Rapid-I

Precision Measuring Systems

Redefining Metrology

Multi-Sensor Precision Measuring Systems

- Vision Measuring Systems
- Workstage CMM
- 3D Scanner
- Contour Tracer

Accurate and Simple

CUSTOMISED TECHNOLOGIES (P) LTD
Challenging the Frontiers

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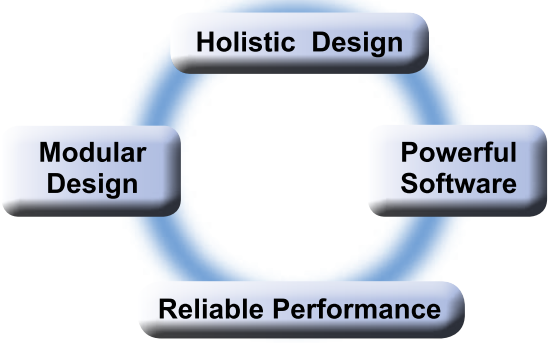
Rapid-I Technology Platform

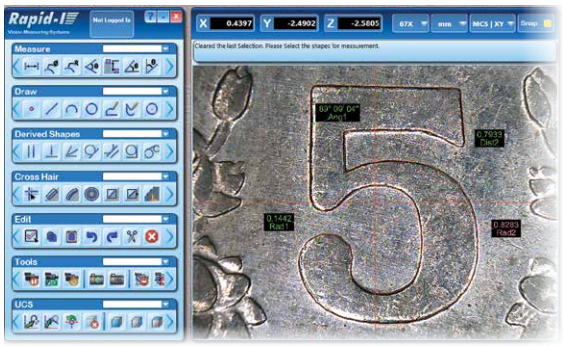
Intelligent Design

- Revolutionary all-steel framework
- Easy to use software with powerful features
- Agile R&D for quick and real-time feature development
- Environmentally friendly (low power consumption)
- Holistic, scalable design for easy upgrades



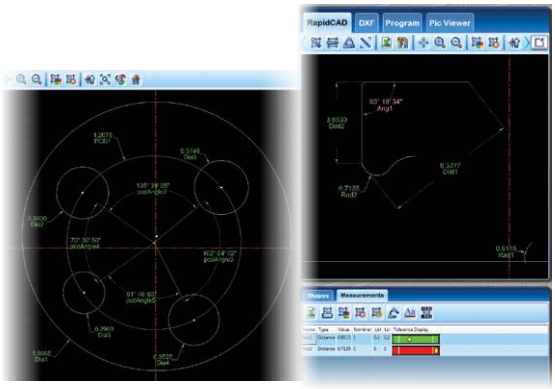
Comprehensive Graphical Tools

- Graphics-on-Video: Overlay on component to compare
- Geometric construction during measurement itself
- Virtual geometries like parallel/perpendicular lines, concentric circles, tangents and many more
- FasTrace for rapid drawing & reverse engineering
- Fixed graphics for Digital Fixtures, Digital Protractor, Text Annotation, Excel formulae etc.



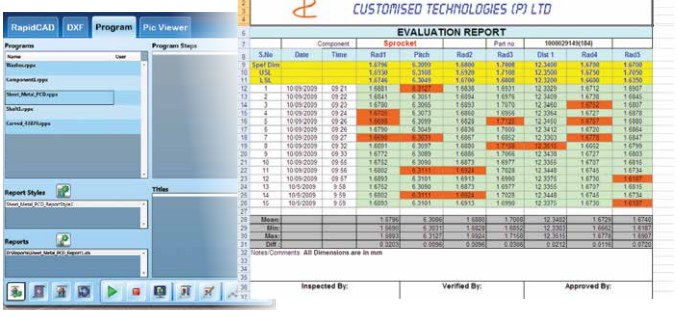
Smart, Graphical Measurements

- Intuitive graphical measurements in the RapidCAD window.
- Measurement-centric geometry construction
- Projectional Measurements in XZ and YZ projections
- Geometric Dimensioning and Tolerancing (GD&T) tools



