

MeasurLink® SOFTWARE

Bulletin No. 2096



MeasurLink® is an easy-to-use, Windows-based family of quality data management software applications.

MeasurLink®

An Integrated Solution for Quality Data Management

Most of Mitutoyo's electronic instruments can output data via optional connecting cables or wireless transmitters & receivers in the form of the Digimatic code. The Digimatic code can also be converted into RS-232C format by any of several available gage multiplexers. In this way, digital data can be sent to PCs for data acquisition and advanced statistical analysis.

As a client/server application, MeasurLink gives you the performance you need through distributed processing. Combined with a multi-user relational database, MeasurLink® delivers a safe and organized data warehousing system making quality data available for viewing and

analysis by any member of the production, engineering, and managerial staff throughout your company. Inspection in the factory produces data for analysis, corrective action, and various reporting needs. As the backbone of your quality efforts, MeasurLink® is guaranteed to reduce your production costs and increase your bottom line.

Scalable Network

MeasurLink® is capable of linking and managing multiple "islands" of inspection into a common database of part information, statistical data, gage information, processes, etc. Information is shared across an entire manufacturing facility.

MeasurLink 7 System Requirements

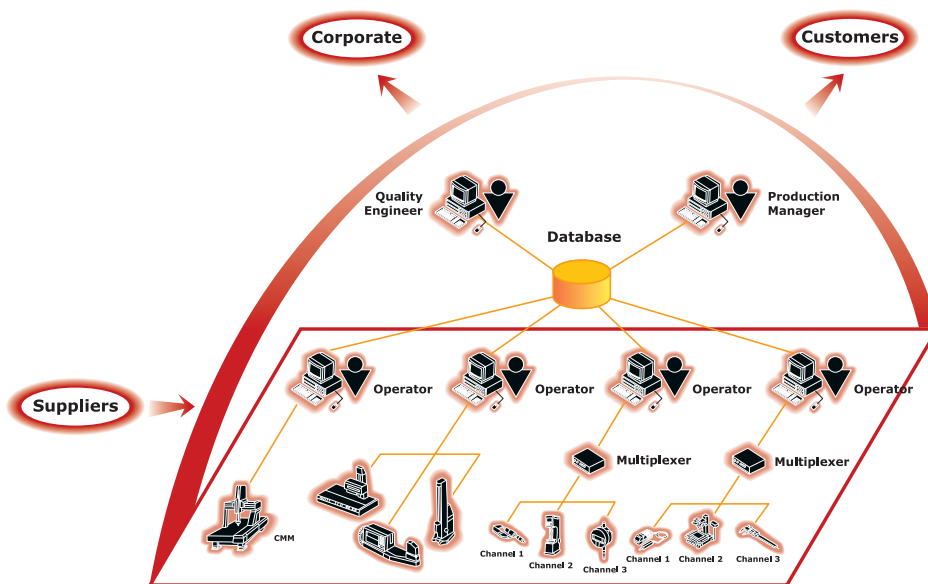
Database Management System (DBMS) Requirements

MeasurLink 7 ships with a copy of Microsoft® SQL Server Express Edition 2008 R2, this can be for a standalone or a workgroup installation. MeasurLink 7 also supports Microsoft® SQL Server 2005 all editions or newer.

Operating System Requirements

All MeasurLink 7 products are supported on the following Microsoft® Windows Operating System versions:

- All Windows® XP SP3 versions
- All Windows® Vista SP2 versions
- All Windows® 7 versions
- Both 32bit and 64bit operating systems supported



The Manufacturing Process with **MeasurLink®**

MeasurLink Suite of Software

MeasurLink is an easy-to-use, Windows-based family of quality data management software applications. MeasurLink combines real-time data acquisition, on-line statistical analysis, integrated networking, and quality information sharing into a comprehensive data management solution.

