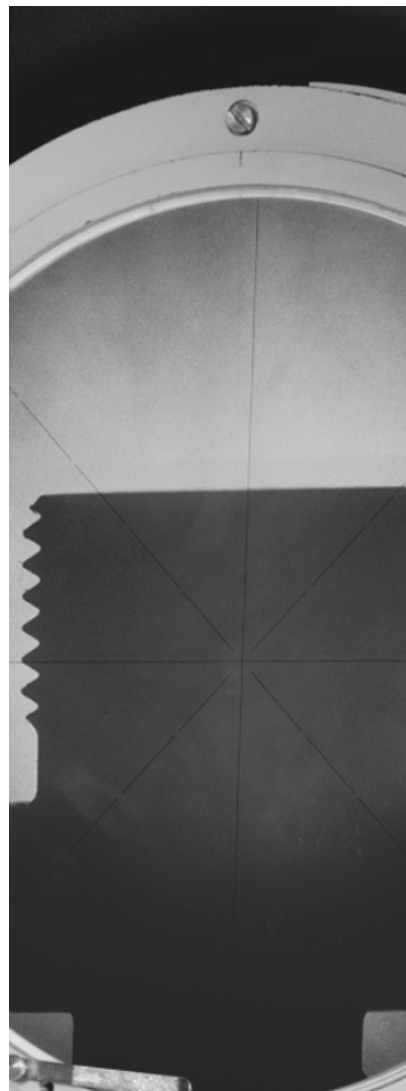
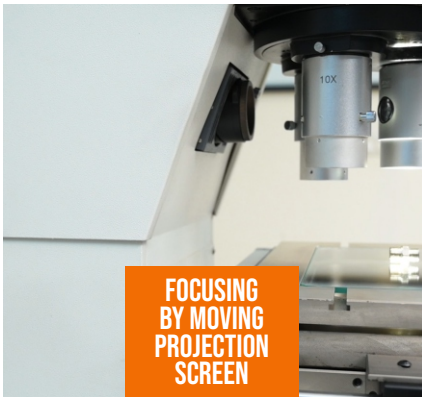


CO-AXIAL PROFILE PROJECTORS



You think
WE MEASURE

WORLD'S MOST ADVANCED PROFILE PROJECTOR



**FOCUSING
BY MOVING
PROJECTION
SCREEN**



**CO-AXIAL
LENSES**



**THREADLESS
WORKSTAGE**



**OUTSTANDING
ILLUMINATION**



SCREEN

Size 300mm diameter

Construction : Vertical Bench Top

Opaque fine grained ground glass screen with 90°,60°,30° cross line,

Location: Above the workstage

Fitted with graduated ring (0-360°) L.C. 1 min, through Digital Counter

Image Type Erect

LIGHT AXIS

Vertical (Surface Light - Coaxial)

OPTICS

Std 10X,20X - Parafoveal optical system

Opt 50X, 100X

Mount 3 lens turret mount

WORKSTAGE SIZE

Std 410mm x 310mm

Opt X Axis upto 550mm, Y axis upto 350mm

WORKPIECE HEIGHT

100mm

MEASURING RANGE

Std 250mm x 150mm

Opt X axis upto 400mm, Y Axis upto 200mm

FOCUSING

Travel 100mm

Method By raising & lowering the optical head

Movement Manual

LINEAR MEASUREMENT

Built in Glass Scale / Linear Encoder

ACCURACY

Projection $\pm 0.1\%$ (Contour / Surface)

Measuring X,Y ($\pm 3 + L/50$) μm

ILLUMINATION

Contour 24V/150W halogen lamp with illumination control with fan cooled system

Surface Twin 24V 150W halogen lamp - On axis vertical to provide coaxial light system with fan cooled system

MEASURING SYSTEM

D.R.O. / Software

RESOLUTION

Linear : 0.001/0.005/0.0005 mm, Angular: 1min

REPEATABILITY

$\pm 0.003\text{mm}$

MOTORIZED MOVEMENT

Optional (X, Y and focusing with speed control)