Easy Programming & Automated Reports

- Teach Mode is always on
- Fully-automated CNC versions for automated, repetitive measurements
- Automated Rich Reports in MS Excel
- Graphical Reports and Snapshots
- Online SPC for Process Monitoring
- Colour-coded tolerancing for easy visualization



Multi-Functional Inspection Systems

Visual Inspection	Quality Assurance	Process Monitoring	Customised Reports
2D & 3D Measurements	G D & T	CNC Offset	Reverse Engineering
Mini-CMM	Virtual Geometries	Extend Tool Life	Thread Evaluation
3D Scanning	CAD Integration	Automated Inspections	Non-Contact Depth
Contour Tracing	Go/No-Go Checking	Trouble-Shoot Manufacturing	Micro-Hardness

Versatile Applications


Automotive

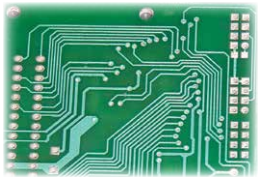

Aerospace


Precision Components


Cutting Tools


Sheet Metal


Medical/Pharma


Electronics


Plastics Rubber

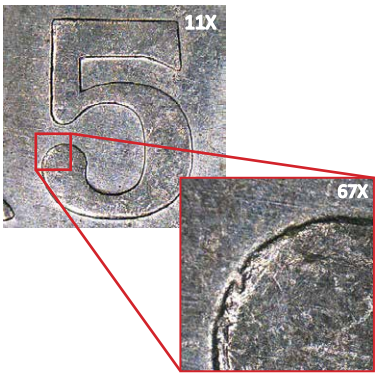

Horology

Easy to use, Powerful features. Reliable Performance

Rapid-I Vision Measuring Systems

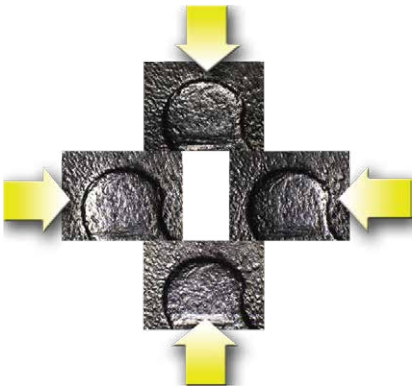
Sharp, High-Resolution Video

- High Resolution Digital Camera (upto 1600x1200 video)
- Snapshots in multiple formats with graphics overlay
- Optional 2X & 10X objectives (22- 654X)
- Programmable Camera settings
- 2X Digital Zoom (attain upto 1308X)



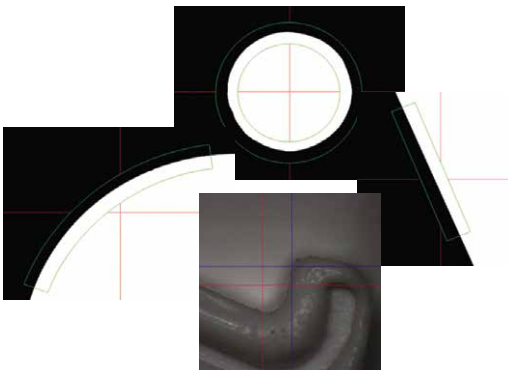
Smart, Programmable Lighting

- Solid-state LED illumination for 24/7 operations
- Lighting control through software
- Near-collimated profile lighting for sharp profiles
- Quadra-zone (fixed) surface illumination
- Flexible lighting for illuminating awkward angles
- Coaxial lighting optionally available



