

SHAFT ALIGNMENT

D450 SHAFT ALIGNMENT

Easy-Laser® D450 is a basic shaft alignment system, with the performance and potential for expansion of our more advanced ones. It is designed for users who want a simple, reliable and cost-effective measuring system for the alignment of horizontally-installed machines. With programs for *9-12-3 Horizontal Shaft Alignment* and *Softfoot*. Functions for compensation of thermal growth and alignment tolerance check (see program list).

Typical applications: Pumps, motors, gearboxes.



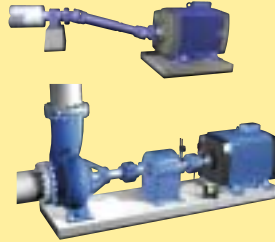
10mm [0.39"] DETECTORS
5 PROGRAMS/FUNCTIONS



D505 SHAFT ALIGNMENT

Easy-Laser® D505 has all the programs and functions you could want for the alignment of rotating machines. The *EasyTurn™* program allows alignment with as little as 40° rotation of the shafts. Functions for compensation of thermal growth, alignment tolerance check and reference foot locking (see program list).

Typical applications: Horizontal, vertical/flange-mounted and cardan-shaft-coupled machines, machine trains (up to ten machines in line).



20mm [3/4"] DETECTORS
13 PROGRAMS/FUNCTIONS

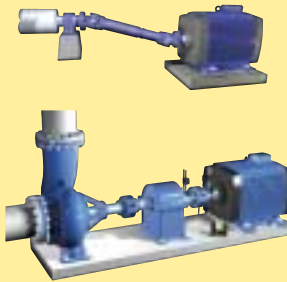


D525 SHAFT ALIGNMENT / GEOMETRY

Easy-Laser® D525 includes all programs and functions for the alignment of rotating machines that are included in system D505, plus all programs for geometrical measurements (see program list). You add only those geometry accessories you need (included in Geo-systems; see next page).

This is the most versatile measuring system if you mainly do shaft alignment, but need to be able to do geometrical measurements now or in the future, and want to be able to connect the BTA Digital.

Typical applications: The same as D505, as well as BTA Digital and Geo systems when suitable measuring accessories from these are used.

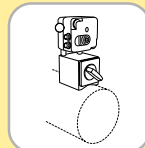


20mm [3/4"] DETECTORS
23 PROGRAMS/FUNCTIONS

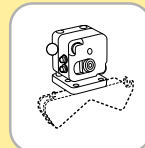


BRACKETS FOR SHAFT ALIGNMENT

A great many different brackets are available to help you solve measurement tasks that would otherwise have been difficult. The aluminum and stainless steel design is as rugged as the rest of the system. Some brackets are accessories. For more information, please see our shaft alignment brochures.



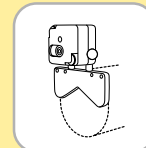
Magnet base



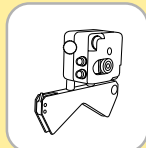
Offset bracket



Sliding bracket



Magnet bracket



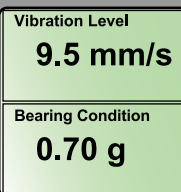
Thin chain bracket

VIBRATION MEASUREMENT

The shaft alignment systems D505 and D525 have become even more universal, with the potential to measure vibration (inch/s, mm/s) and bearing condition (g-value). As before, the systems contain all programs and functions you could want for measuring and aligning different types of rotating machinery. Using a single instrument, you now have the potential to troubleshoot, prevent wear and breakdowns in your machines.



Vibration measurement probe D283 (accessory).



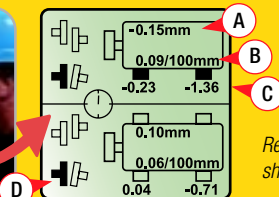
Vibration Level
9.5 mm/s

Bearing Condition
0.70 g

Vibrometer display.