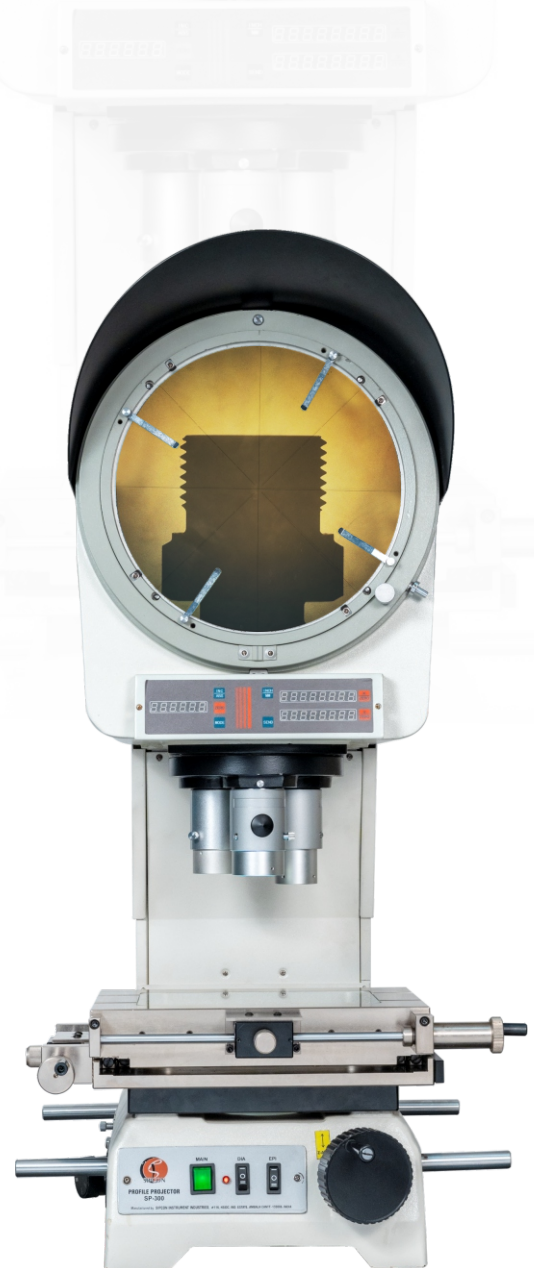
STAND

Unique rigid vibration free handling of component with adjusting feet

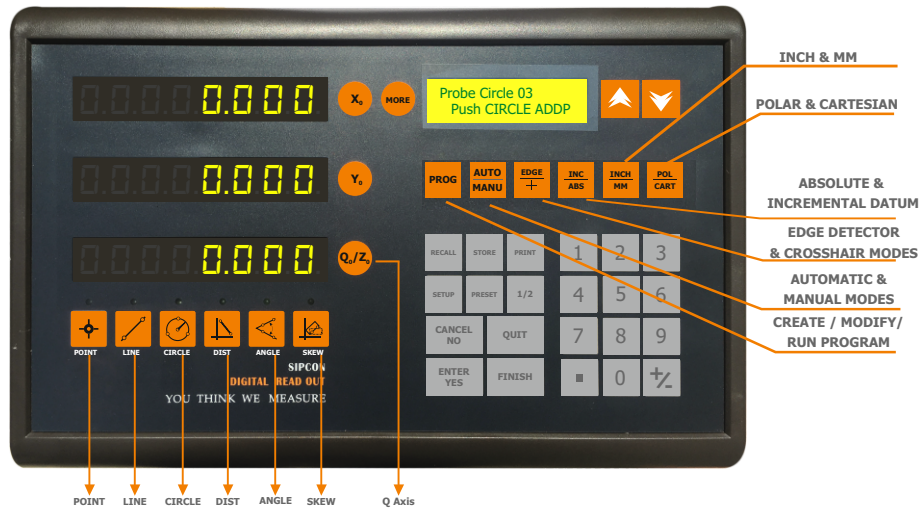
POWER SUPPLY

AC 220-240 V (50/60 Hz) single phase

CO-AXIAL PROFILE PROJECTOR SPN-300

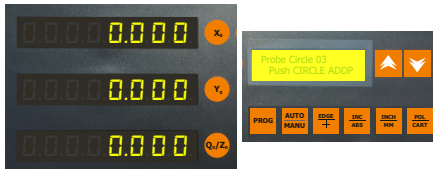


SIPCON DIGITAL READOUT



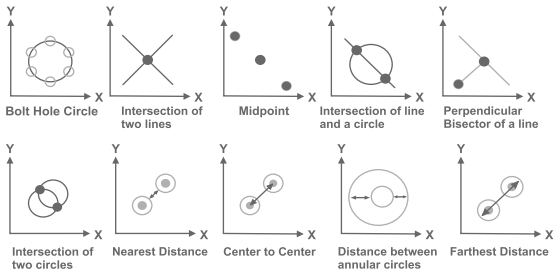
SCREEN DISPLAY

Two screen display ion digital readout provides both D.R.O. view as well as representation of the feature. D.R.O. screen shows the present values of X & Y coordinate axis along with the measurement results and second display will show the selected feature for measurement.

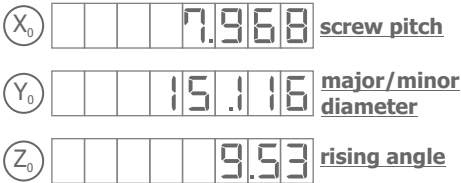


CONSTRUCTION CAPABILITIES

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

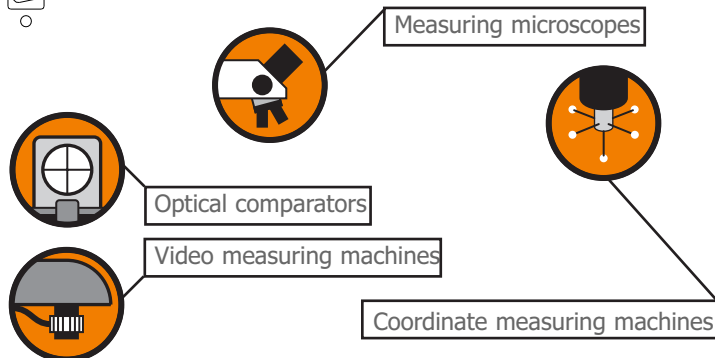


SCREW



DATA MANAGEMENT & OUTPUT

Parallel and serial ports makes it easy to transfer data to PCs, networks and printers.



PART ALIGNMENT & SKEWING

Accurate measurements require the part to be perfectly aligned on the coordinate measuring system. Use the skew function to convert machine coordinates to part coordinates and compensate for part misalignment.

PROGRAMMING

Quickly and easily create, edit and run part programs. Program a measurement sequence once and run it back as often as you need. Measure the same number of points per feature, in the identical sequence part after part.

