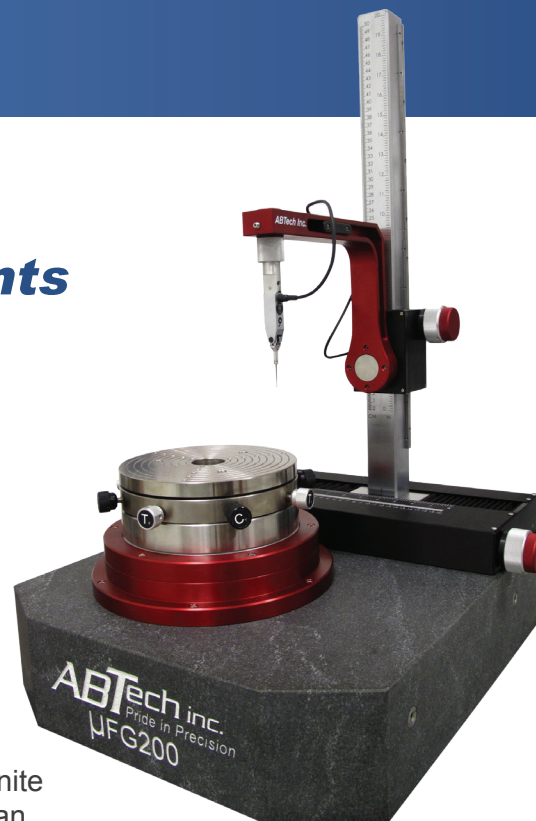


MicroForm Gages

Ultra-Precision Form Measurements

ABTech MicroForm™ gages quickly and easily measure precision geometric forms with unmatched repeatability. Each gage incorporates an air bearing rotary table in a robust platform to deliver ultra-precision results. Our proprietary software is powerful yet intuitive, and navigation is simplified with our large touchscreen user interfaces.

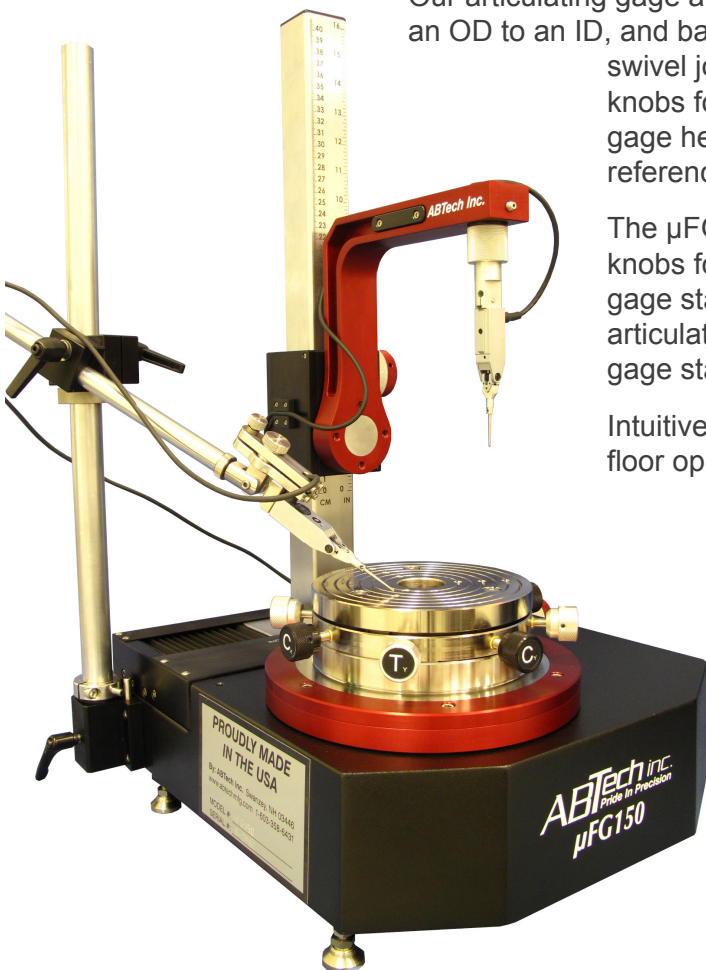
State-of-the-art technologies are featured throughout these gage systems. The metrology platforms combine an ultra-smooth, maintenance-free rotary air bearing with a standard motor drive on μ FG100 and μ FG150 (optional on μ FG200) as the reference axis. The air bearing table is embedded in a robust custom base (natural granite for the μ FG200) providing excellent thermal and vibration stability. Add an optional adjustable Tilt and Center worktable for precise part alignment reducing eccentricity errors.