- **Real-Time**
On-line real-time data collection
- **Process Analyzer**
Analysis of all data
- **Process Manager**
Network monitoring
- **Gage R&R**
Gage repeatability and reproducibility
- **Gage Management**
Gage inventory and calibration control

Note: Upgrade packages are also available. Please contact our sales department for details.

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User-friendly

Click a gage button and watch the charts update in real-time. This helps the operator stay on top of the process. Begin collecting data in minutes with the newly designed Inspection Wizard.

Data acquisition

Collects data from digital micrometers, calipers, indicators, bore gages, etc. Keyboard entry is a snap. Collect data for one or a million parts.

Comprehensive SPC

Easy to use Control Charts, Histograms, Capability, Detailed statistics, Assignable Causes, Corrective Actions, and Traceability all make this software "best in class".

Variable data

Collect dimensional data (length, width, height, outside diameter, inside diameter weight, etc.). Supports derived features (calculations for run out, volume, true position, etc.)

Attribute data

Collect data from visual inspections (burrs, cracks, dents, missing holes, etc.) to determine the fitness of a part. Track failures using a go/no-go style or count the defects on a characteristic to determine if a part is defective. There is complete flexibility to study the individual characteristics and as a group of them, too.

Engineering specifications

Attach drawings to parts, routines or individual characteristics for viewing. Most file formats are supported as an attachment (e.g. Word, PDF, CAD).

Multimedia aids

Attach movies (AVI, MOV, MPG), sound (WAV) and images (BMP, JPG, TIF) to parts, routines or individual characteristics as instructional aides for an operator.

Revision history

Track specification adjustments and preserve historical data.

Mathematically derived features

Full functioning real-time calculator with standard math functions including square root, exponential, trigonometric, sum, average, max, min, calculations.

Part pictures

View scanned blueprints, digital photographs at a glance. On screen guided sequencing keeps the operator moving to the right feature.

Data tests

Full support of Western Electric and Nelson Tests for pattern recognition in control charts (e.g. extreme point, trend, stratification, oscillation, etc.) along with various alerts for each failed test.

Forced assignable cause

Force Assignable Cause Tags on Inspector during collection if process is out of control. Empower operator to build on existing pick list.

Corrective action plans

Operators choose corrective action as applied to the part or process. Multiple corrective actions can be applied to any subgroup. Empower operator to build on existing Corrective Action list.

Sequenced and random gage input

Flexible data input. Collect data by feature, by part or randomly. Guided sequencing minimizes inspection errors.

Time stamped data

All observation data is marked with the data and time from the computer clock.

Flexible reporting

Build report templates with company logos and free form text. Select and position chart types to customer specification.

Mixed variable/attribute data

Mix your dimensions and non-conformances in the same Inspection Routine. Track defects and defectives along with your dimensional data.

Crystal Reports

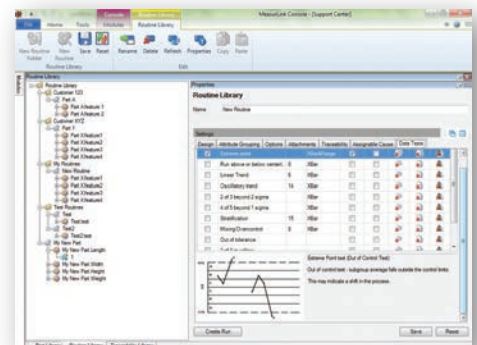
Create your own customized Crystal Reports for use with Part or Run data.

FDA 21CFR Part11 support

Provides support for medical and pharmaceutical manufacturers electronic records, including audit trails, e-signatures (Process Analyzer Professional only) and advanced security.

Inspection wizard

Begin collecting data in 60 seconds with a "Quick Run" by defining features, tolerances and input method.



Easy-to-use MeasurLink® provides to you the most intuitive interface with complete SPC functionality to help you monitor and manage your manufacturing processes. With MeasurLink®, you can easily manage the quality levels of your parts, identify problem areas and apply corrective action to areas in need of attention.