PRINT OUTPUT

Print measurement results using a thermal printer in an easy to read 40 or 80 column format.

MEASURE EASY

To measure, simply probe points and click. It automatically detects, the feature type being measured. Operators can inspect multiple features without taking their eyes off the art which speeds throughput, improves accuracy and reduces user fatigue.

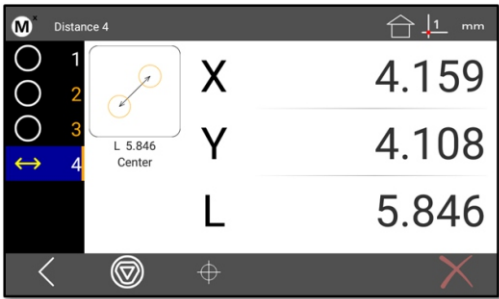
LEC (LINEAR ERROR COMPENSATION)

The SIPCON DRO provides linear error compensation. Each method compensates for encoder and machine travel variations using error correction coefficients developed by comparing actual measurements of a standard to the standard's nominal values.

A SIMPLE & INNOVATIVE READOUT SOLUTION



FOR TODAY'S METROLOGY MARKET PLACE.

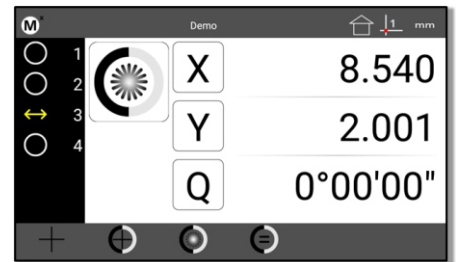


CLEAN, INTUITIVE DESIGN

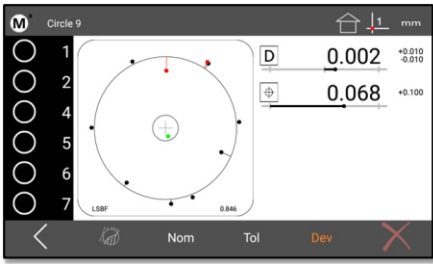
Combining a familiar user experience with current touchscreen conventions, the Mx200 readout can quickly be integrated into your process while being accessible to a wide range of users.

OPTICAL EDGE AND CROSSHAIR PROBES

Available for both Optical Edge and Crosshair only measurement systems the Mx200 probing options are simple and intuitive. The exclusive EdgeLogic™ feature enables gesture driven control of start and end measurement commands, alleviating the need to interact with the DRO directly. Just cross the same edge twice to start and end measurements!



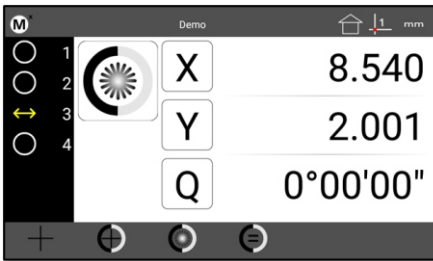
Name	Coef	Nominal	Actual	Tol-	Tol+	Deviation	Tendency
Circle 4	Y	6.198	6.198				
Circle 4	D	13.391	13.391				
Circle 5	X	44.500	44.546	-0.010	0.010	0.046	→
Circle 5	Y	-2.950	-2.947	-0.010	0.010	0.003	→
Circle 5	D	4.500	4.462	-0.010	0.010	-0.038	←
Circle 6	X	46.370	46.370				
Circle 6	Y	8.723	8.723				
Circle 6	D	4.400	4.365	-0.100	0.100	-0.035	←
Circle 7	X	66.866	66.866				
Circle 7	Y	6.616	6.616				
Circle 7	D	4.000	4.000				



GEOMETRIC TOLERANCING & PART PROGRAMMING

Apply popular geometric tolerance controls to measured and constructed features using the industry leading Metlogix tolerance system. Apply nominal and tolerance limits quickly, and view results accurately, in the large and easy to read data views.

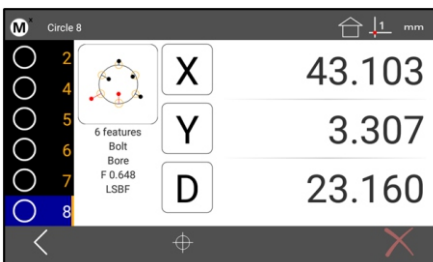
Record inspection routines for simple playback of measurements, tolerance controls, and data handling and printing steps.



