

# Microgage PRO PLUS

Laser Measurement & Alignment System



**Pinpoint**  
Laser Systems



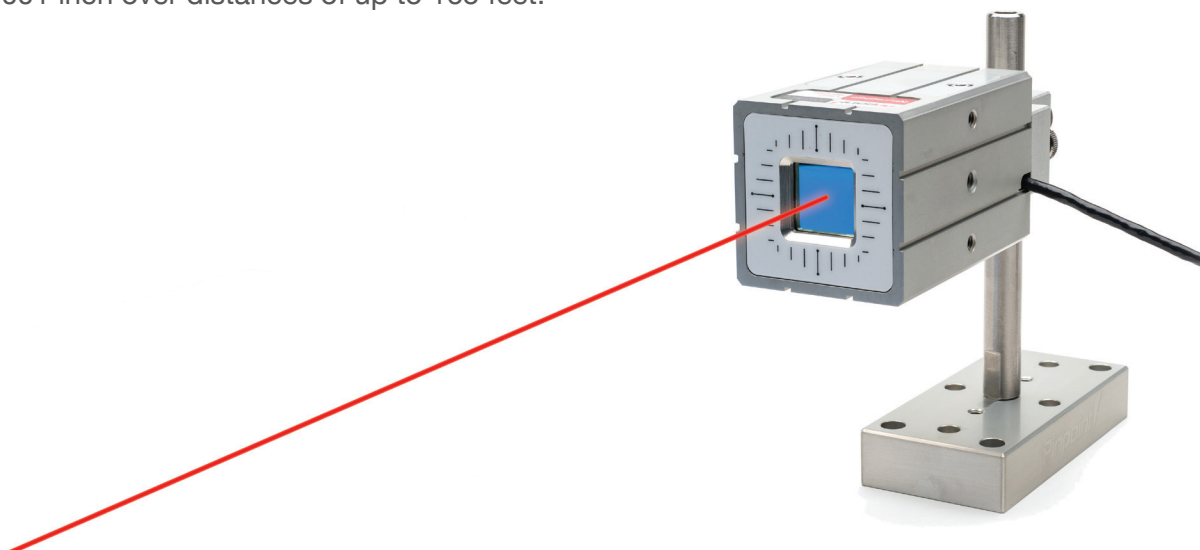
## The Microgage PRO PLUS is your ideal industrial alignment solution.

Are you a production engineer? In charge of machine repair? Is precise alignment absolutely critical to the proper functioning of your manufacturing equipment and final product? Would you like a measurement and alignment solution that is easy to set up, easy to use and extremely versatile?

Then your solution is the Microgage PRO PLUS.



Microgage PRO PLUS works on a very simple principle: Laser light travels in a straight line. If you attach a laser transmitter to one assembly and a laser receiver to another, then the alignment of the two assemblies will equal the X/Y displacement of the laser beam at the receiver. And Microgage PRO PLUS measures all this with a precision of 0.0001 inch over distances of up to 165 feet.





The Microgage PRO PLUS includes a durable, adaptable and versatile laser transmitter and receiver, which can be easily attached anywhere. The smart display presents measurements, performs analysis, and is highly portable. This display will also store measurements, upload them to a PC, and perform applications (like statistical smoothing) that help speed up work flow. For ease of use, the components can communicate with each other wirelessly.



## Benefits

- Adaptable for any alignment need
- Highly affordable
- Reduces machinery down time
- Supports preventative maintenance
- Less need for outside contractors
- Easy to use and learn
- Fast set-up to save time
- Improves manufacturing quality
- Cuts machinery installation time
- Increases profits / reduce alignment cost



## Features

- Precise to 0.0001 inch (2.5 micron)
- Working range up to 165 feet (50 meters)
- Easy to set-up and use
- Digital receivers deliver peak accuracy
- Versatile for many projects
- Provides real time alignment information
- Wireless option for convenience and range
- Accommodates 12 receivers for multiple reading points
- Smart display with bright, easy-to-read color graphics
- Touchscreen and keypad with multifunction buttons
- Battery operated (long life rechargeable)
- Expandable with many mounts, fixtures, and accessories.
- On-screen step-by-step alignment instructions
- Stores thousands of readings and user notes
- Connects easily to laptop for data uploads and analysis
- Easy grip handle for comfort and portability
- Rugged design for years of industrial floor use
- Durable carrying case with storage pockets included
- Highly compact and portable
- Easy-to-add software updates and user-specific applications

