance system.



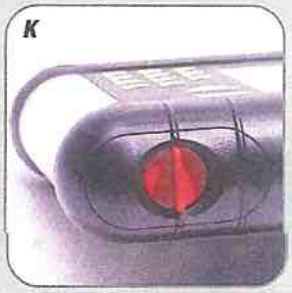
A. Display unit made of anodized aluminium.
B. Clear, backlit LCD display. Easy to read even in poor light conditions.
C. Universal shaft brackets with chains.
D. Clear spirit levels in both units for quick and accurate positioning.
E. Double rods for each unit, made of stainless steel.
F. Cables with Push/Pull connection.
G. Small, lightweight measuring units made of aluminium.
H. All settings are available, as for our more expensive systems.
I. Durable membrane keyboard with all characters.
J. RS 232 port for printer and PC connection.
K. Battery operated display unit. Long operating time.







Countersunk connectors, well protected against external damage.



Battery cover. The unit is powered by four standard R14 (C) batteries.

More than 24 hours continuous operation!

Easy-Laser®
Measurement and Alignment Systems

D450





SYSTEM D450 Part No. 12-0300

1 Display unit D279 (with 2 measurement programs)
1 Protective case
2 Cables with Push/Pull connectors
2 Measuring units (S, M)
2 Sets of rods for measuring units (4x2.36", 8x4.72"(4x60mm, 8x120mm))
2 Shaft brackets with chains
2 Extension chains
1 Measuring tape
1 Manual
1 EasyLink™ Windows® program + PC cable *Data base software included!*
Delivered in robust aluminium framed carrying case with contoured foam insert.

TECHNICAL SPECIFICATIONS

System	
Programs	Horizontal shaft alignment, Softfoot
Measurement distance	Up to 33 feet [10 m]
Temperature range	32–122°F [0–50°C]
Relative humidity	10–95%
Max. displayed error	±1% +1 digit
Weight (complete system)	11 lbs [5 kg]
Carrying case	WxHxD: 16"x12"x4" [420x320x110 mm]
Measuring units (S, M)	
Housing material	Anodized aluminium
Type of laser	Diode laser
Laser wavelength	635–670 nm, visible red light
Laser safety class	Class 2
Laser output power	< 1 mW
Resolution	0.05 mils [0.001 mm] *High resolution!*
Type of detectors	PSD 0.39" sq [10x10mm]
Spirit vials	Resolution 0.5°
Protection	No influence from ambient light
Dimensions	WxHxD: 2.36"x2.36"x1.97" [60x60x50 mm]
Weight	7 oz [198 g]
Display unit	
Type of display	Backlit dot matrix LCD. 2.87"x2.87" [73x73 mm]
Displayed resolution	Changeable; 5, 0.5, 0.05 mils/thou. 0.1, 0.01, 0.001mm.
Battery	4 x 1.5 V R14 (C)
Operating time	24 hours
Storage memory	1000 shaft alignment measurements *Large memory!*
Output port	RS232 for printer and PC communication
Keyboard	Membrane alphanumeric multi function
Settings	Value filtering, Contrast and Unit (mil/thou/mm) etc.
Housing material	Anodized aluminium / ABS-plastics
Dimensions	WxHxD: 7.1"x7.1"x1.8" [180x180x45 mm]
Weight	2.8 lbs [1250 g]
Shaft brackets	
Fixture	V-fixture for chain, width 0.71" [18 mm]
Material	Anodized aluminium
Shaft diameter	Ø 3/4"–18" [20–450 mm] with standard chains.
Rods	
Material	Stainless steel
Length	2.36" and 4.72" [60 and 120 mm]
Cables	
Type	With Push/Pull connectors
Length	78.74" [2 m]

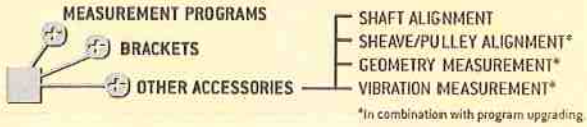
ACCESSORIES

Brackets	
1. Sliding brackets Part No. 12-0039	For non-rotatable shafts. Min. Ø 2.36" [60 mm].
2. Magnetic brackets Part No. 12-0036	For axial mounting on e.g. flange, shaft or coupling.
3. Magnetic base Part No. 12-0013	For direct mounting on e.g. coupling or shaft.
4. Thin chain brackets Part No. 12-0037	Width 0.47" [12 mm]. With chains.
5. Offset bracket Part No. 01-0076	For axial displacement of meas. units on bracket.
Miscellaneous	
6. Printer Part No. 03-0032	Portable thermal printer incl. cable and charger.
7. Extension cable Part No. 12-0108	Length 16 feet [5 m] *(Not pictured)*

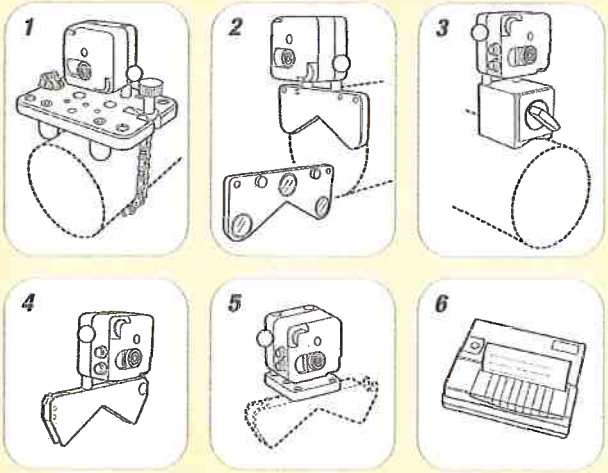
ACCESSORIES AND EXPANDABILITY

A great many different brackets are available to help you solve measurement tasks that would otherwise have been difficult. The aluminium and stainless steel design is as rugged as the rest of the system. With the portable printer connected you can easily document the alignment work wherever you are.

Easy-Laser® D450 can be expanded and upgraded with measuring units and programs from shaft alignment systems D505 and D525. You can also add all other Easy-Laser® measurement equipment when your measurement needs increase. Learn more about this in our other brochures or on the web.



*In combination with program upgrading



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CE

This product complies with:
SS-EN60825-1-1994,
21 CFR 1040.10 and 1040.11

CAUTION
LASER RADIATION
DO NOT STARE INTO BEAM
DIODE LASER
1 mW MAX OUTPUT AT 670 nm
CLASS II LASER PRODUCT

05-0218 Rev1

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Measurement And Alignment Technology

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