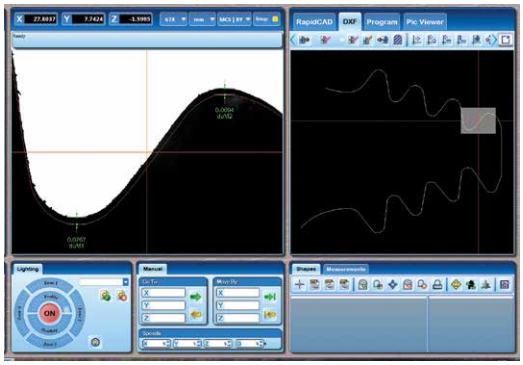
Easy Point Picking

- Choose Points for shapes with easy to use tools
  - Mobile & Scan Cross-hair
  - Frame Grab (Automated Edge Detection)
  - Profile Scan
  - Renishaw Touch Probe
- User Coordinate Systems avoid the need for
  - aligning components to cross-hair



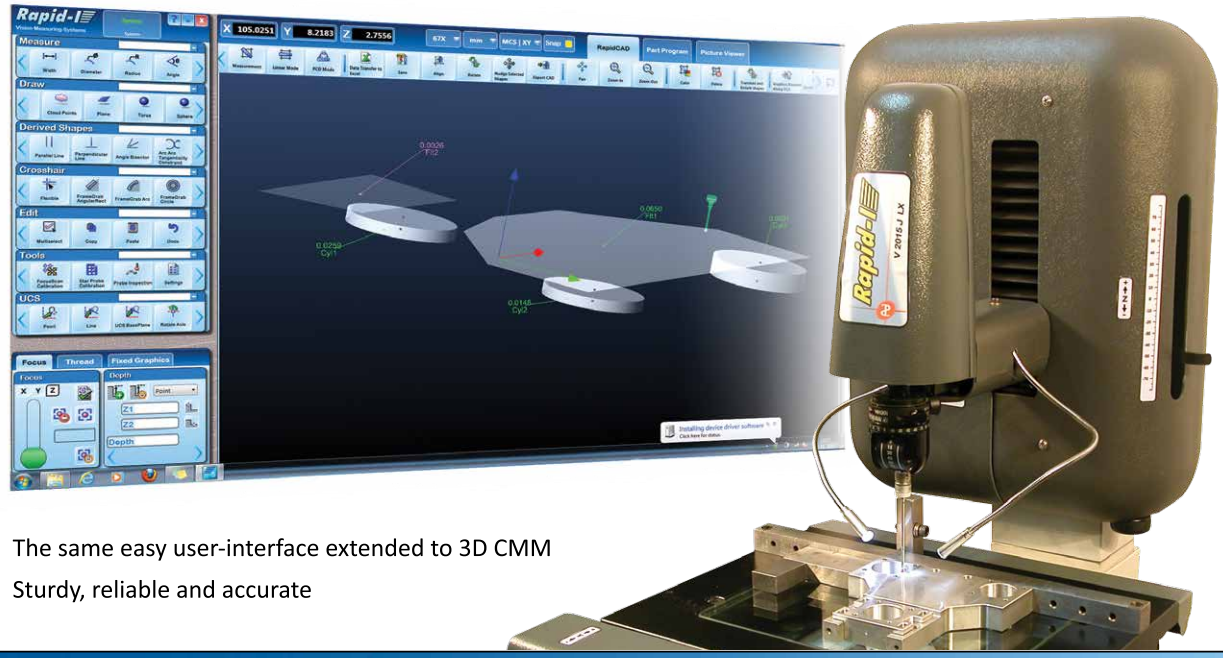
Seamless CAD Integration

- Import and overlay DXF-format CAD drawings (1:1)
- Easy 1 or 2 step alignment of drawings to components
- Base Plane Alignment for 3D drawings
- Nudge/Rotate drawing for fine alignments
- Edit CAD drawing in Rapid-I; or use the drawing as a template for programming
- Export workspace into CAD drawing (DXF/IGES format)