SHAFT ALIGNMENT TO RELY ON

All parts included in the systems are developed for rough use and to be easy to mount on the machines. The rugged aluminum and stainless steel design guarantees stable measurement values and reliable alignment even in the harshest of environments. As a user you are given step-by-step instructions on the display through the entire measurement procedure. Measurement values are displayed live, making it easy to adjust the machine to a correct position. The displayed resolution can be set as low as 0.001 mm [0.05 mils/thou].



Result display for shaft alignment.

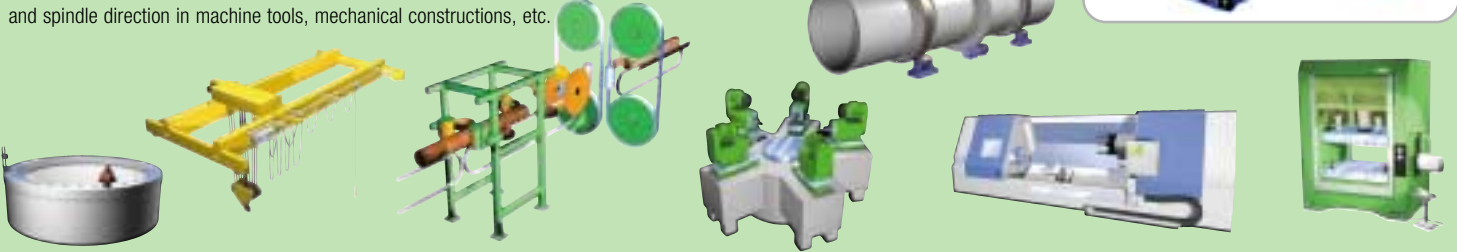
- A. Offset value.
- B. Angular value.
- C. Shim/Adjustment values. Live direction indicated by filled machine feet symbols.
- D. Filled coupling symbols, indicating that alignment is within tolerance.

GEOMETRICAL MEASUREMENT

D600 MACHINE

Versatile system for geometrical measurements. Thoroughly proven reliability and user-friendly design make it easy for you to measure almost anything. Simply add laser transmitters and other accessories to suit your purposes.

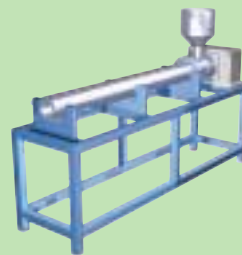
Typical applications: Straightness, flatness, squareness, parallelism and spindle direction in machine tools, mechanical constructions, etc.



D630 EXTRUDER

This system is designed to measure straightness and direction of pointing, primarily on extruder pipes. The well-thought-out design of the system ensures that the measurement procedure is quick and accurate. Diameters down to 20 mm [0.80"] can be measured. Handles up to 150 measurement positions.

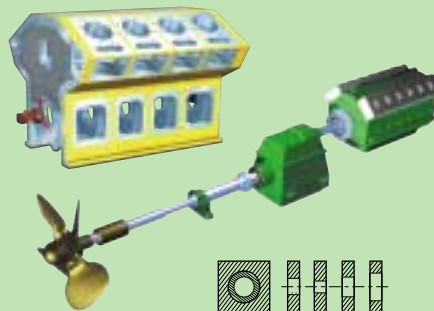
Typical applications: Extruders, hydraulic pipes, etc.



D650 LINEBORE

For straightness measurement of bores and bearing journals, both in production and in the field. Very stable construction for highest measurement accuracy. Measures both open and closed bearing pockets with equal simplicity. Handles up to 150 measurement positions.

Typical applications: Crankshaft and camshaft bearings in diesel engines, bearing journals and hull penetrations in propeller shaft installations, workpiece positioning in machine tools.



D660 TURBINE

For straightness measurement of bearing journals and diaphragms, where there are bearing halves with different diameters, primarily in turbines. Simple setup and measuring procedure. Handles up to 150 measurement positions.

