



Digital Optical Comparator /
Digital Profile Projector
(PATENTED & OTHER PATENTS PENDING)

The Fastest, Easiest, Most Accurate Way to Compare a Part to a CAD File™

VisionGauge® Digital Optical Comparator 700 Series 5-Axis Inspection and Measurement Systems

- 5 axes of motion (X, Y, Z, Rotary, Tilt) to properly view parts from all sides & angles
- Fully-automated operation.
- No operator-to-operator variation
- Easy to program (can use your CAD data directly)
- Fast, accurate & easy-to-use
- Extensive set of measurement tools
- Straightforward operator interface: barcode-reader and joystick
- Intuitive software
- Patented & patent pending technology
- Powerful & innovative software tools for robust feature detection
- Sharp, clear & ultra-high resolution image!
- Ultra-bright all-LED computer-controlled multi-angle and multi-quadrant illumination is standard!
- High-resolution precision optics to make out very fine details with great clarity
- Extended optical depth of field and extended working distance for maximum flexibility!
- Automatically create reports and collect measurements, statistics, images and other data for complete documentation
- Automatic image & data collection with built-in SPC and data-exchange capabilities
- Fast and intuitive "operator review" mode to quickly revisit out-of-tolerance areas
- Robust shop-floor design



The 700 Series VisionGauge® Digital Optical Comparator 5-axis inspection and measurement system is the ideal solution for the automatic inspection of parts with complex geometries.



The system comes with an industry-standard chuck mounted on the system's double-rotary stage assembly.

Other mounting systems are also supported.

VisionGauge® Digital Optical Comparator 700 Series - Principal Specifications

Number of motorized axes	5 (X, Y, Z, Tilt & Rotary)
Standard travels (note: extended travels available upon request)	X axis travel = 12" (300 mm) Y axis travel = 12" (300 mm) Z axis travel = 12" (300 mm) A (tilt) axis range from - 90 deg to +90 deg. B (rotary) axis range from 0 deg to +360 deg.
All axes have closed-loop encoder feedback	X axis encoder resolution = 0.25µm Y axis encoder resolution = 0.25µm Z axis encoder resolution = 0.25µm A axis encoder resolution = 0.005 deg B axis encoder resolution = 0.005 deg
Stage movement	X, Y and Z axes: high-accuracy preloaded crossed-roller movement precision worm gear with high-accuracy preloaded crossed-roller movement with
End-of-travel limits	µm repeatability)
Mounting system	System 3R Macro Chuck (p/n 3R-600.24-S) (Other mounting systems available upon request)
High-resolution optical system	20X equivalent optical magnification (approx.) Working distance = 9.0" (228 mm) Depth-of-field = 1.8" (45 mm) Field of view = 1.7" (43mm) x 1.2" (30 mm) = 2.1" (53 mm) diag. Optical system accuracy: better than +/- 0.00015" (4 µm)
General-purpose dual-source reflected (i.e. front) LED illumination	Ultra-bright, all-LED based (for stable and repeatable illumination conditions & results as well as long life) Fully computer-controlled & programmable Produces very high brightness to easily handle even difficult-to-image areas The system's dual-source illumination module provides lighting at different angles of incidence (i.e. both near-vertical and low-oblique) for wide applicability across a very broad range of part geometries.
VisionGauge® Software	Powerful and easy-to-use Intuitive, windows-based graphical user interface (i.e. "point & click") Full 5-axis transforms Advanced software corrections with full 3D mapping across the system's entire work envelope Includes a wide range of powerful inspection and measurement tools Robust & field-proven, with a broad installed base (over 3500 license in use worldwide)
5-axis corrections	Chuck offset, fixture height and fixture center-of-rotation (X,Y) offset
Software feature-detection tools	Extremely powerful "adaptive" software feature-detection tools are able to accurately find and locate features of interest (such as EDM-drilled holes) on different surfaces, with different reflectivity, at different viewing angles, etc...
Digital Read-Out (i.e. DRO)	Yes (on-screen)
Auto-focus	Yes (with programmable region-of-interest)
Camera	High-resolution, digital (9 Megapixel)
Live video "refresh"	Real-time
Real-time mathematical image processing, enhancement and correction	Yes
Multi-monitor display	Yes
Extended set of high-accuracy measurement tools	Yes
Sub-pixel accurate edge detection	Yes
Image annotation tools	Yes
Built-in SPC capabilities, with automatic numerical charts & PASS / FAIL graphs	Yes
Automatic data export to Excel™	Yes
Automatic data export to other applications	Yes (through Windows™ DDE and other mechanisms)
Built-in Dynamic Data Exchange (DDE) support	Yes
Easy file data import & export	Yes
Automatic operation & program launch using the system's barcode reader	Yes
Barcode reader	Honeywell, industrial grade
Supervisor-level / operator-level password protection	Yes
Operating System	Windows™ 7
Built-in "F1 Help"	Yes
Power requirements	110V, 15 Amp
Operating temperature	10 °C - 30 °C
Clear and easy-to-use documentation (both printed and electronic "pdf" format)	Yes
Support (by phone, fax & email)	Included for a full year
Free software updates	Included for a full year
Warranty	1 year (complete)