Work-Stage CMM

Easy to use CMM

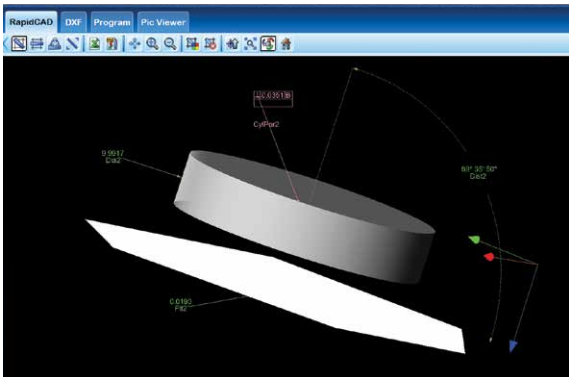


- The same easy user-interface extended to 3D CMM
- Sturdy, reliable and accurate

A CMM that can work in the shopfloor

- Integrated with Renishaw Touch Probe for accurate measurements
- No need for compressed air or other accessories
- Easy fixturing capability to eliminate alignment processes
- Amenable to continuous, high-volume measurements
- Easy to program, with all standard Rapid-I features
- You can combine measurements with vision as well for integrated measurements

Do Measurements in 3D

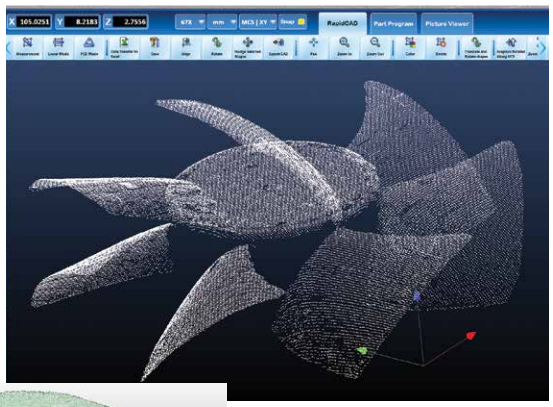


- Carry out measurements between 3D shapes
- Options for different measurements just a click away
- Measure distances, radii & angles between planes, circles, spheres, cylinders, cones & 3D Lines
- 3D GD & T including true position, cylindricity, co-axiality etc. available
- Custom measurement tools can be developed

3D Scanning

Non-contact scanning in 3D

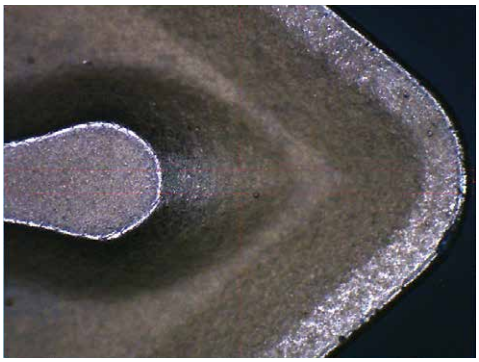
- Uses white light, with real-time auto-focus technology
- Scan small and medium sized parts easily
- User-defined point density is possible
  - High density point cloud at even < 4 μm possible
  - High accuracy of scan data (10 - 15 μm)
- Export Scan data to multiple file formats
  - .dxf, .txt, .csv
- Generate triangulated surfaces (.stl files) directly.
  - Feed stl files direct to CAM software for direct machining
- Automate scanning by teaching area of interest
- Scan small grooves, details, designs, surface profiles easily

