

FlexGauge Series

High accuracy shop-floor flexible gauging



✓ *Measuring solution*

- Absolute measurement. No need for a master part
- Customized probing solutions
- Optimal mechanical solutions for the customer's need



✓ *In-line*

- Reflecting the unique design of ITACA to overcome the barren environment of the shopfloor.
- Realize measurement cycle time satisfaction with optimal driving technology

✓ *Customized*

- ITACA CMM have modular design but not obsessed with standardization of strokes
- Machines strokes are designed to the need to minimize space occupation.
- Flexible scaling for less cost

✓ *High Accuracy*

- 0.1 μ m resolution. Structure built for micron accuracy in shopfloor environment
- Ensures optimum robustness by using materials with high thermal independence which minimizes offsets and deformations
- Automatic management of calibration of styluses on time/temperature planned management

Customized measurement solutions for high precision manufacturing sites

ITACA's unique technology for high accuracy on the shopfloor

- State-of-the-art integrated air bearings
- Optimum robustness to maintain the highest accuracy and Zero maintenance
- Granite base and moving column are resistant to temperature changes in shopfloor conditions
- Ultra-light unidirectional carbon fiber probe holder arm
- Maximum dynamic behavior, ensuring thermal independence
- Optimal driving ratio, optimal probing combination
- Superior speed and acceleration
- Fast cycle time to satisfy shopfloor needs
- Floating steel scale with 0.1 μm resolution For a barren production site with very severe environmental changes
- Zero-expansion scale or laser scale
- Continuous temperature compensation function for measuring body and each part



ITACA's unique design for manufacturing applications

- Stage with high magnetic preload bearings
- Bellows and air overpressure to protect from harsh environment
- No need for additional protective space like metrology room
- Mechanical protection for operator when needed with minimized footprint
- Interlocking for undisturbed measuring activity



FlexGauge C



PROBING

- Touch trigger probe : TP20, TP200
- Scanning probe : SP25M1-3
- Probe changer racks : FCR25

SUPPLIES

- Air supply: 0.6 MPa, 100 NL/min, 8mm
- Electrical supply
 - 230VAC +/-10%
 - 115VAC +/-10%, single phase
 - Power: 1.5 KVA (CNC controller + one standard PC & monitor)

STANDARD CONFIGURATIONS

MODEL	TECHNICAL DATA						
	STROKES			Max 1D Speed	Max 1D Acc.	Part weight	Mach. weight
	X	Y	Z				
	[mm]			[mm/s]	[mm/s ²]	[kg]	
FG-C352025	350	200	250	500	500	60	238
FG-C602025	600	200	250	500	500	80	245
FG-C1002025	1000	200	250	500	500	100	350
FG-C353035	350	300	350	500	500	60	245
FG-C603035	600	300	350	500	500	80	260
FG-C1003035	1000	300	350	500	500	100	360
FG-C353535	350	350	350	500	500	60	250
FG-C603535	600	350	350	500	500	80	265
FG-C1003535	1000	350	350	500	500	100	365

FlexGauge C application examples

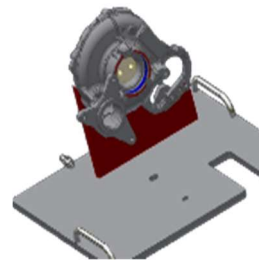
Brake caliper

- Trigger probe
- Designed to-need 10 point stylus
- Tool changer for part flexibility
- >30 Elements and tolerances
- Pokayoke and part recognition



Turbo compressor body

- Trigger probe
- Designed to-need 10 point stylus
- Tool changer for part flexibility
- >30 Elements and tolerances
- Pokayoke and part recognition



Camshaft

- Double trigger probe to minimize cycle-time
- Designed to need styluses
- Automatic part recognition and program launch avoids operator's mistakes



Hub & Bearing ring

- Scanning probe top speed scanning
- Automatic program generation frees from programming task. >100 products managed without writing a single program
- Tool changer for maximum flexibility



FlexGauge T



PROBING

- Touch trigger probe : TP20, TP200
- Scanning probe : SP25M1-3
- Probe changer racks : FCR25, MCR20

SUPPLIES

- Air supply: 0.6 MPa, 100 NL/min, 8mm
- Power supply:
 - 230VAC +/-10%
 - 115VAC +/-10%, single phase
 - Power: 1.5 KVA (CNC controller + one standard PC & monitor)

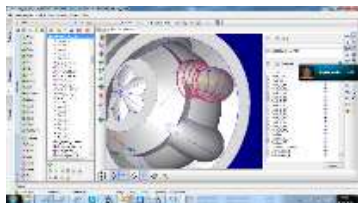
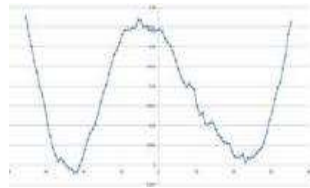
STANDARD CONFIGURATIONS

MODEL	TECHNICAL DATA						
	STROKES			Max 1D Speed	Max 1D Acc.	Part weight	Mach. weight
	X	Y	Z				
	[mm]			[mm/s]	[mm/s ²]	[kg]	
FG-T161016	160	100	160	500	1400	7	48
FG-T251625	250	160	250	500	1400	7	58

