

# Multi SENSOR CNC INSPECTION SYSTEM



### 3 Measuring Technologies in One



VISION



TOUCH  
PROBE



LASER

### VISION



- **Highest Through Put** In Flat Non Contact Measurement.
- **Most Accurate Microscopic** Parts Measurements
- Quick To Capture Even The **Smallest Details**

### TOUCH PROBE



- **Best Solution For** 3d Measurements
- **Perfect Solution** Non Pliable Parts
- Applications Includes 3d Measurements Of Metal Processed Parts Like **Apertures, Included Angle** Etc.

### LASER

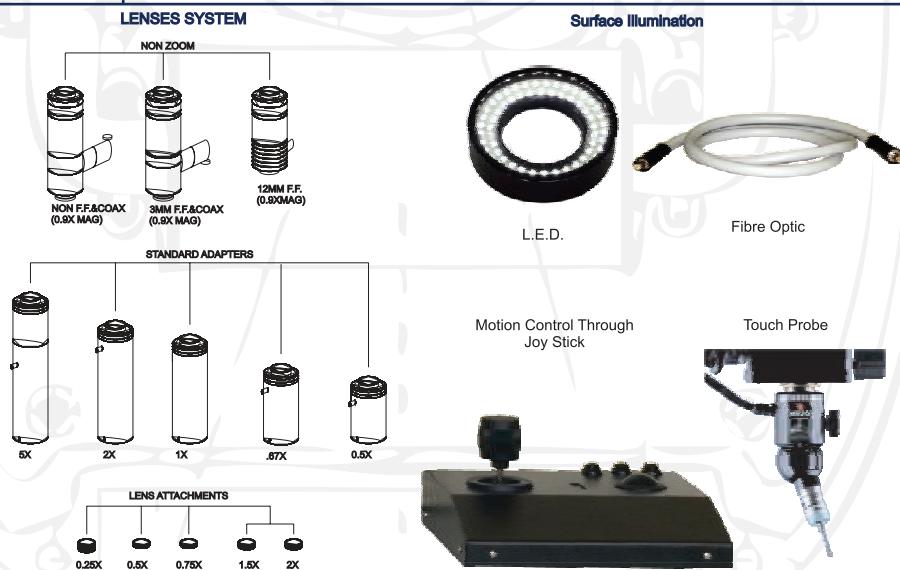


- Highest Accuracy Is **Depth Measurement**
- Best For **Surface Contouring** And **Surface Scanning**
- Applications Include **Complex Contouring** Of Mould And Measurement Of Soft And Flexible Components.

## SPECIFICATIONS :-

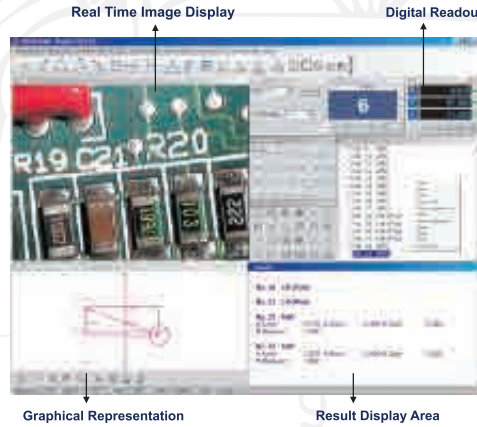
Model No:	SVI-3D-CNC-20203
Software	IK 5000 / MSU3DPRO
Measuring Range-Standard	200 X 200 X 300 mm
Measuring Range-Optional	X-Axis upto 500mm, Y-Axis upto 400mm, Z-Axis upto 300mm
Resolution	0.005 / 0.001 / 0.0005 / 0.0001mm
Linear Accuracy	(3+L/200) micron
Repeatability	+/- (0.002mm)
Vision	1/3" High Resolution CCD Camera
Magnification	Optical Magnification 0.7X - 4.5X & Magnification on Monitor 35X - 225X
Video Edge Detection	Standard
Optional Hardware	PC + 19" TFT Monitor
Illumination Surface	Fibre Optic / LED
Illumination Contour	Halogen Lamp /LED
Operation	Manual with Quick Release Knob & CNC
Base Platform & Column	Granite
Platform load capacity	30 kg
Power Supply	220-240 V + /-5%, 50/60 HZ
Motion Control through Joystick	Standard
Programmable Light Control	Optional
Non-Linear Error Correction	Optional
Autofocus	Optional
Touch Probe	Renishaw MCP/ MH20i
Probe	Conoprobe