Our articulating gage arm design lets you rapidly switch from a diameter to a face, or an OD to an ID, and back again, over and over. No wasted time wrestling with locks or swivel joints. The gage post and arm are mounted on a linear slide with knobs for quickly adjusting the vertical and horizontal position of the gage head on the part. Linear scales on the arm assembly are used to reference the diameters and heights of measurement surfaces.

The μ FG150 and μ FG200 models feature dual-action micro-adjust knobs for even finer adjustments and an option for adding a second gage stand for dual-probe functionality. You can also substitute the articulating arm style for a T-slot plate and traditional inspection quality gage stands on these larger models if preferred.

Intuitive software with touchscreen navigation is user-friendly for shop floor operators as well as fully functional for quality lab technician's analysis purposes. The most common geometric form measurements are included in all MicroForm gages; covering roundness, flatness, concentricity (in and out-of-plane), parallelism and perpendicularity. Our unique RunOut feature simplifies part alignment and provides quick in-process shop floor checks.



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Accurate and Repeatable.

An ultra-precision air bearing rotary axis is the foundation for all MicroForm gages to carry an overall system accuracy certification better than 5 millionths of an inch (5μ " or $0.125\mu\text{m}$). With no mechanical contacting parts to wear or create drag air bearings have very little friction and provide ultra-smooth, repeatable and maintenance-free operation. Our highly responsive lever-type probe has excellent linear reliability over the full travel allowing you confidence in the accuracy of your test results.

Stable and Reliable.

Common contributors to measurement errors have been purposefully engineered out of these MicroForm measurement platforms. Minimal cabling and connectors help to reduce the electrical interferences that could otherwise show up in your measurements. This robust design gives confidence that the measurement result is from the part alone, and doesn't include "noise" from the rest of the system.

State-of-the-Art Technologies for Fast Measurements.

A "real-time" operating system with dedicated FPGA processing platform and signal conditioners are included in MicroForm gages. These are the workhorses for running the measurement algorithms, eliminating resource conflicts typical with systems running on PC's. The on-board processor results in high speed data acquisition and instantaneously synchronizes the indicator displacement with the high resolution encoder for pin-point accuracy. The processing platform not only provides tremendous system performance but also permits future system enhancements without the cost and downtime associated with obsolescence of electronic hardware.

Quick Part and Probe Setup.

Fine resolution adjustment knobs and visible linear scales on both the horizontal stage and vertical post allow precise alignment of the probe tip to the measurement surface. The articulating arm and probe mount feature detents at 90° for quick diameter or face access and drift free positions in between. An additional gage stand and probe can be added to the μFG150 and μFG200 models for quicker multiple surface measurements.

Add an optional Tilt and Center worktable to level and align parts to the bearing's axis of rotation, reducing eccentricity. The spherical seat design maintains the part's center point when leveling, saving the operator time and frustration in setting up the part for measurement.

Easy-to-Use Software with Touchscreen Navigation.

ABTech's MicroForm™ measurement software offers intuitive navigation for shop floor use, and full function analysis for quality control labs. On screen "step-by-step" instructions are available to assist novice operators through each measurement, without reducing the efficiency of more experienced users.

A large touch screen color monitor is the operator interface for all MicroForm gages. Access and navigation are clearly laid out in two simplified screens. Toggle between the main setup screen with active analog and digital RunOut meters to the results screen with graphical polar and linear charts. A sidebar menu of all the form options is always visible along with the measurement results.

Capable Analysis Functionality.

Surface interruptions are automatically removed during measurements or easily edited out using our drag and drop feature on the results plot. Analyze harmonics, (slope and lobing optional) right on the results screen or export the data for statistical process control (SPC). Select the Configuration button to access user definable system preferences for customizing output and displays. Select from four reference circle types: Least Squares Circle (LSC), Minimum Zone Circle (MRS), Minimum Inscribed Circle (MIC), and Maximum Circumscribed Circle (MCC), Gaussian filter settings, units of measure, and other options to match your part drawing's requirement.

Quickly print or save a PDF file to share the measurement results and graphical charts and document traceability. An Ethernet network card is included in the PC for remote file storage and enterprise connectivity.



