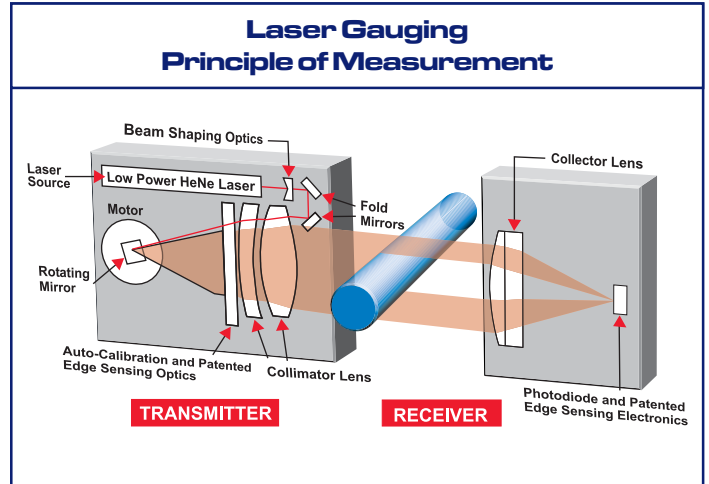


We live in a world where increasingly tighter tolerances are a way of life – and so is the pressure to turn out precision parts efficiently. That’s why you can’t compromise on the accuracy of your measurement systems – which is precisely why we don’t compromise on our measurement solutions.

Our non-contact laser measuring devices give you the absolute truth about your parts. And because nothing but laser light touches your product, there’s no part distortion or operator influence to affect your measurements. You can measure soft, delicate, brittle, hot, even radioactive parts with complete confidence.

Z-Mike gauges are designed with the versatility to measure a wide range of part dimensions. Listed below are examples of the many types of dimensional measurements that can be made.



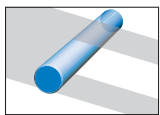
Measurement Capabilities

Outer Diameter		Multiple Diameter		Inner Diameter	
Part Position		Height		Width	
Gap Between Parts		TIR		Straightness	
Large Diameter (Stacked Gauges)		Taper		Ovality	

Measurement Solutions

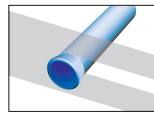
As the leader in non-contact gauging we know that you are looking for solutions, not just sensors. That's why for over 30 years we have been providing customers like you with the industry's best applications support. Our staff of measurement experts will help guide you to the right standard product solution or create a solution customized to meet your specific measurement needs.

Diameter



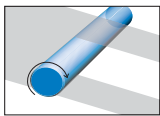
Outside Diameter of the lobe on a camshaft is determined by the shadow created when the shaft obscures the laser beam as it scans across the measurement area. The camshaft is mounted on a linear slide so that outside diameters can be determined for each cam.

Taper



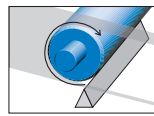
The taper angle of a crankshaft bearing is determined by traversing the part on a linear slide with an encoder. The OD is measured at two locations and taper is determined by calculating the change in diameter divided by the change in position of the slide.

Ovality



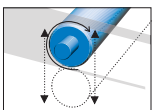
A rubber print roller is manually rotated to measure maximum and minimum diameter. Ovality is displayed as Max OD - Min OD.

TIR



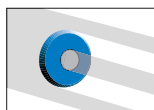
A cutting-tool blank is rotated on a v-block while measuring the gap between the blank and a reference edge. TIR is measured as the total change in the size of the gap.

Effective Cutting Diameter



The effective diameter of a part is determined by rotating it in a fixture with near-zero runout. The position of the part and its diameter are monitored simultaneously as the part rotates, to determine the maximum circle inscribed by the part.

Inner Diameter



The inside diameter of a tube forming die is measured by traversing the die across the scanning field. As the die is traversed, the software looks for the "peak" or maximum size of the inner light segment. This system can measure dies from as small as 0.5" ID to 5.5" ID without any changes to the fixturing or configuration.



The BenchMike separates itself from other measurement devices with features that make it the industry's most accurate, reliable and easiest-to-use gauging system.

Accuracy

- Patented optical design and electronics provide unequalled accuracy and exceptional repeatability
- Auto-calibration maintains accuracy throughout the measurement range and adjusts for temperature variation in shop-floor environments

Reliability

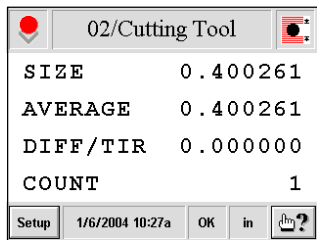
- Non-contact technique eliminates operator-influenced measurement error
- Little or no adjustment is required to measure a wide range of part sizes or dimensions
- Rugged cast housing is sealed against dust and moisture for use in factory-floor environments

Ease-of-use

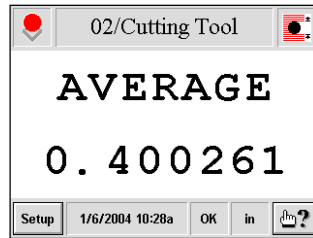
- Touch-screen interface and color graphical display provides a simple, yet powerful user interface
- Multiple product types can be stored and recalled at the touch of button
- Integrated I/O allows seamless use of automated part handling and motion control.