## Options



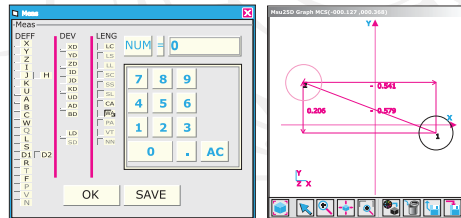
"THE MEASURING SOFTWARE PROVIDES A QUICKER AND EASIER MEASURING METHOD. 3 AXIS GEOMETRICAL MEASURING FUNCTIONS, AUTOMATIC EDGE DETECTION AVOIDS VISION MISTAKES AND TIREDNESS. EXCELLENT GRAPHICS INTERFACE ALLOW TRANSFER TO CAD"

### Software Desktop



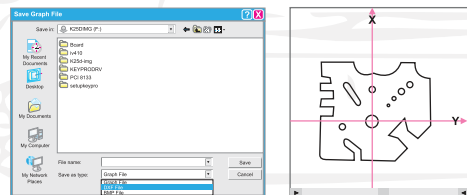
### Fast Multi Datum Output

You can do more than one measurement at the same time by setting the options in this window. For example you are measuring the distance between the two circles and at the same time you want the angle of the distance line with the X axis just set the options, you will get both result with just one click.



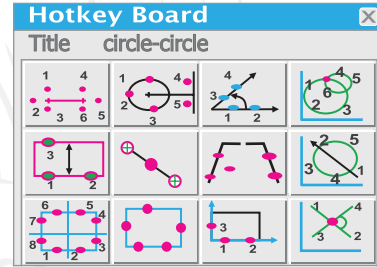
### Data Management - Export

Option to save graphs as DXF or IGS files makes it possible to export our measurements to CAD and CAM for further editing. You can also "click" the features in the graph to calculate the measurements between the elements. For example to measure the distance between the 2 circles in the graph just click the distance button and then click the two circles from the graph. The result is on the screen.....



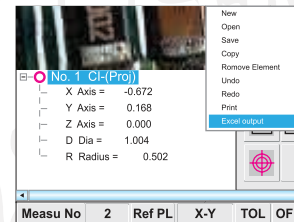
### Program Hot key Board

Customize the series of measurements according to your part and make an icon for it. Next time just press it and start the measurement. So with this software just Measure one part for the others it will guide you how to measure.



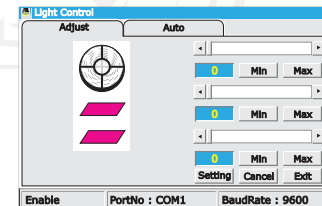
### MS- Excel Report Generator

Just right click on the result display and transfer all the results with graphic display to MS-Excel in a fully customizable report format with coded Pass / Fail for tolerance parts and get reports conforming to your ISO specifications.



### Light Control

Software capable of handling 4 channel light controller with programming capability for each channel i.e. intensity value for each channel source would be memorized in the program and would be repeated at the time of running. This can also be used to control the 4 Quadrant LED light controller.



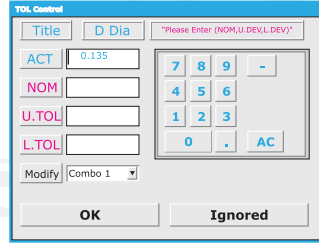
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"TYPICAL WORK  
PIECES  
CONTAINING  
MULTIPLE  
EDGES  
WITH IN  
CALIPER OR  
WEAK  
CONTRAST  
MAKES  
EDGE  
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EXTREMELY  
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MSU3DPro IS  
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IMAGES  
AND  
ENHANCING  
THE  
PRECISION."