# Multiple Alignment Tools in

## Linear Alignment

(straightness)

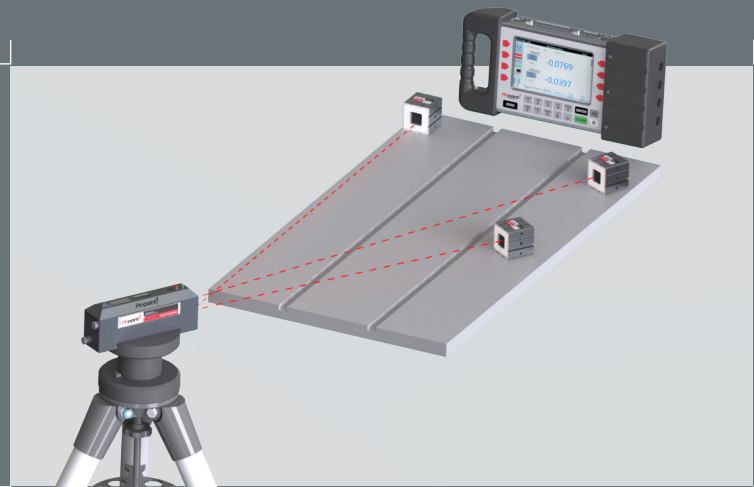
Measures any deviation from a linear path. Examples: aligning long machine beds, rails, tracks, slides and shaft runs.



## Planar Alignment

(flatness)

Measures any unevenness of a surface. Examples: machine beds, web systems, roller systems, gantry travel, surface profiling and leveling machinery.



## Perpendicular Alignment

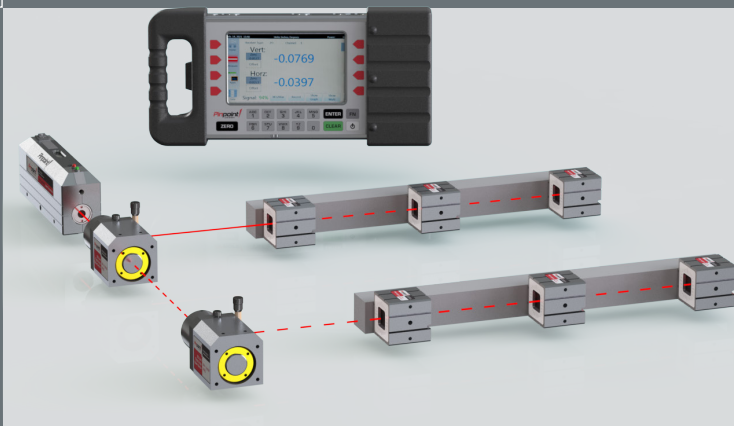
(squareness)

Measures any deviation off a square line or axis. Examples: checking Z-axis travel, squaring guides and actuators, aligning linear stages, inspecting milling and cutting systems.



**The 90-Line Beam Bender** is an accessory that redirects the laser beam at a precise right angle, enabling the digital receiver to provide measurements of *squareness* and *parallelism*.





## Parallel Alignment

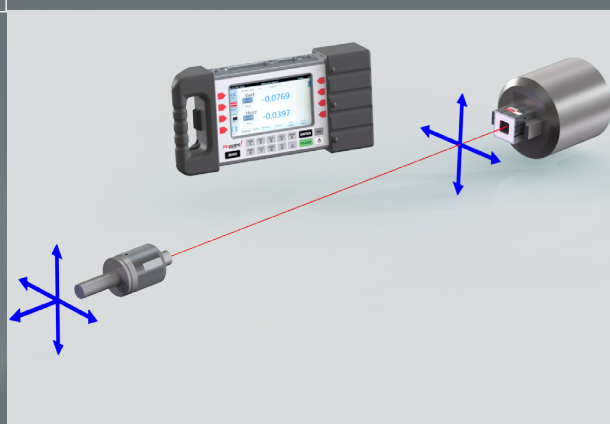
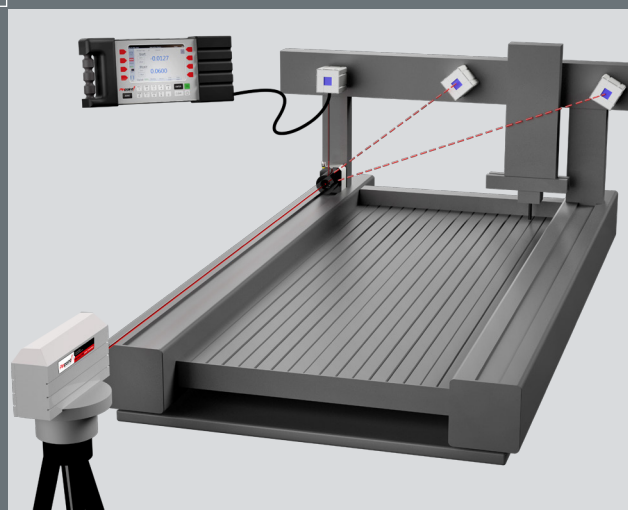
(parallelism)