Typical applications: Diaphragms and bearing journals in turbines, compressors, etc.



D670 PARALLELISM

For parallelism measurement of rolls and stands in numerous applications. Up to 150 rolls or other objects can be measured. Any chosen object or the baseline can be used as a reference. You can also use the system to measure level, straightness and flatness.

Typical applications: Parallelism, straightness, flatness and level/plumb of papermaking machines, printing presses, rolling mills, etc.

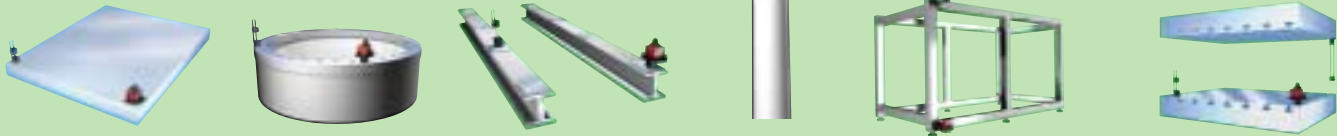


D800 MACHINE

A new revolutionary measuring system which considerably shortens the time taken for measurement and alignment.

Uses SpinLaserTechnology™. This means that the laser beam makes a constant sweep (360°). You place the detector anywhere in the laser sector and record the reading.

Typical applications: Straightness and flatness of machine tables and foundations, flatness of flanges, parallelism between press tables, etc.



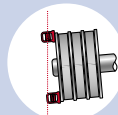
SHEAVE/PULLEY ALIGNMENT

Swedish patent 9803851-6. Patent pending: US 09/437,908; PCT/SE/99/02034

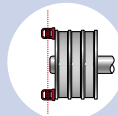
D80 BTA COMPACT™

For simple, quick alignment of belt drives. The tool is fitted in a few seconds, and the laser line projected on the targets clearly shows how you need to adjust the machines. Compact and light. Suitable for most types of drive, such as V-belt, timing belt, flat belt and chain drives. Can also be used on non-magnetic pulleys.

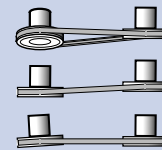
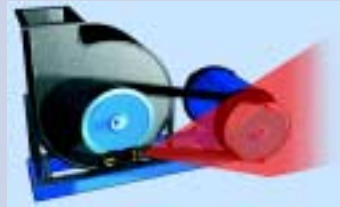
Typical applications: Most belt/chain drives.



Misaligned



Aligned

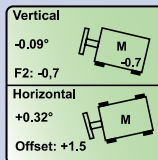


Parallel and angular misalignment
Parallel misalignment
Angular misalignment

BTA DIGITAL

For simple and precise alignment of belt drives. Shows adjustment readings live on the display. Measurement results can be documented on a printer or a PC. Suitable for most types of drive, such as V-belt, timing belt, flat belt and chain drives. BTA Digital is the perfect accessory for alignment system D525.

Typical applications: Most belt/chain drives.