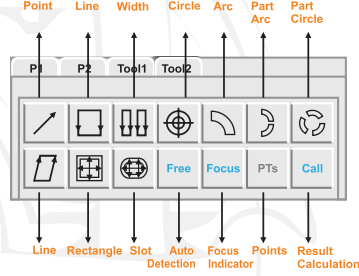
### Tolerance Setting & Result Display

Supports more than 10 types of Tolerance setting including group Tolerancing (Circularity, Concentricity, Perpendicularity, Parallelism etc ...) and Result window will display all the results with tolerance values and will give an indication for PASS or Fail features.



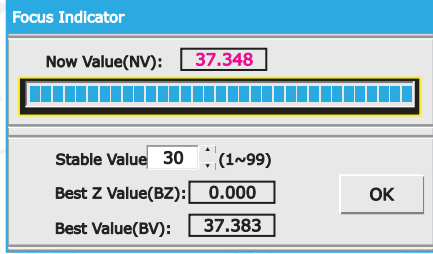
### Video Edge detection measurement options

These tools automatically generates the region of interest around the feature to be measured which facilitates searching of points, lines, circles and arcs of the workpiece in that region.



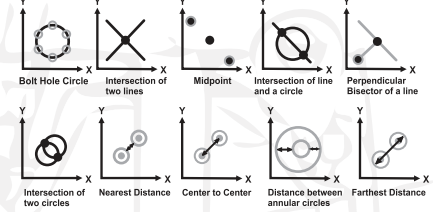
### Focus Indicator for accurate 3-D Measurement

This will indicate the best focus value and the corresponding Z value to make sure focus is clear before measurement. A must to do for 3-D Measurement.



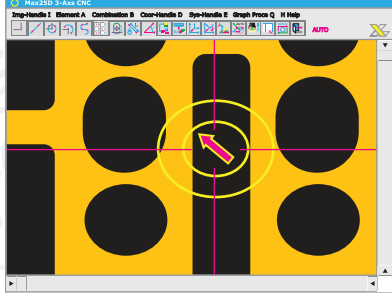
### Construction capabilities

Select two or more features to create intersections or constructions. This reduces operator effort by eliminating confusing construction menus.



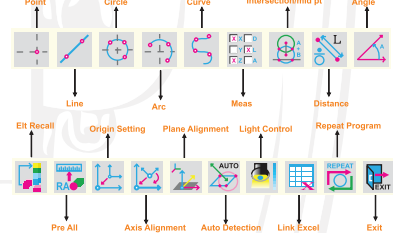
### Programming & Navigation

Teach programs with one click and repeat those with the help of navigation Tool bar shown in the above picture. This navigation Toolbar guides you what features are to be measured and where is there exact location – Just press the mouse clicks and complete part will be measured . So just measure one part other similar ones would be measured automatically.



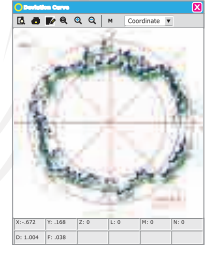
### Click & Measure Top Menu Bar

One Click Menu bar for all geometric measurement, origin setting, axis alignment, MS-excel output & Programming.

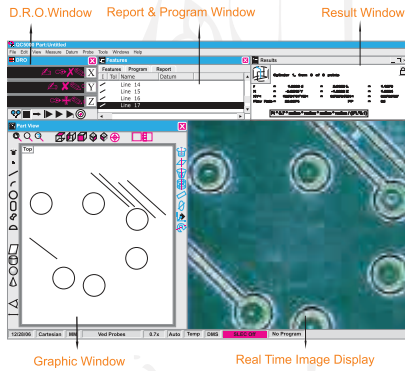


### Deviation analysis of point data.

This feature gives you the coordinates of the points taken on the element along with the form tolerance value of each point. This is very useful to analyze the irregularities on the feature. You can choose the type of result you want – Min, Max or Avg. Also you can have a print out of this report.