Measures the degree to which two linear paths maintain the same distance from each other along their entire lengths. Examples: aligning tracks and rails, positioning moving slides to other assemblies, checking parallel edges, aligning rollers and web handling systems.

## Perpendicular Planes

(square plane)

Measures the squareness or perpendicularity of a plane relative to a reference line or axis. Examples: aligning gantry cross bridges, checking overhead rollers and idlers, and adjusting CNC machine tools.



## Centerline Alignment

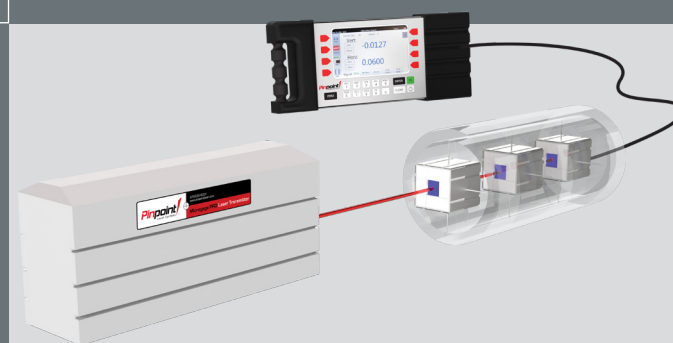
(concentricity)

Measures any offset or angular deviation off a centerline or rotating axis. Examples: aligning spindles, checking lathes and CNC turning centers, adjusting extruder barrels, gearbox and drive shaft alignment.

## Bore Alignment

(axial alignment)

Measures the offset and angular position of a bore or collection of cylinders to a common centerline. Examples: aligning crankshaft journals, propeller shaft and stern tube alignment, adjusting extruder rams and dies, measuring bend and concentricity of bore tubes.





## A Complete, Easy-to-Use System

The Microgage PRO PLUS is specifically designed so users can handle virtually any alignment application, with set-up taking only minutes in most cases.

Its rugged and highly portable smart display includes two convenient handgrips, a bright, color touchscreen, a hardware keypad, and a powerful on-board microprocessor that communicates via wires or wirelessly with receivers.

You can use the smart display to view and store alignment measurements, run applications, and upload data to a PC. The smart display can also present step-by-step guides (or “wizards”) for completing complex alignment tasks.

The Microgage PRO PLUS laser transmitters and

## Application Experience that Aligns with You

Even though the Microgage PRO PLUS was designed for easy set-up and use, your measurement and alignment application may be complex. That's why every Microgage PRO PLUS comes with in-depth application consulting, including tailored customer trainings that come to you live from our own product demonstration studio and skilled engineering staff. We'll answer your product questions, walk you through complex set-ups, describe various application scenarios, and demonstrate best alignment practices for your specific industry.

## Application Listing

- Assembling long machinery runs
- Measuring stage and slide run-out
- Aligning rolls, idlers and web systems
- Bore and tube alignment
- Adjusting gantry and bridge assemblies
- Aligning gearbox and bearing assemblies
- Checking machine bed and surface flatness
- Verifying rail and track parallelism
- Aligning spindles, lathes, and CNC turning systems
- Positioning shafts and transmissions
- Aligning propeller shafts, stern tubes and bearings
- Measuring mechanical and shaft deflections
- Checking milling and cutting stations
- Checking aircraft wing and rudder hinge bushings
- Adjusting presses, shears and indexers
- Checking injection molding equipment
- Positioning extruder bores and feed screws
- Geometric alignment
- Checking Z axis travel on machine tools



receivers are compact, highly durable, precision machined components specifically designed to work with a wide variety of mounts for easy attachment to virtually any surface or machine. Laser transmitters are available in several configurations to fit on machinery, in bore tubes, and many other applications. Microgage PRO PLUS receivers are also available in different configurations to meet your needs. For example, the 4D receiver that measures linear and angular displacements and a transparent receiver that allows multiple measurements along a common laser beam at the same time.