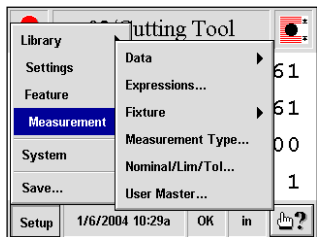
Data display



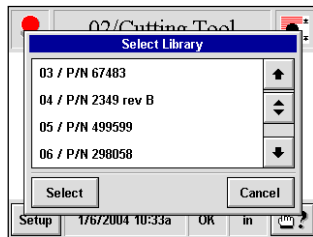
Magnified display



Pop-up menus



Library (part) selection



	4025S	4025G	4050S	4050G
Measurement Range¹	0.005 to 1.0 in. (0.1 to 25.4 mm)	0.005 to 1.0 in. (0.1 to 25.4 mm)	0.010 to 2.0 in. (0.25 to 50 mm)	0.010 to 2.0 in. (0.25 to 50 mm)
Repeatability	±0.000012 in. (±0.3 µm)	±0.000005 in. (±0.13 µm)	±0.000020 in. (±0.5 µm)	±0.000010 in. (±0.25 µm)
Linearity	±0.000036 in. (±0.9 µm)	±0.000020 in. (±0.5 µm)	±0.000060 in. (±1.5 µm)	±0.000030 in. (±0.76 µm)
Measurement Area Passline	2.21 in. (56.1 mm)	2.21 in. (56.1 mm)	3.05 in. (77.5 mm)	3.05 in. (77.5 mm)
Measurement Area Depth of Field	±0.060 x 1.0 in. (±1.5 x 25 mm)	±0.060 x 1.0 in. (±1.5 x 25 mm)	±0.125 x 2.0 in. (±3 x 50 mm)	±0.125 x 2.0 in. (±3 x 50 mm)
Laser Beam Spot Size¹	0.005 in. (125 µm)	0.005 in. (125 µm)	0.010 in. (250 µm)	0.010 in. (250 µm)

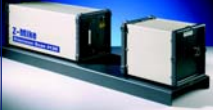
¹Model 4025 available with special 0.001 in. (25 µm) laser beam spot size designed for applications measuring small parts or characteristics.

(Note: Measurement range limited to 12 mm maximum)






Precision Measurement Heads

A complete line of scanning laser gauges is available for applications where a bench top solution is not required. The Z-Mike family of gauges offers a wide choice of measurement ranges, accuracies, and sizes to provide the perfect product to fit your measurement needs.

4000 Series High Precision Gauges

	Model	Meas. Range	Repeatability	Linearity	Dimensions (L x H x W)	PrecisionPro Compatibility	
						6000	2000
	PrecisionScan 4120C	2.5 - 112 mm (0.1 - 4.4 in.)	±0.5 µm (±0.000020 in.)	±5.0 µm (±0.000200 in.)	990.6 x 254 x 254 mm (39 x 10 x 10 in.)	yes	no
	PrecisionScan 4120F	0.25 - 115 mm (0.01-4.5 in.)	±0.8 µm (±0.000030 in.)	±5.0 µm (±0.000200 in.)	990.6 x 254 x 254 mm (39 x 10 x 10 in.)	yes	no
	PrecisionScan 4120HP	0.25 - 115 mm (0.01 - 4.5 in.)	±0.5 µm (±0.000020 in.)	±3.8 µm (±0.000150 in.)	990.6 x 254 x 254 mm (39 x 10 x 10 in.)	yes	no
	PrecisionScan 4130C	0.25 - 130 mm (0.01 - 5.1 in.)	±0.8 µm (±0.000030 in.)	±5.0 µm (±0.000200 in.)	990.6 x 254 x 254 mm (39 x 10 x 10 in.)	yes	no