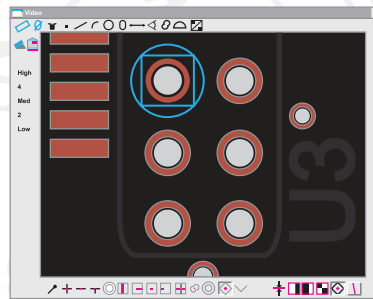


"THE CONCEPTUAL THE MODEL OF IK 5000 SOFTWARE ORGANIZES THE WORK FLOW TO SUPPORT OPERATOR NEEDS AT EVERY STAGE OF MEASUREMENT PROCESS-MEASURING-RECORDING-ANALYZING-REPORTING AND COMMUNICATING THE DIMENSIONAL DATA."



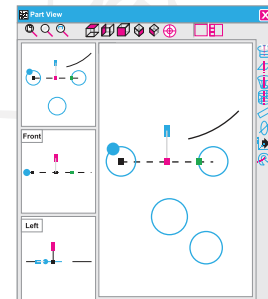
**Software Desktop**

Comprehensive Software Desktop with all the measuring functions just a click away. Simultaneously with the measurement you will have the result display and drawing of the measurement in front of you on the software desktop. The core of product is the simple, visual part view window with convenient tool bars that define Quadra -Chek measurement process.



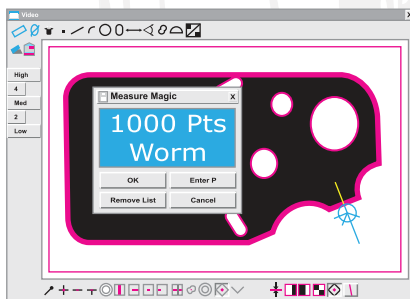
**Pattern Finder**

The Pattern Finder probe is used to teach and later to find features having regular or irregular patterns. Pattern finding is usually included in programs to minimize operator interaction when a datum is created automatically for each of a series of parts or when some feature locations are not repeatable due to part variations.



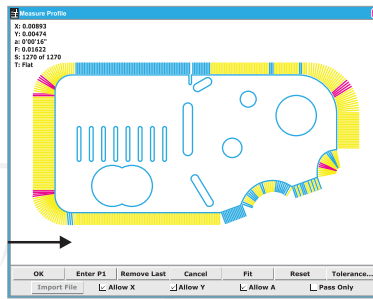
**Graphical Representation**

Graphical Representation in all the possible views-Top, Left, Front, South east etc. The graph is fully interactive for fast constructions and relationships. For example, to measure the distance between two circles, just select the distance function, then click on two circles in part view window. There's your answer. It's that simple.



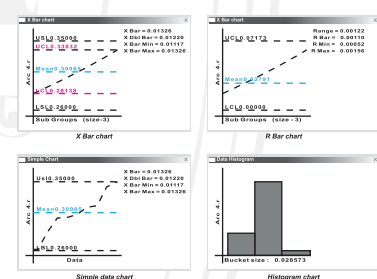
**Worm tool**

The worm probe generates a series of scans perpendicular to and across the perimeter of a feature edge in the direction indicated by the probe. Each scan acquires a data point at the edge of the Image.



**Overlap Deviation Analysis**

The profile feature shown in the Feature Stamp window with form error whiskers that passed tolerance tests in the range of 0 to 50% shown in green, 51 to 100% in yellow. Form errors that fail the tolerance tests are shown in red.



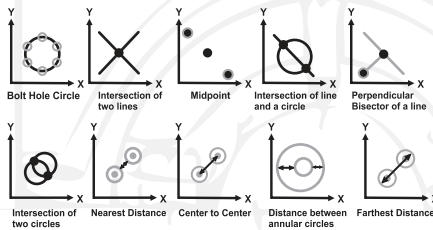
**Integrated Statistical Process Control**

Integrated Windows - based SPC Analysis capable of forming X Bar Chart, R Bar Chart, Simple Data Chart, Histogram & other pertinent capability & process control data.