# Over 30 Years of Measurement and Alignment Leadership



Based in its state-of-the-art manufacturing facility outside Boston, Pinpoint Laser Systems has been the world's leading manufacturer of industrial alignment solutions for over 30 years, serving such other industry leaders as 3M, Boeing, General Electric, Lockheed Martin, General Dynamics, and Siemens, among hundreds of others.

Pinpoint Laser Systems measuring equipment is actively used in aerospace, power generation, machine shops, paper and textile mills, shipbuilding, plastic and film production, as well as electronic assembly, to name a few. Pinpoint has worked closely over the years with many manufacturers to develop and offer custom alignment solutions for robotic applications, medical scanning devices, aircraft assembly, electronic part fabrication and numerous other applications.

## Pinpoint Customers Include:

- Boeing
- Airbus
- Siemens Medical
- GE Healthcare
- Bell Helicopter
- Alcoa
- Applied Materials
- General Motors
- NASA
- Lockheed

## Industries Using Pinpoint Products:

- Machinery
- Aircraft / Aerospace
- Medical
- Shipbuilding
- Electronics
- Plastics & Rubber
- Paper
- Mining
- Military
- And Others



## Microgage PRO PLUS Specifications:

Measuring System	Specifications
Measurement resolution	0.0001" (2.5 micron)
Operating distance	6" to 165 feet
Measurement accuracy	± 0.0002" or 1% of measurement (5 micron)
Measurement range	± 0.350" (± 9mm)*
Laser Transmitter*	Specifications
Laser source	laser diode, 635 Nm, < 1 mW
Laser accuracy	≤ 2 arc-seconds
Laser repeatability	≤ 1 arc-second
Laser level	10 arc-second, precision bubble, machinist grade
Laser power	4, AA alkaline batteries & rechargeable option
Laser run-time	≥ 20 hours
Laser controls	on-off switch, LED; laser on & low battery
Laser dimensions	8.0" L x 2.0" W x 3.0" H (203mm x 51mm x 76mm)
Laser mounting points	¼-20 and 10-32 mounting points
Laser housing	solid machined aluminum, hard anodized coating
Receiver*	Specifications
Active detection area	0.75" x 0.75" (19mm x 19mm)
Receiver housing	solid machined aluminum & hard anodized coating
Receiver mounting	¼-20 & 10-32 mounting points
Receiver connections	10' durable cable or wireless option
Receiver dimensions*	2.0" x 2.0" x 2.0", 2.0" x 2.0" x 3.0" (wireless)
Receiver options	standard, bore, spindle, transparent, 4 axis and custom
Smart Display	Specifications
Display configuration	hand-held, portable, self-contained
Receivers	up to 4 simultaneously & expandable
Resolution	0.0001" (2.5 micron)
Range	user-configurable
Units	inch, mm, mils, custom
Display	state-of-the-art, color, high-resolution, touchscreen
Controls	keypad, multifunction buttons, touchscreen
Info	X/Y & angular data, computations, instructions
Storage	data readings & notes up to 10,000
Power options	Rechargeable batteries, 120/240 VAC
Housing	solid machined aluminum & hard anodized coating

\* Other Options Available



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Made in America



## Industry Groups And Customers

- **AIRCRAFT**  
Airbus, Boeing, Bell Helicopter, Lockheed, U.S. Air Force
- **AEROSPACE**  
NASA, Northrup Grumman, TRW
- **AUTOMOTIVE**  
General Motors, Nissan, Jtek Automotive, FMC Technologies
- **ELECTRONICS**  
Applied Materials, Axcelis Technologies, Varian Semiconductor
- **ENERGY**  
Detroit Edison, Nanosolar, Siemens Energy, National Oilwell, Westinghouse
- **MACHINERY**  
Regal Beloit, Heidelberg, American Motive Power, Navistar
- **MEDICAL**  
Siemens Medical, GE Healthcare, Hitachi Medical, Merck
- **MATERIALS**  
Alcoa, American Superconductor, Kaiser Aluminum, Reynolds Metals
- **PLASTICS & RUBBER**  
3M, DuPont, Flexcon, Goodyear Rubber, Husky Injection Molding.
- **PAPER**  
Domtar, Fort Howard, Kimberly Clark, Mead Packaging
- **SHIPBUILDING**  
Bath Iron Works, Electric Boat, Newport News Shipbuilding, U.S. Navy



LASER RADIATION  
DO NOT STARE INTO BEAM  
CLASS 2 LASER PRODUCT

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