2000 Series General Purpose Gauges

	Model	Meas. Range	Repeatability	Linearity	Dimensions (L x H x W)	PrecisionPro Compatibility	
						6000	2000
	PrecisionScan 2050	0.36 - 50 mm (0.014-2.0 in.)	±0.64 µm (±0.000025 in.)	±2.5 µm (±0.00010 in.)	536 x 142 x 60 mm (21 x 5.6 x 2.4 in.)	yes	yes
	PrecisionScan 2100	1.3 - 100 mm (0.050-4.0 in.)	±1.5 µm (0.000060 in.)	± 6.4 µm (±0.00025 in.)	682 x 192 x 94.6 mm (27 x 7.6 x 3.73 in.)	yes	yes
	PrecisionScan 2140	0.76 - 140 mm (0.030 - 5.5 in.)	±5 µm (±0.0002 in.)	±20 µm (±0.00080 in.)	990.6 x 344 x 130 mm (39 x 13.5 x 5.1 in.)	yes	yes
	PrecisionScan 2190	1.1 - 190 mm (0.050 - 7.5 in.)	±7.5 µm (±0.0003 in.)	±25 µm (±0.0010 in.)	1326 x 454 x 130 mm (52.2 x 17.9 x 5.1 in.)	yes	yes
	PrecisionScan 2330	6.35 - 330 mm (0.250 - 13.0 in.)	±12 µm (±0.0005 in.)	±76 µm (±0.0030 in.)	2069 x 689 x 159 mm (81.5 x 27.1 x 6.3 in.)	yes	yes

PrecisionPro Series

PrecisionPro 6000

An integrated touchscreen and Windows style graphical user interface make this new, affordable dimensional measurement processor incredibly easy to learn and use. But don't let the simplicity of operating the PrecisionPro 6000 fool you. This measurement processor has the data handling sophistication to provide the data you need in the form you need it on a clear, colorful flat-panel touch-screen display.



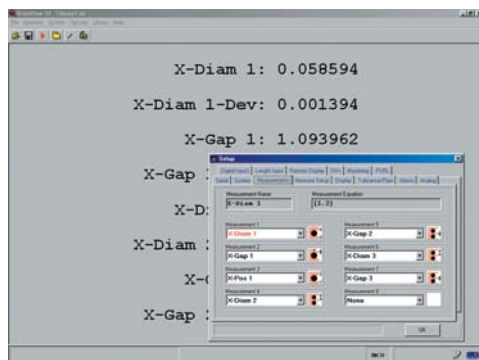
The PrecisionPro 6000 Capabilities:

- Support for up to 2 dimensional gauges
- Display up to 32 data items (eight simultaneously)
- Color coding of out-of-tolerance measurements
- Interfaces to motion control and position sensing devices
- Programmable measurement and data manipulation

Dimensions (H x W x D)	235 x 394 x 349 mm (9.25 x 15.5 x 13.8 in.)	Quadrature Encoders	1 input standard (2 nd input optional)
Enclosure Rating	IEC IP-52 (NEMA 12)	High Current Drivers	4 open collector outputs standard (8 additional optional)
Ambient Temperature	4-50°C (40-125°F)	Printer Interface	Parallel printer port compatible with dot-matrix or ink jet printers
Power Requirements	108-264 V AC, 50/60 Hz 90 VA maximum consumption	Programmability	User definable measurement types User definable data formats Arithmetic, trigonometric, and data conversion functions
Display	10.4" Diagonal Color Flat Panel Touch Screen Display	Multi-Feature Part Measurement	32 features per part
RS-232C Serial Port	2 standard (up to 115.2 Kbps)		
Programmable I/O	4 inputs and 4 outputs standard (8 additional outputs and 4 inputs optional)		

PrecisionPro 2000

With Beta LaserMike's PrecisionPro 2000 Data Processor, we just made it easier for you to connect a laser gauge to your existing computer system to create a complete, customized gauging system. The PrecisionPro 2000 is uniquely designed to transmit high-speed data measurements from a Beta LaserMike laser scanner to your host PC, giving you an easy-to-use, reliable way to process and examine measurement data to verify the quality of your product.



In addition, Beta LaserMike has developed an easy-to-use, Windows-based application to simplify setup and data display on your PC.

















With the DataView program, you can easily access setup parameters through user-friendly menus, help pages, and setup wizards. You can use either Beta LaserMike-provided libraries of setup parameters or you can design your own libraries for a specific product requirement. DataView also supports Windows' Dynamic Data Exchange (DDE), allowing each data item to be easily integrated into other Windows-based programs.

Dimensions (H x W x D)	83 x 165 x 275 mm (3.25 x 6.5 x 10.8 in.)	Power Requirements	108-264 V AC, 50/60 Hz 40 VA maximum consumption
Weight	1.95 kg (4.3 lbs.)	LED Indicators	Power, Scanner OK, Data Transmit, Data Receive, Status
Enclosure Rating	IEC IP-52 (NEMA 12)	RS-232C Serial Port	Standard: 2 (up to 512 Kbps)
Ambient Temperature	4-50°C (40-125°F)		

Ready-to-Mount Flexibility

Beta LaserMike offers an extensive line of ready-to-mount modular fixtures from simple manual fixtures to fully automatic and intelligent fixtures. These fixtures hold workpieces properly and effectively for any gauging need. Simply attach these easy-to-install fixtures to your gauge for precise, reliable measurements without calibration.