OPTICAL EDGE AND CROSSHAIR PROBES

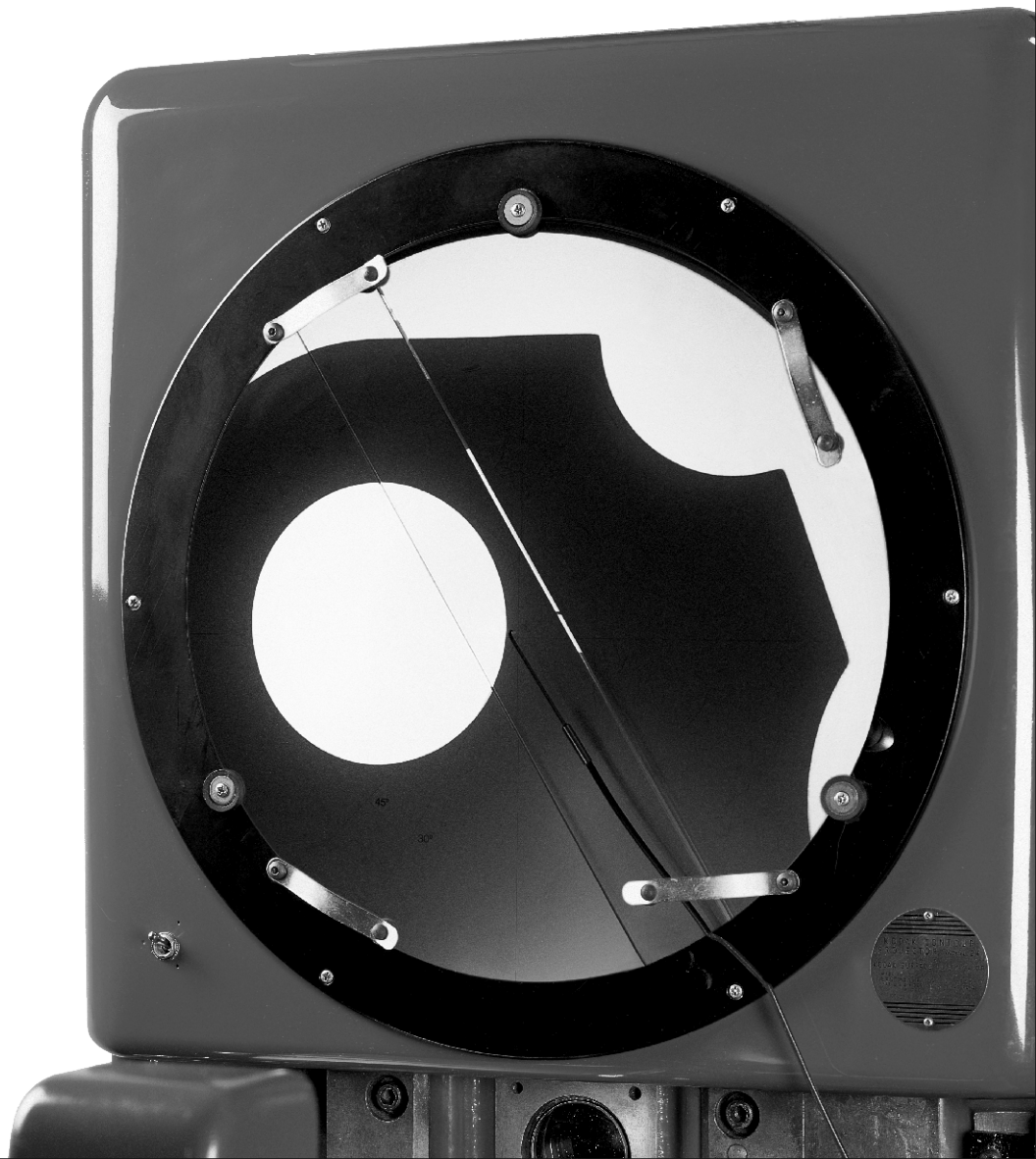
Available for both Optical Edge and Crosshair only measurement systems the Mx200 probing options are simple and intuitive. The exclusive EdgeLogic™ feature enables gesture driven control of start and end measurement commands, alleviating the need to interact with the DRO directly. Just cross the same edge twice to start and end measurements!

FEATURES AND CONSTRUCTIONS



Supporting industry standard feature measurement and popular construction types. Toggle feature construction subtypes quickly with the change feature type button.

- Intersections
- Mid/Center Point
- End Point
- Bolt Circle
- Shortest Distance
- Tangent Line
- Farthest Distance
- Angle Compliments
- Perpendicular Lines
- Gauge Circle/Line



REPORT PRINT EXPORT

Choose from one of three report formats; CSV, Standard, or Tolerance. Report contents can include a report title, time and date stamps, and all feature measurement result data. Reports can be printed as hard copies to standard Windows compatible printers, or exported as PDF or CSV data files.

Export choices include:
Paper Printer(USB, Wifi, Bluetooth), Save to file(USB), RS232 Output

Name	Coef	Nominal	Actual	Tol-	Tol+	Deviation	Tendency
Line 2	Y	22.394	14.312				
Line 2	θ	82°15'44"	73°18'03"				
Point 3	X	0.000	0.000				
Point 3	Y	0.000	0.000				
Circle 4	X	79.960	79.964	-0.002	0.002	0.004	→
Circle 4	Y	36.950	36.948	-0.002	0.002	-0.002	←
Circle 4	D	4.670	4.667	-0.002	0.002	-0.003	←
Circle 5	X	80.490	80.492	-0.010	0.010	0.002	→
Circle 5	Y	47.970	47.965	-0.010	0.010	-0.005	←
Circle 5	D	3.970	3.965	-0.010	0.010	-0.005	←
Circle 6	X	91.179	91.179				

SUPPORT FOR ALL CURRENT "INDUSTRY STANDARD" SOFTWARE STAGE CALIBRATION METHODOLOGIES

Linear Error Correction(LEC), Segmented Linear Correction(SLEC), Non-Linear Error Correction(NLEC), and squareness correction.

WIRELESS DATA TRANSFER

-Transfer measurement data instantly and wirelessly from your Mx200 readout to a networked Windows computer.



SEND DATA QUICKLY AND EASILY

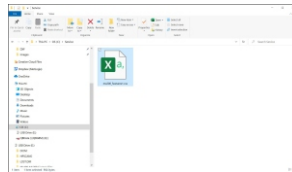
Transfer results files (CSV/TSV) from one or more connected readouts, to a designated folder on the Windows PC. Data received in the MxLink application can also be easily viewed in an individual "tabbed" window.