FlexGauge T application examples

CV-Joint measurement

- Offset cage-tracks
- P.C.D
- Cage and Ball track diameter
- Pressure angle
- Clearance
- Conformity
- Profile



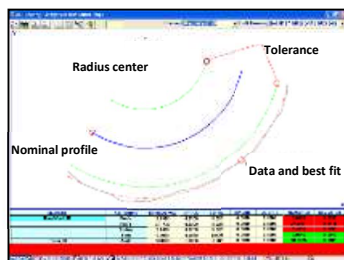
Brake gear blank measurement

- Scanning probe
- Complete measurement of all elements
- Tool changer for flexibility
- All dimensions and position tolerances
- Automatic recognition of part



Bearing measurement

- Form
- Raceways
- Dimension



Actuator rod measurement

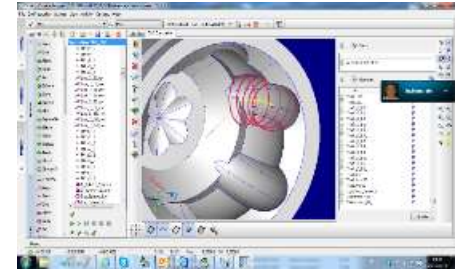
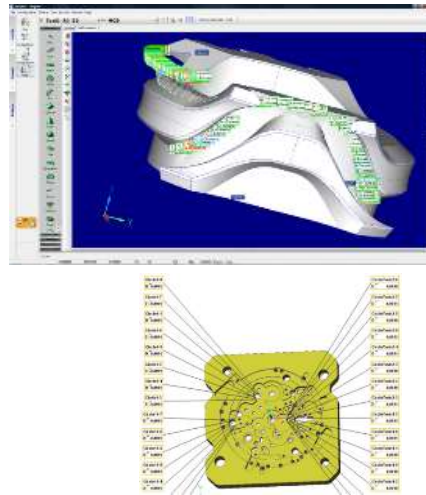
- Special to-need designed stylus
- All dimensions and position tolerances
- Integrated with robot manipulator



ITACA's metrology software

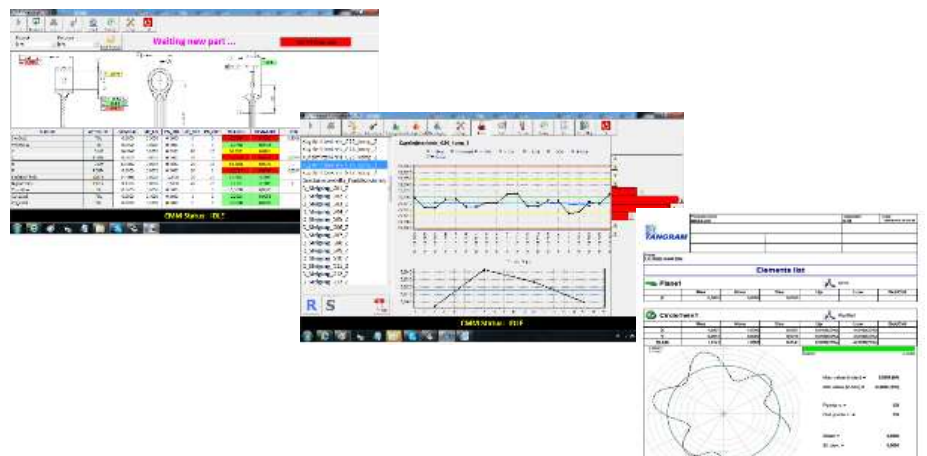
TANGRAM Geometrical CMM Software

- 100% icon based programming
- No need to learn a programming language.
- CAD helps writing programs and may be used for surface comparison
- Straightforward GD&T tolerancing
- It allows DMIS programs import
- Full compensation of machine's geometrical deviations



- Tangram is also an automation server allowing integration in automation systems
- Simplified operator front-end for Gauge-like interface
- Integration with central statistical systems (direct Q-DAS interface)

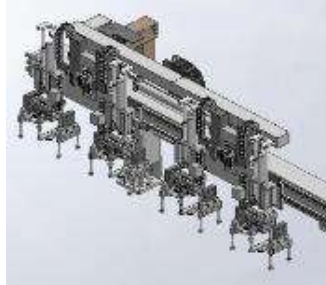
- Integrated simplified process statistical analysis
- Systematic quality management
- Tailored results visualization
- Machine tool data feedback for in-line offset compensation
- Part recognition. Powerful if-then-else sequence management. Ideal for automation



ITACA for the automated factory

In-line Automation

- Robot interface
- Auto-loader interface



Post-process gauging

- Machine-tool data feedback
- In process/post-process inspection



Part Automation

- Loading/Unloading interface
- Automatic measurement and SPC
Data routing

Itaca srl, founded 1996 by a team of engineers with deep experience in the technology of the dimensional measurement, steadily develops the technology of SW and HW for Coordinate Measuring Machines with a specialization in flexible production gauging and high accuracy measurement.

Itaca develops and produces measuring machines, specialized probes, controllers, HW e SW constantly focused in the field of dimensional metrology for the direct market and our OEMs.

Since August 2014 Itaca is part of the Group of Companies of Quality Vision International, Rochester – NY, thus even more committing to side their customers with top solutions for the Quality process in modern mechanical production.

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