"THE METROLOGY SOFTWARE FEATURES & EASY TO USE PROGRAMMING INTERFACE THAT IMPROVES PRODUCTIVITY REDUCE SUBJECTIVITY AND SIMPLIFIES REPETITIVE TASKS. CONSTRUCTION FEATURE REDUCES OPERATOR EFFORT BY ELIMINATING CONFUSING CONSTRUCTION MENUS."

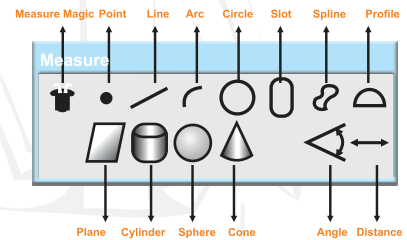
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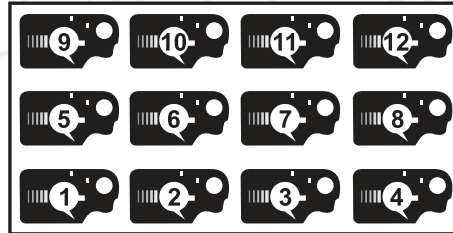
### Measurement Toolbar

One click options to measure all types of 2D & 3D features. With patented feature Measure Magic probe any feature, enter points and with a click QC-5000 **knows without you telling it** whether you are measuring circle, arc, or another shape.



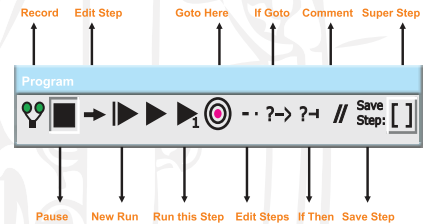
### Palletizing function

A palette is a rectangular arrangement of identical parts organized into a consistent matrix of columns and rows. Once a part program is created and tested for a single part, it can be run on each of the identical parts contained in a palette.



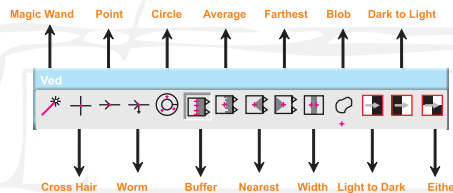
### Programming

Simplify difficult and repetitive measurement sequences with an easy to use and robust programming interface. Programming steps are in English language which are easy to understand and edit. Edit any step, add any step, use normal conditional statement like if-then, else-then & lots more..



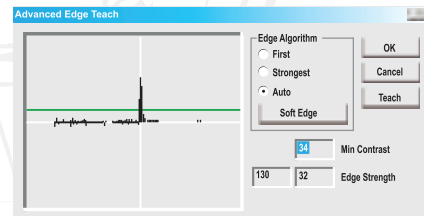
### Video Edge Detection Tools

A wide variety of video probes is available for measuring regular geometric features such as points, lines, arcs, circles and slots. Video probes are also available for measuring irregular features, features that extend beyond the field of view and entire part profiles. In addition, pass/fail charts can be imported and used to facilitate visual inspections.



### Edge teaching algorithms for weak edges

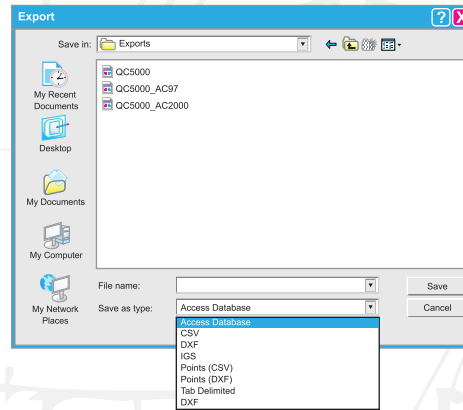
The edge teaching criterion entered by the system is adequate to provide excellent edge recognition for most applications. The criterion for the selected edge algorithm can be changed by entering a new value into the Min Contrast field. This will ensure optimum edge detection even in low contrast surfaces and exact points on the edges will ensure exact results.