Name	Coef	Nominal	Actual	Tol-	Tol+	Deviation	Tendency
Point 3	X	0.000	0.000				
Point 3	Y	0.000	0.000				
Circle 4	X	1.000	1.050	-0.100	0.100	0.050	→
Circle 4	Y	1.000	1.060	-0.100	0.100	0.060	→
Circle 4	D	4.998	4.998				
Circle 5	X	2.010	2.010				
Circle 5	Y	2.050	2.050				
Circle 5	D	10.000	10.005	-0.020	0.020	0.005	→
Circle 6	X	5.030	5.030				
Circle 6	Y	10.112	10.112				



Name	Coef	Nominal	Actual	Tol-	Tol+	Deviation	Tendency
Point 3	X	0.000	0.000				
Point 3	Y	0.000	0.000				
Circle 4	X	1.000	1.050	-0.100	0.100	0.050	→
Circle 4	Y	1.000	1.060	-0.100	0.100	0.060	→
Circle 4	D	4.998	4.998				
Circle 5	X	2.010	2.010				
Circle 5	Y	2.050	2.050				
Circle 5	D	10.000	10.005	-0.020	0.020	0.005	→
Circle 6	X	5.030	5.030				
Circle 6	Y	10.112	10.112				

-Data to the MxLink Application.



-Results File to a Windows folder

TRANSFER MXLINK DATA DIRECTLY TO EXCEL

Perform more advanced data calculations by sending data from the Mxlink application directly to Microsoft Excel. Simply press Export to transfer selected MxLink results to a blank Excel sheet.

Name	Coef	Nominal	Actual	Tol-	Tol+	Deviation	Tendency
Point 3	X	0.000	0.000				
Point 3	Y	0.000	0.000				
Circle 4	X	1.000	1.050	-0.100	0.100	0.050	→
Circle 4	Y	1.000	1.060	-0.100	0.100	0.060	→
Circle 4	D	4.998	4.998				
Circle 5	X	2.010	2.010				
Circle 5	Y	2.050	2.050				
Circle 5	D	10.000	10.005	-0.020	0.020	0.005	→
Circle 6	X	5.030	5.030				
Circle 6	Y	10.112	10.112				



Name	Coef	Nominal	Actual	Tol-	Tol+	Deviation	Tendency
Point 3	X	0.000	0.000				
Point 3	Y	0.000	0.000				
Circle 4	X	1.000	1.050	-0.100	0.100	0.050	→
Circle 4	Y	1.000	1.060	-0.100	0.100	0.060	→
Circle 4	D	4.998	4.998				
Circle 5	X	2.010	2.010				
Circle 5	Y	2.050	2.050				
Circle 5	D	10.000	10.005	-0.020	0.020	0.005	→
Circle 6	X	5.030	5.030				
Circle 6	Y	10.112	10.112				

-Press "Export" to send data directly to Microsoft Excel.

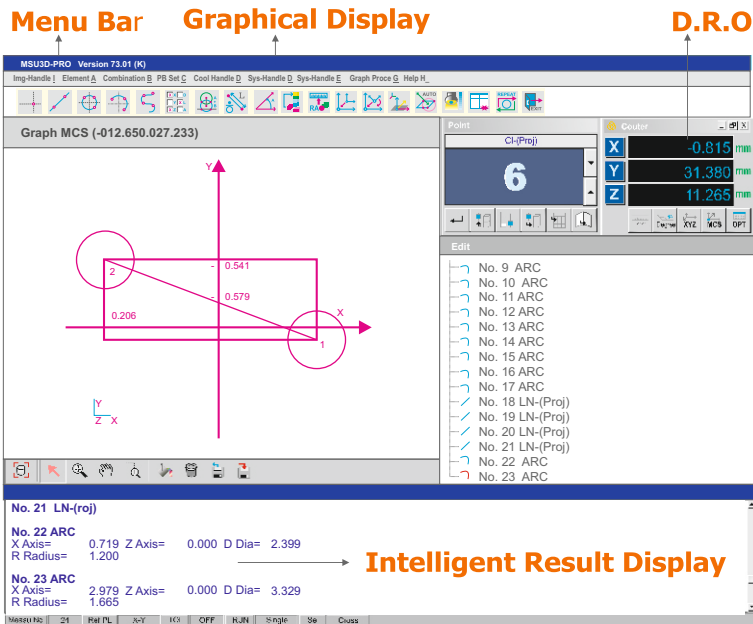


MEASURING SOFTWARE SIPMEAS



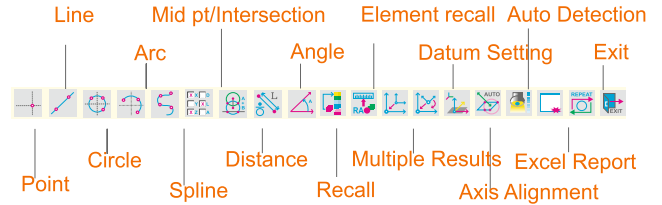
THE MEASURING SOFTWARE PROVIDES A QUICKER EASIER MEASURING METHOD. 2AXIS GEOMETRICAL MEASURING FUNCTIONS, LINK TO EXCEL FULL PART PROGRAMMING CAPABILITY WITH EXCELLENT INTERFACE ALLOW TRANSFER TO CAD."