SHIMS

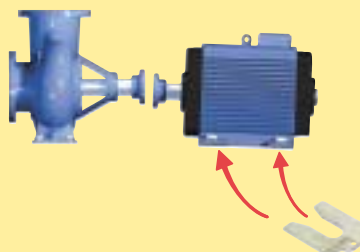
PRE-CUT STAINLESS STEEL SHIMS

Pre-cut shims in all sizes – *Easy to use!*

Shims marked with thickness – *Quick identification!*
























Compact and light shim cases – *Easy to carry!*

High-quality stainless steel – *Reliable!*



MEASURING PROGRAMS AND FUNCTIONS

A B C

- 1  **HORIZONTAL 9-12-3** - For the alignment of horizontal machines by the 9-12-3 method.
- 2  **SOFT FOOT** - With this program you can check that the machine is resting on all its feet. Shows which foot should be corrected (if necessary).
- 3  **THERMAL GROWTH COMPENSATION** - Compensates for difference in thermal growth between machines. *Sub-function.*
- 4  **TOLERANCE CHECK** - Checks the offset and angle values in relation to selected tolerance. Shows graphically when the alignment is within tolerance. *Sub-function.*
- 5  **MEASUREMENT VALUE FILTER** - Advanced electronic filter for accurate results even in poor measuring conditions such as air turbulence and high vibration. *Sub-function.*
- 6  **EASY-TURN™** - For the alignment of horizontal machines. Allows complete measurement with only 40° rotation of the shafts.
- 7  **CARDAN** - Shows angular errors and adjustment value on cardan-shaft-coupled/centre-offset machines. (Requires accessory fixtures.)
- 8  **VERTICAL** - For measurement of vertical and flange-mounted machines.
- 9  **MACHINE TRAIN** - For the alignment of two to ten machines in a row (nine couplings). The entire alignment can be followed live on the screen.
- 10  **REFLOCK™** - Any pair of feet can be locked/set as a reference. *Sub-function.*
- 11  **OFFSET AND ANGLE** - Shows centre offset and angular error between two shafts, for example. Also suitable for dynamic measurements.
- 12  **VALUES** - Shows live readings from S- and M-unit. Can be used for shaft alignment, straightness measurement and dynamic measurement. Up to four detectors can be connected in series and be zeroed individually.
- 13  **VIBROMETER** - Shows vibration level in "mm/s" or "inch/s", and bearing condition value in "g". The measurement complies with vibration standard ISO10816-3. (Requires accessory Vibrometer probe D283.)
- 14  **STRAIGHTNESS** - For straightness measurement of (for example) machine foundations, shafts, bearing journals, machine tools, etc. Can handle up to 150 measuring points with two zero points.
- 15  **FLATNESS** - Program to measure flatness/twist of (for example) machine foundations, machine tables, etc. Can handle up to 300 measuring points with three zero points.
- 16  **SQUARENESS** - For measurement of squareness in machines and installations.
- 17  **PARALLELISM** - For measurement of parallelism between rolls, machine ends, etc. Can handle up to 150 rolls/measurement objects. The base line or any roll may be used as a reference. Every object can be individually named.
- 18  **SPINDLE DIRECTION** - For measuring the direction in which machine spindles in machine tools, drilling machines, etc., point.
- 19  **CENTER OF CIRCLE** - Used for straightness measurement of bearing journals when the bore diameter varies. For example diesel engines, propeller shaft installations, etc.
- 20  **HALF-CIRCLE** - Readings are taken at three positions, for example 9, 6 and 3. Allows varying bore diameters. To be used together with the Turbine system.
- 21  **PLUMB LINE** - With this program you can measure plumb (vertical) and straightness of turbine and generator shafts, for example.
- 22  **FLANGE** - For flatness measurement of flanges and circular planes, slewing ring bearings for example. Can handle up to 150 measuring points. Three zero points at 120° pitch are computed by the system.
- 23  **BTA DIGITAL** - For alignment of belt and chain drives. (Requires accessories BTA Digital transmitter and detector unit.)

PROGRAM CONFIGURATIONS

The Easy-Laser® systems come in three different measurement program configurations:

A: D450

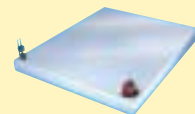
B: D505

C: D525, D600, D630, D650, D660, D670, D800

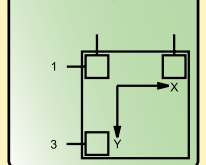
PERFORM AT YOUR BEST

The key to fast, simple measurement is a measuring program that helps you to perform at your best. That's why the Easy-Laser® systems have a large number of specially adapted programs that guide you step-by-step through the measurement procedure. In other words, you leave most of the thinking and all the difficult calculations to the measurement system.