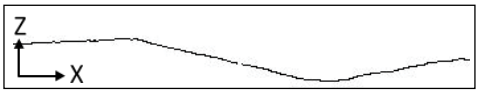


2D Contour Tracer

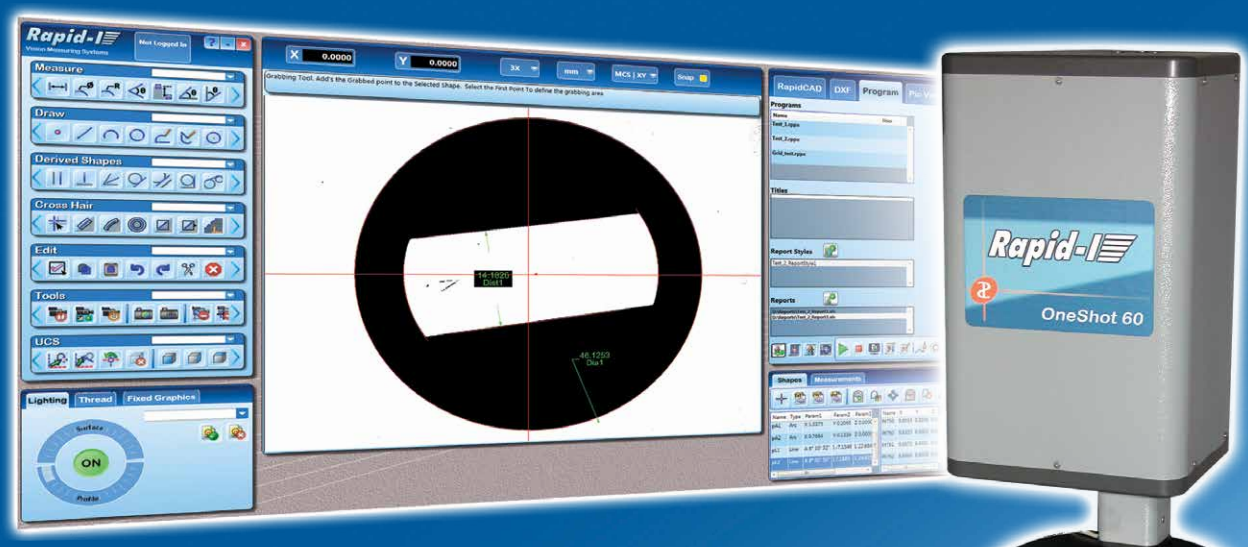
Measure/Trace profiles without touching

- High-resolution tracing along X or Y-Axis (points are ~3.7 μm apart)
- No need to cut the part
- Measure radii and angles/land of chamfers with very small land
- Combine with dimensional measurements in a single program
- Use virtual geometry tools available for complex measurements in XZ and YZ projections
- Teach your own contouring plane on the component and scan
- Prevent damage to component on sharp corners or sensitive pieces such as cutting tools etc
- Ideal for measuring profiles of flexible components like rubber, plastic parts and many others





Rapid-I OneShot

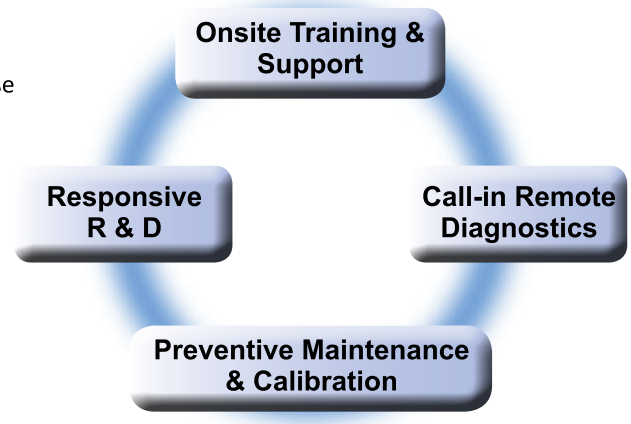


Place Component. Click Run. Measurement Done.