SOFTWARE DESKTOP



MENU BAR

One touch menu bar for all basic geometric measurements.



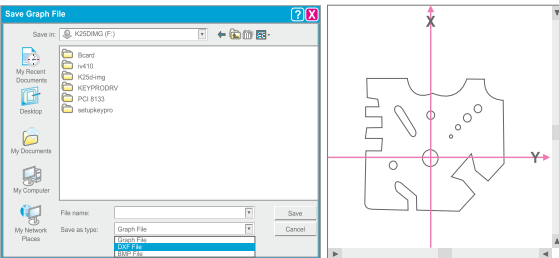
TOLERANCE SETTING & RESULT DISPLAY

Support 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.

Result Display			
No. 21 LN-(Proj)			
X Axis=	0.719	Z Axis=	0.000
R Radius=	1.200	D Dia=	2.399
No. 22 ARC			
X Axis=	2.979	Z Axis=	0.000
R Radius=	1.665	D Dia=	3.329

DATA MANAGEMENT-EXPORT AND CALCULATIONS

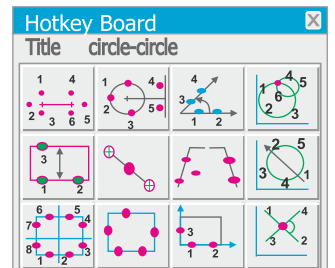
Directly saving graphs as DXF or IGS files makes it possible to export our measurement to CAD and CAM for further editing. For example to measure the distance between the 2 circles in the graph just click the distance button and then click the two circles from the graph. The result is on the screen.



- **INCH/METRIC CONVERSION**
- **UP TO 500 POINTS ALLOWED ON EACH FEATURE**
- **AUTO RECOGNITION** : JUST INPUT THE POINTS IT WILL TELL YOU WHAT FEATURE IS THIS.
- **BOTH CYLINDRICAL & CARTESIAN COORDINATE SYSTEM.**
- **ANGLE DISPLAY IN DEGREE-MIN-SEC OR DECIMAL DEGREE.**

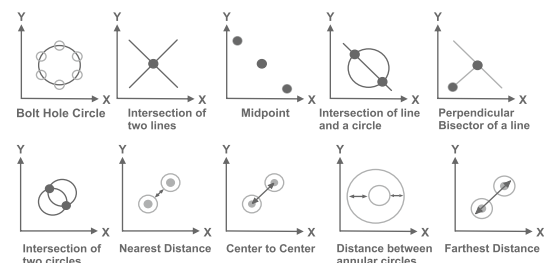
PROGRAM HOTKEY BOARD

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.



CONSTRUCTION CAPABILITIES

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



M2 MEASURING SOLUTION FEATURES

FEATURE MEASUREMENT

2D- Point, Lines, Circles, Arcs
Slots, Rectangles, Blobs
Distances, Angles

REPORTING FORMATS

CSV, European, Tolerance, European 2
User Defined Fully customized

CALIBRATIONS

LEC, SLEC, NLEC

APPLICATIONS

Reverse engineering
In line production
Quality Inspection

CONSTRUCTION CAPABILITIES

2D- Point, Lines, Circles, Arcs
Midpoints, Mid Lines, PCD, Intersection
Bisectors, Offset, Distances, Angles

TOLERANCES

Size, Form, Orientation,
Position, Runout

PROGRAMMING

Measure & program

MEASUREMENT MODES

Polar/Cartesian
DMS/ DD
MM/ INCH

DATUMMING FEATURES

Skew Alignment
Datum (Origin) Points
Reference Axis Rotation & Skew

EXPORTS

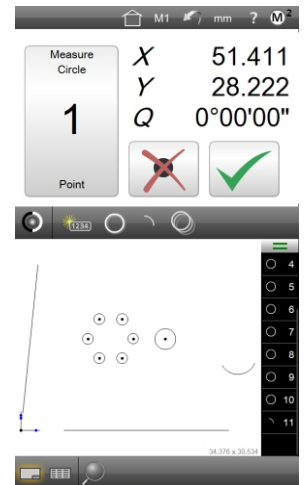
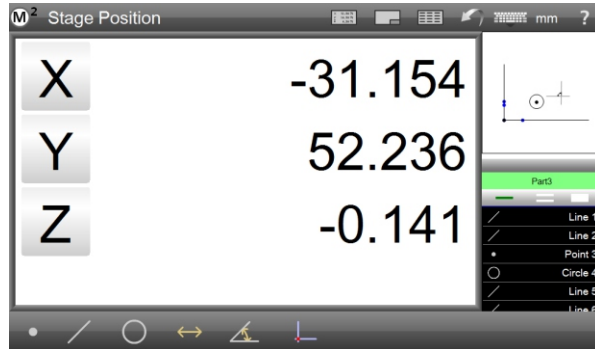
PDF, DXF, Excel, CSV, TSV(Tab)
Data transmit to RS 232 port

SUPPORT FOR OPTICAL EDGE OR CROSSHAIR MEASURING SYSTEMS

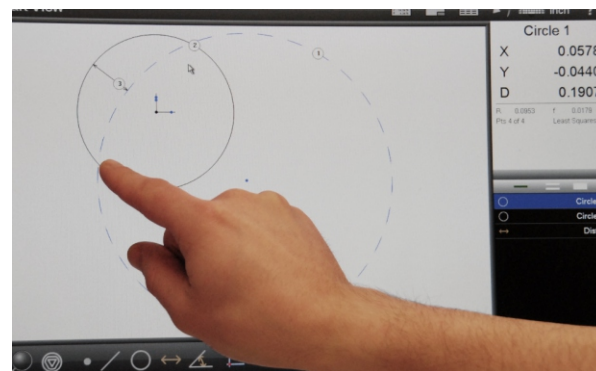
Precise optical edge detection mechanisms provide accurate results as well as access to powerful, industry first, measurement functionality.