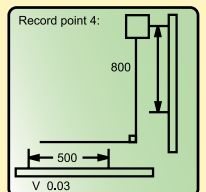
15. FLATNESS



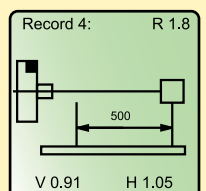
Number of Y-points:



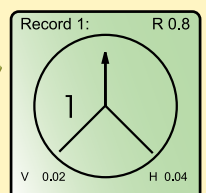
16. SQUARENESS



18. SPINDLE



19. CENTER OF CIRCLE



EASY-LASER® – MAIN FEATURES



DISPLAY UNIT D279 – WHERE IT ALL STARTS

All Easy-Laser® systems, from basic to advanced, use the D279 Display unit. It is powered by four R14 (C) batteries, giving it a long operating time. The displayed measurement resolution is 0.001 mm [0.05 mils/thou]. 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.



Your description

SAVE IN THE DISPLAY UNIT

A keyboard with all characters available makes it quick and easy to give each measurement a unique description. The system then adds the time and date of the measurement. The storage memory is very large. Up to 1000 shaft alignment measurements or 7000 points for geometry measurement can be saved.



PRINT

Quickly print all measurement data locally with the battery operated thermal printer. This is useful, for example, if you don't want to connect to a PC.



Printout with all measurement data

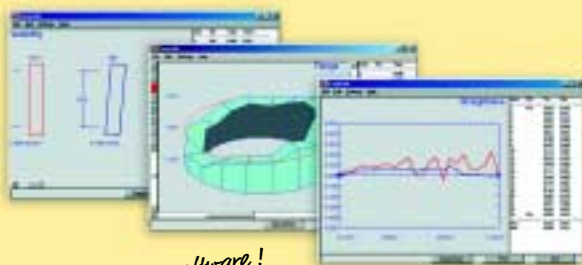


TRANSFER MEASUREMENT DATA TO PC

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.



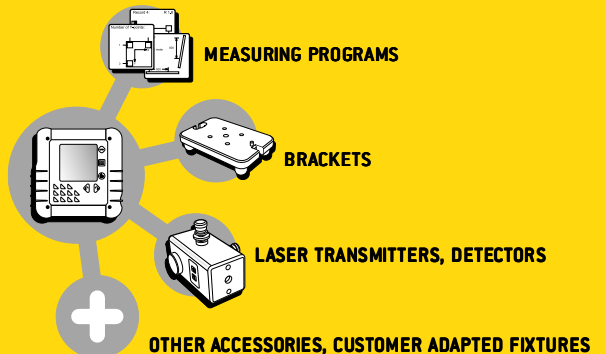
Excel® sheet with graphics



Free Database software!

EXPANDABILITY

The software in the Display unit can be expanded with measurement programs from other Easy-Laser® systems. You can also add all other Easy-Laser® measurement equipment when your measurement needs increase. This means that you can always put together a measurement system that meets your particular needs. As an example, all our geometry systems can be upgraded with equipment for shaft alignment. You can also add the turbine equipment to the line bore system, or the Spinlaser transmitters (including BTA Digital) to alignment system D525, to mention only two examples. Learn more about this in our other brochures or on the web.



ALWAYS IN THE PACKAGE

All systems are delivered in a robust lockable aluminium framed carrying case* with contoured foam insert. Also always included are: Manual, Measuring tape, Protective case for display unit, EasyLink™ Windows® program, PC cable.



*Size and design depending on system.

Easy-Laser® is manufactured by Damalini AB, Åbäcksgatan 6B, 431 67 Mölndal, Sweden, Phone +46 31 18 87 70, Fax +46 31 18 87 75, email: info@damalini.se, www.damalini.com © 2003 Damalini AB. We reserve the right to make modifications without prior notification. Easy-Laser® is a registered trademark of Damalini AB. Windows® and Excel® are registered trademarks of the Microsoft Corporation.



These products comply with:
SS-EN60825-1-1994,
21 CFR 1040.10 and 1040.11



Authorized dealer