We provide a full line of heavy-duty fixtures to measure large parts, along with automatic motorized fixtures for part translation and rotation. For your custom needs, our Special Engineering group excels at developing fixtures for special applications.

	Fixture	Description	Part #
	Universal V-Block	Used for measuring parts positioned on their outside diameter.	7060-0117-06 (4025) 7060-0117-07 (4050)
	Modular V-Block	Used for measuring parts positioned on their outside diameter. Must be mounted on a slide or insulated base support.	83881 (4025) 83627 (4050)
	Flat Test	Designed for use when measuring the thickness of a flat part or the width of a rectangular cross-section, as well as for holding flat surface parts. Must be mounted on a slide or insulated base support.	83640 (4025) 83641 (4050)
	Universal Manual Slide	Used to linearly position parts by hand. Available in 18, 25 or 32 in. (457, 635 or 829 mm) lengths.	83610 (18") 83611 (25") 83618 (32")
	Heavy Duty Manual Universal Slide	Supports large parts with diameters up to 4.5 in. (115 mm) and loads up to 305 lb. (138 kg).	7070-0304-01
	Digital Readout Slide	Used to linearly position parts to predetermined positions for measurement, and/or measure the distance between two points on a part. Available in 18, 25 or 32 in. (457, 635 or 829 mm) lengths.	83616 (18") 83617 (25") 83863 (32")
	Adjustable V-Block	Supports parts that must be held on their outside diameters. Must be mounted on a slide.	83609
	Adjustable Dead Centers	Holds variable length shaft-type parts with centers. Must be mounted on a slide.	83607
	Adjustable Live Centers	Holds variable length shaft-type parts on lathe centers. Must be mounted on a slide.	83621
	Manual Concentricity	Supports cylindrical parts on their outside diameter for measuring concentricity.	83924
	Motorized Concentricity	Supports cylindrical parts on their outside diameter for measuring concentricity.	1334-000-002
	Auto-Rotating Chuck	Motorized rotation of shafts or wires to detect variation in diameter around the circumference. Keyless precision chuck holds diameters 0.030 to 0.50 in (0.76 to 12.7 mm).	84015
	Ultra Fine Wire V-Block	Designed for ultra fine wire or other material that must be held under tension for accurate measurement. Holds wires in the range of 0.001 to 0.010 in (0.025 to 0.254 mm)	84252
	Micrometer Adjustable V-Block	Designed for ultra fine wire or other material that must be centered for best measurement accuracy. Holds wires in the range of 0.001 to 0.400 in (0.025 to 10.16 mm)	84260
	Reference Edge	Used in applications requiring gap measurement, such as straightness, concentricity and run out.	85138 (1") 85139 (2")
	Insulated Base Support	Support Base for Flat Test and Modular V-block.	83639

Custom Solutions

Providing our customers with the total measurement solution is a priority at Beta LaserMike. If you've reached the end of this document and still haven't found a standard Z-Mike product that's just right for your needs, we have great news for you. Z-Mike offers Custom Solutions to ensure a perfect fit for your particular application.

We can modify an existing product, design and build special fixturing, customize a PrecisionPro software application, or engineer a unique system just for you. Let us show you examples of the numerous custom solutions we have provided for a wide range of applications. Getting started is easy - just contact your local Z-Mike representative to be on your way to a solution tailored to your needs.



Beta LaserMike Services

Beta LaserMike Services employs certified product specialists working with you to ensure the optimum performance of your precision measurement equipment, controllers, processors, and software. There is only one factory-authorized service organization that protects your Z-Mike product investment...the experts at Beta LaserMike Services. We guarantee your satisfaction!

Free Telephone Support

Call any of our global product specialists for product and/or technical support.

Free Website Support

E-mail us anytime at service@betalasermike.com and you will receive a reply within one business day.

Calibration

Beta LaserMike calibration services are performed in either your factory or one of our convenient service centers.

Depot & Field Service

You can choose to send your equipment to one of our convenient service centers or we will send one of our regional service engineers to your factory to repair your equipment.

Commissioning

Frequently, Z-Mike systems go into complex applications. In these instances, we provide complete commissioning and training services overseeing new product installation and system set-up while optimizing equipment performance and monitor results.

Training

We will teach you how to set up, operate, maintain, calibrate and troubleshoot your Z-Mike product(s). Training is customized to each customer's needs and available at your factory or at a Beta LaserMike regional service center.

Spare Parts

We have the largest inventory of spare parts in the industry available for immediate delivery to your facility.

Recommended Spare Parts Kits

Designed to save you time and money, these handy kits contain all the basics you need to maintain your Z-Mike product(s) ensuring that your production line will continue to operate without interruption.

ISO 9001
Certified



Z-Mike™
by BETA LaserMike



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Visit our website at: www.betalasermike.com