CLEAN, INTUITIVE DESIGN-AVAILABLE IN HORIZONTAL OR VERTICAL FORMATS

The user interface design of the M2 software means you'll spend more time measuring and less time reading manuals.

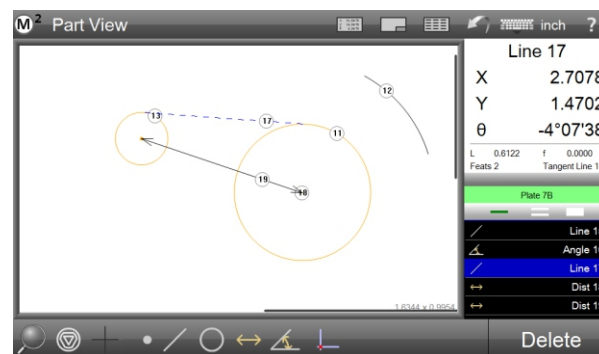


DESIGNED FOR MULTI-TOUCH SOFTWARE CONTROL



In addition to the conventional mouse interface, expanded Multi-Touch logic allows for versatile pan and zoom of the active part view. Increase the efficiency of feature construction, feature data manipulation, and reporting tasks with a simple pinch zoom, swipe pan, or double click.

GRAPHICS-BASED "PART VIEW" CONSTRUCTIONS



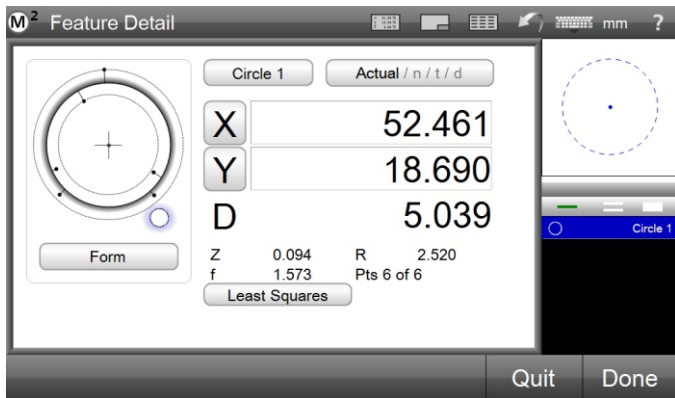
Supported construction types include:

Average Point(s)	Mid/Center End Point(s)
Intersections	Shortest Distance
Farthest Distance	Tangent Line(s)
Gage Circle(s)	Bolt Circle
Angle Compliments	Perpendicular/Parallel Line(s)
Offset	Skew Lines



M2 MEASURING SOLUTION FEATURES

FEATURE DETAIL GRAPHICS



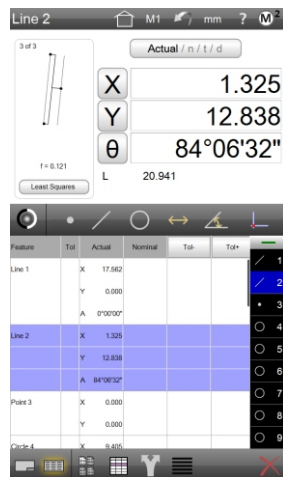
Individual feature views provide informative drawings displaying point cloud distributions, as well as nominal deviations, and tolerance results. Scroll through your measured features list from this view for a feature by feature display of Actual, Nominal, Tolerance, and Deviation results. Set the desired data fit type from the "Actual" screen using the "fit toggle" button.

REPORTS

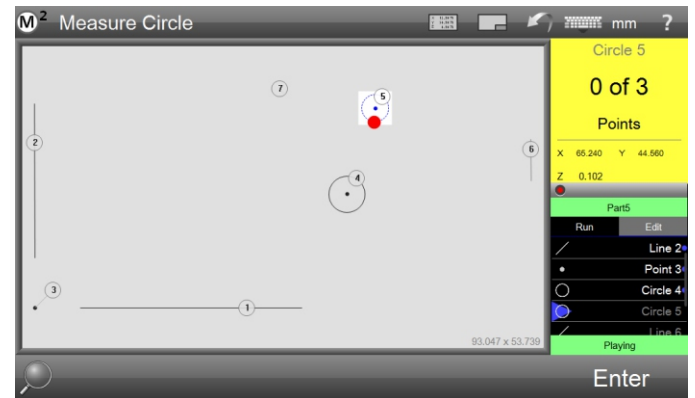
Reports can be fully customized to suit user requirements.

The following customizations are possible:

- Data format
- Header information (Company Name)
- Header and footer graphics (Logo and Page no)
- Add Part view graphics in report
- Add time and date stamps,
- Add operator or part information



PART PROGRAMS AND PLAYBACK



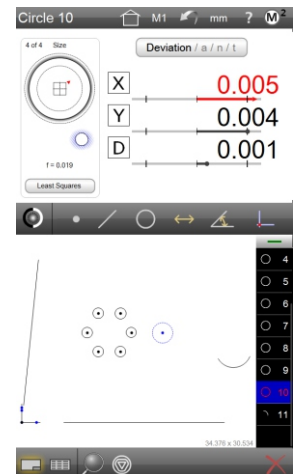
Playback or edit groups of measured, constructed, and created features from a saved part program file. Part program files, when loaded, will prepare the M2 software to repeat a sequence of feature measurement steps, printed reports, and exported measurement data. The playback guidance mechanism provides helpful on-screen instruction for successful playback of your part programs.