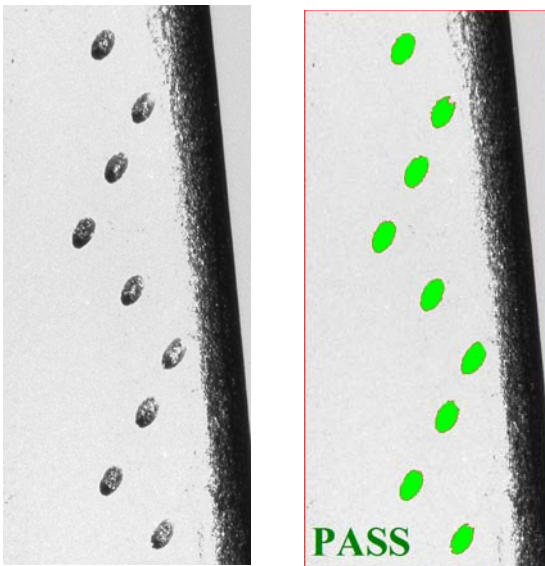
Note: specifications subject to change without notice.

The 700 Series VisionGauge® Digital Optical Comparator is the Perfect Solution for Checking EDM-Drilled Holes

There are many reasons why the VisionGauge® Digital Optical Comparator is widely used by manufacturers across a broad range of industries (including aerospace and power generation) to check EDM-drilled holes:

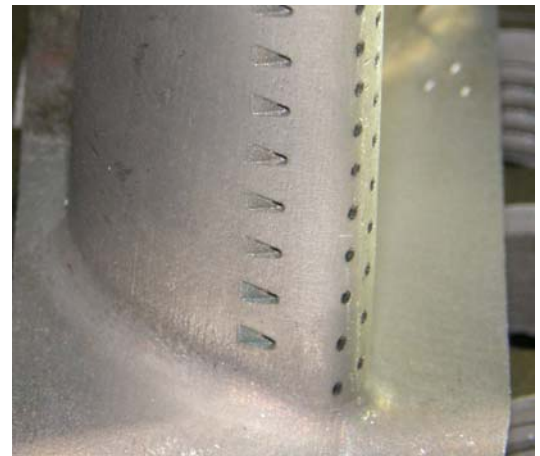
- Automatically verify hole presence & accurately measure hole location
- Supports both round and shaped holes
- 5 axes of motion (X, Y, Z, Rotary, Tilt) to properly view parts from all sides & angles
- Quickly, easily and accurately inspect 100% of the holes on your parts
- Robust shop floor design
- Can output the hole offsets which can be used to modify EDM drilling programs
- Mounting system allows your parts to go directly from the EDM drilling machine to the inspection system without re-fixturing (quick & easy and also minimizes stack-up error, etc...)
- The system can be supplied with the same working envelope as your EDM drill. If you can drill it, we can check it!
- Holes can be checked either one at a time, looking straight down each hole's nominal axis (ideal for coated parts, to minimize errors due to coating thickness variations) or multiple holes can be checked at once, viewing them at an angle (which is even faster and well suited for uncoated parts or parts with a uniform coating thickness)
- The system has an extended depth of field, so that everything is perfectly in focus regardless of the part's geometry (even in areas of very high curvature) as well as a very long working distance (so that there is lots of clearance between the part and the entire optical system to comfortably accommodate large and unusually-shaped parts)
- Extremely powerful "adaptive" feature-detection software tools are able to accurately find and locate EDM-drilled holes on different surfaces, with different reflectivity, at different viewing angles, etc...
- Specialized software tools are especially well suited to deal with burrs and splatter
- Automatically create reports and collect measurements, statistics, images and other data for complete documentation
- Fast and intuitive "operator review" mode allows the operator to quickly revisit out-of-tolerance areas, etc...

The VisionGauge® Digital Optical Comparator is a very cost-effective, perfectly adapted solution for checking EDM-drilled holes. It is rapidly becoming the new standard in the industry!



Automatically Verify Hole Presence and Location

- **Fast!**
- **Accurate!**
- **Easy to operate!**



Supports Both Round & Shaped Holes, Anywhere on the Part!

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