"OPERATORS CAN EASILY FORMAT, ANALYZE & COMMUNICATE MEASUREMENTS THROUGHOUT THE COMPANY & AROUND THE WORLD. THE SOFTWARE INCORPORATE INTUITIVE DRAG AND DROP DATA FIELDS, MACROS & DATA BASE TEMPLATES ALONG WITH PROGRAMMING & AUTOMATION TOOLS."

### Data Management - Export & Import

Internal communication tools enable operators to record, store and analyze the measurement data. Operators can also export data to online database for offline analysis by quality control specialists. Export options include .dxf, .csb, .igs, .tdf, MS-Excel, MS-Access & SPC. Import options include .dxf, .igs, .asc, .sac

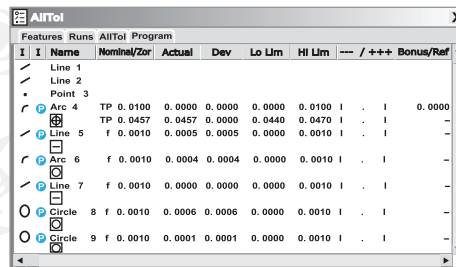


### Error Correction

- Linear Error Correction (LEC)
- Segmented Linear Error Correction (SLEC)
- Non Linear Error Correction (NLEC)

### Report generation

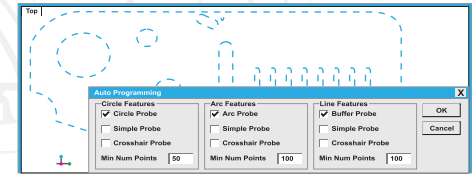
Fully customizable report format with color coded Pass / Fail for tolerance parts. Confirm to your ISO specifications and send data directly to an ASCII file or any SPC program. Customize results field for special measurement needs and complex calculations by embedding formulas (e.g. Automatically calculate area or circumference dimensions with each circle measurement)



I	I	Name	Nominal/Zor	Actual	Dev	Lo Lim	Hi Lim	---	/ +---	Bonus/Ref
		Line 1								
		Line 2								
		Point 3								
		Arc 4	TP 0.0100	0.0000	0.0000	0.0000	0.0100	I		0.0000
		Line 5	f 0.0010	0.0005	0.0005	0.0000	0.0010	I		
		Arc 6	f 0.0010	0.0004	0.0004	0.0000	0.0010	I		
		Line 7	f 0.0010	0.0000	0.0000	0.0000	0.0010	I		
		Circle 8	f 0.0010	0.0006	0.0006	0.0000	0.0010	I		
		Circle 9	f 0.0010	0.0001	0.0001	0.0000	0.0010	I		

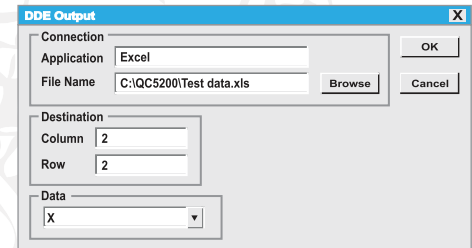
### Auto programming from DXF File

Import CAD files to automatically create part programs. This eliminates the necessity of using the actual workpiece to program and thereby eliminates long teaching sessions for every new part



### Dynamic Data Exchange

Dynamic Data Exchange facilitates Real time data transfer to various applications like Microsoft Excel, MS Access and others making real time SPC analysis possible.



### Tolerance types

Supports more than 15 types of tolerance settings with display in color coded pass and fail output. If there's a part or feature that doesn't measure up, you will know it immediately. Not only are all out of tolerance features displayed in red, but an audio alert signals if what you are measuring fails to match the specifications.

- LOCATION
- Bidirectional
- True position
- MMC
- LMC
- Concentricity
- FORM
- Straightness
- Roundness
- Flatness
- Cylindrically
- SIZE
- Length
- Radius
- Angle
- Width
- Diameter
- ORIENTATION
- Parallelism
- Perpendicularity
- RUNOUT
- Circular

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