GEOMETRIC TOLERANCING

Supported tolerances

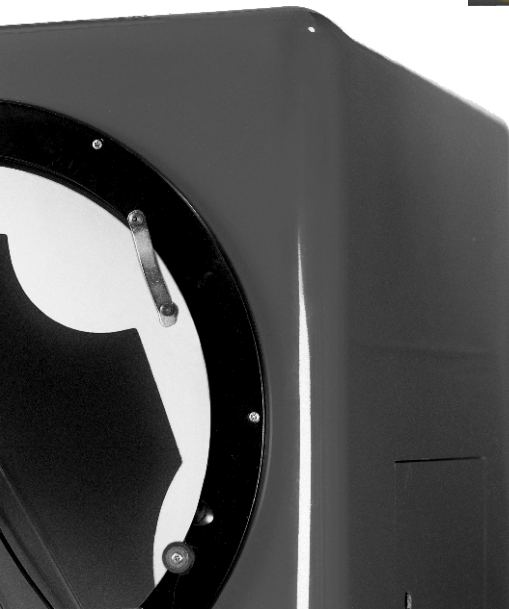
include:

- X/Y/Z Positional,
- Diameter/Radius/Length/Width,
- Size, Theta (Angle) Form,
- Parallelism, Angularity,
- True Position (LMC/MMC Modifiers)
- Straightness,
- Perpendicularity,
- Roundness,
- Concentricity,
- Runout

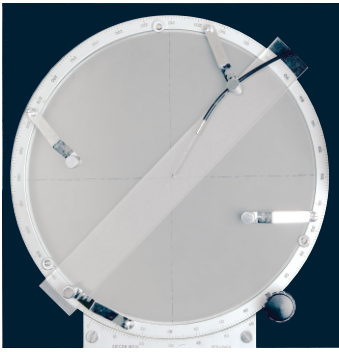


ADVANCED CROSSHAIR PROBE TOOLBOX

For Optical Edge enabled systems, both "simple" and "auto edge" crosshair probes are available. The "auto edge" probe captures points on edges automatically upon crossing. The M2's EdgeLogic™ system (Optical Edge enabled systems only) enables gesture driven control of start and end measurement commands. Start and finish measurements quickly, without the need for direct software interaction.

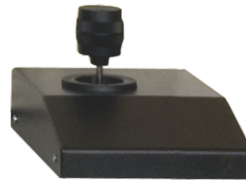


ACCESSORIES



Opto-Edge Sensor

For Automatic Edge Detection
Reduces the operator error
Increases throughput
Available with QC 220, SIPMEAS, QC 5000
Increases the speed of inspection
Highly recommended for CNC Profile Projectors



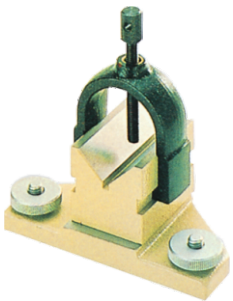
Motorized Controller with Joystick



Fibre Optic Light



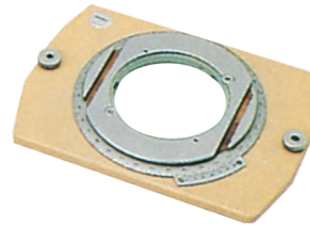
Foot Switch



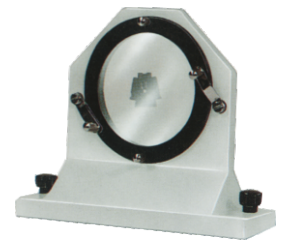
V Block



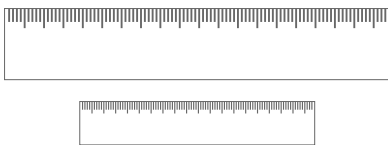
Center Holding Device



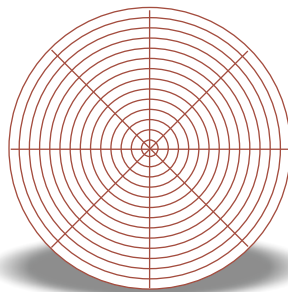
Rotary Table



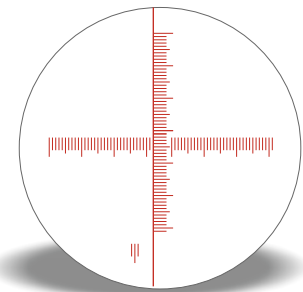
Vertical Holding Device



Calibration Scale

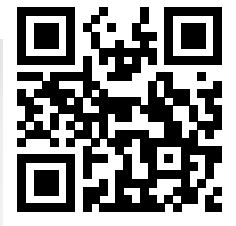


Profile Charts for Comparison



SIPCON INSTRUMENT INDUSTRIES

PLANT1: 116-B HSIDC, Industrial Estate, Ambala Cantt-133001 Haryana-India
PLANT2: Plot No. 280, HSIDC Industrial Estate, Saha-Ambala Haryana-India



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