Repeatable Easy-to-Use Reliable

Articulating Arm Style Gages

Options

- Fine adjust Tilt and Center worktable for precision alignment
- Integrated motor drive (standard on μ FG100 and μ FG150 models)
- Second gage stand and probe (μ FG150 and μ FG200 models only)
- Universal style gage stand on a T-slot base (replaces the articulating arm style (on μ FG150 and μ FG200 only))
- Vacuum worktable and controller to hold sensitive lightweight parts safely and securely

Accessories

- Electronic indicators with ruby tipped probes; various probe lengths and tip diameters
- Structural steel frames with passive vibration isolation leveling feet
- Electronics cart to house PC, monitor, MicroForm controller and optional printer
- ABTech Precision Centering Fixtures
- Scroll chucks and custom collets
- Certified master test ball sets

Other MicroForm gage sizes and configurations are available. Refer to our website for information and datasheets on our Mini-Tower and Large Capacity gage models. www.abtechmfg.com

Articulating Arm Style Gages



Mini-Tower Style Gages



Large Capacity Gages



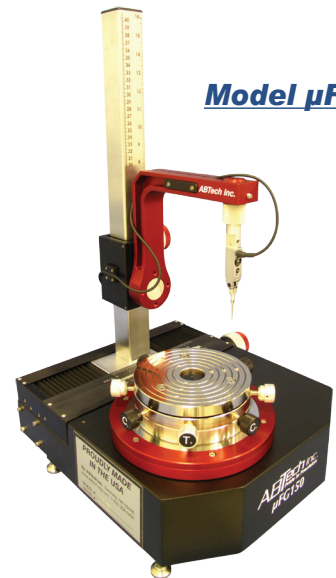
Features:

- Ultra-accurate and repeatable rotary air bearing axis
- High speed data acquisition for real-time measurements
- Quick positioning articulating gage stand with fine adjust
- Thermally stable and vibration resistant base
- Nearly perfect linearity over full measurement range
- Optional fine adjust Tilt and Center worktable for precision alignment
- Optional integrated motor drive (standard on μ FG100 model)
- Optional second gage stand and probe (μ FG150 and μ FG200)

Model μ FG100



Model μ FG150



Model μ FG200



MicroForm™ Gage	Model μ FG100	Model μ FG150	Model μ FG200
Bearing Type	Air bearing (stainless steel construction)		
Bearing Size	4" (100 mm)	6" (150 mm)	8" (200 mm)
Worktable Diameter	4" (100 mm) Optional: 6" (150 mm) 8" (200 mm)	6" (150 mm) Optional: 8" (200 mm) 10" (250 mm) 12" (300 mm)	8" (200 mm) Optional: 10" (250 mm) 12" (300 mm) 16" (400 mm)
Optional Tilt & Center Worktable Assemblies	4 knob spring loaded (1X, 1Y each centering and leveling) 8 knob opposing (2X, 2Y each centering and leveling)		
Centering Travel	+/- 0.05" (1.3 mm)		
Tilt Travel	+/- 1°		
Encoder	High resolution optical encoder with high speed interpolation		
Gage Stand	Quick positioning articulating gage arm and horizontal slide Coarse and micro-adjust vertical and horizontal drives (μ FG150, μ FG200) Vertical and horizontal reference scales Fine adjust vertical and horizontal drives (μ FG 100)		
Indicator	Uni-directional lever type		Bi-directional lever type
Base Type	Robust custom base		Inspection grade black natural granite
Base Dimensions	9.95" x 12" (253 x 305 mm)	14" x 16" (355 x 406 mm)	19" x 21" (483 x 534 mm)
Air Requirements	2.0 cfm at 60 PSI		
Filter Type	Dual stage (5.0 μ m/0.5 μ m) coalescing filter with regulator and shutoff		
Rotational Speed (with optional motor)	10 rpm		5 rpm (with optional motor)
Max Load Capacity*	50 lbs (23 Kg)	125 lbs (57 Kg)	250 lbs (113 Kg)
Work Envelope	8" diameter x 12" height (200 x 300 mm)	12" diameter x 16" height (300 x 400 mm)	16" diameter x 20" height (400 x 500 mm)

All specifications are at 60 psi and subject to change without notification

* Load capacities are based on centered and balanced vertical loads