- Complete Rapid-I platform with single filed-of-view system
- Optional Zoom capability for wider component size range
- Program with all standard Rapid-I tools
- Measurements complete in a few weeks
- Place component in any orientation
- Ideal for High-Volume Inspections
- Simultaneously measure multiple pieces

Unmatched Service & Support

- Mechanics, electronics and software designed in-house
- Unmatched component and code-level support
- Designed for simple, rapid trouble-shooting
- Scalable design allows easy upgrades
- Highly efficient and committed support staff
- Calibration service with NABL traceability
- Low cost Annual Comprehensive Service Contract



Technical Specifications

Model Details				
	v2015	**v4020**	**v4030**	**v5030**
WorkStage Size (mm)	375 x 275	545 x 360	545 x 440	720 x 504
Measuring Travel (mm)	200 x 150 x 150	400 x 200 x 150	400 x 300 x 150	500 x 300 x 150
Job Weight	5/25 Kg	5/25 Kg	5/25 Kg	5/25 Kg

Optics and Video												
Video Resolution	800x600											
Optical System	6X Precision Motorised Zoom											
Objective Lens	1X (Zoomed Out)			1X (Zoomed In)			2X			5X		
	x	WD (mm)	FoV (mm)	x	WD (mm)	FoV (mm)	x	WD (mm)	FoV (mm)	x	WD (mm)	FoV (mm)
Option 1:	11	90	15.35 X 11.5	67	90	2.32 X 1.74	134	33	1.15 X 0.86	165	33	0.93 X 0.70
Option 2:	22	90	7.67 X 5.75	134	90	1.16 X 0.87	268	33	0.58 X 0.43	330	33	0.46 X 0.35
Co-Axial Lighting	Optional			Optional			Optional			Essential		
	Magnifications mentioned are indicative and subject to scale based on the size and resolution of monitor used. The true indicator of image resolution is indicated by the field-of-view, which remains constant for all monitors											

Lighting, Motion Control & Accuracy	
Lighting	4-Zone Surface, Wide-Angle and 20-Zone Wide Angle Fixed surface illumination; Co-Axial Lighting; Collimated Profile Lighting
Linear Scale	0.5 µm non-contact tape encoders (Higher Resolution on Order)
Motion Control	Continuously variable analog joystick for 3+1 (free) axis control
	Fully-automated CNC with Auto-Focus
	Manual Control available on request
Accuracy	(3 + L/100) µm (L in mm)
Touch Probe	Renishaw 3-Axis Touch Probe with 1 µm accuracy

Software Features		
Cross Hair	Fixed, Flexible, Scan, FrameGrab (Automated Edge Detection), Touch Probe, Multi-Scan with Focus.	
Geometric Tools	Standard Shapes	Point, Line, Circle, Arc, Plane, Sphere, Cylinder, Cone
	Virtual Shapes	Mid-Point, Parallel/Perpendicular lines, Angle bisectors, Tangents, Circles with centre, Parallel arcs, Pin-over dia, Nearest/Farthest points, Cloud points etc.
	Standard Measurements	Distance (point-point, point-line, point-circle, line-circle, circle-circle), Angle, Radius, Diameter (2D & 3D available)
	Advanced Measurements	PCD, Thread, Depth, Projections, 3D tools
DRO	Standard on-screen with Reset; User Coordinate Systems; Polar Coordinates.	
Graphics	Graphics-on-Video (real-time overlay), CAD (import/edit/export .dxf), Digital Micrometer (onscreen), FasTrace, Digital protractor, Fixed, Text	
Reports	Direct Reports in MS Excel with conditional formatting; Graphical Reports plus overlay on component image; Point-cloud files in DXF and delimited Text formats.	

*Customised attachments, including jigs & fixtures for your components can be developed for the Rapid-I System

Customised Technologies specialises in custom designing and manufacturing multi-engineering speciality products and solutions. Strong emphasis on creative thinking and R&D enable us to develop new products and upgrade existing ones to meet customer requirements at a rapid pace. The specifications provided in this brochure are only indicative and our speed of innovation results in constant improvements in the features available.

Rapid-I won the TDB-DSIR Award for "Successful Commercialisation of Indigenous Technology" from the former President of India, **Dr. APJ Abdul Kalam,** in the presence of Sri Prithviraj Chavan, Minister of Science & Technology, Govt. of India.