MeasurLink® Real-Time

On-line Real-Time Data Collection

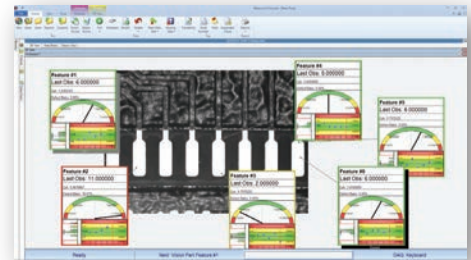
FEATURES

MeasurLink Real-Time performs as a data acquisition clearinghouse by enabling you to connect and acquire data from virtually any measuring device. It supports the full range of metrology technology, including calipers, micrometers, indicators, CMMs, vision systems and more. Select the edition to fit the device and the needs.

Real-Time Standard Edition

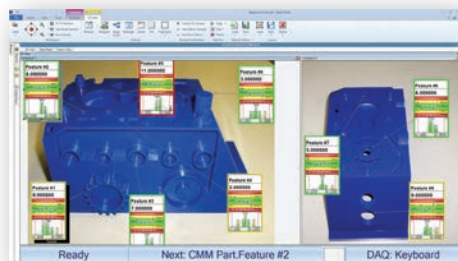
Designed for customers who want to acquire and analyze data in real-time and check variable and attribute inspection to maximize production and minimize defects. It has views to allow the user to create Parts, Characteristics with nominal and tolerance and Traceability lists. The data collection interface provides real-time graphics for Run charts, Control charts, Histograms and Statistics. Standard views include Datasheet (observations and charts), Classic View (chart windows), and 2D view (part images with callouts that include charts and statistical data) along with an especially customizable Info View and additional Manager views. Full reporting template functionality is also provided.

Supported data sources: keyboard, RS232 and USB devices.



SPECIFICATIONS

Order No.	Description
64AAB177	MeasurLink 7 Real-Time Standard Edition



SPECIFICATIONS

Order No.	Description
64AAB178	MeasurLink 7 Real-Time Professional Edition

Real-Time Professional Edition

Enables customers to connect and acquire data from Mitutoyo Coordinate Measuring Machines, Vision and Form Measuring Systems via native integration (DDE). ASCII and QMD (xml-based) file import are also supported. In addition to all of the features supported by **MeasurLink 7 Real-Time Standard Edition**, this application also supports data filters. Full reporting functionality with templates is also provided.

Supported data sources: keyboard, RS232 and USB devices, native Mitutoyo integration (DDE), ASCII and QMD (xml-based) file import.

Import templates

Easily create an import template that maps data in a text file to MeasurLink information. Templates are saved to the database for everyone to use and can be added as data sources to data collection stations. An import template can be verified against the source file without adding data to the system.

Direct data transfer

Collect data into MeasurLink from Mitutoyo capital equipment running Mitutoyo Software that is MeasurLink enabled. This provides a tighter and more robust interface than importing data from files.

Filter data

All data collected within a Real-Time run is related. Often, especially for runs containing a large volume of subgroups, requests are made for subsets of data that are further related from the entire run's population. MeasurLink provides robust filtering capabilities to comply with these requests.

Import data

When set up as a data source, import templates are readily available to the operator, or periodic imports can be executed.

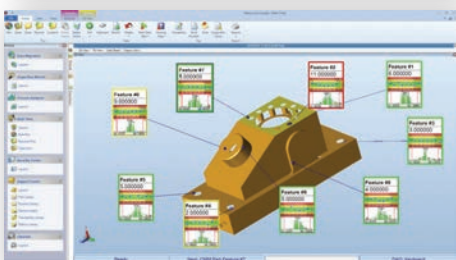


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Real-Time Professional 3D Edition

Designed for customers who wish to collect data using the Hoops 3D graphics view, in addition to all features offered by MeasurLink 7 Real-Time Professional Edition. Hoops 3D files can be exported from most CAD systems and provides the operator with a real view of the part. Camera angle and position can be saved for each characteristic providing for an intuitive prompted guided sequencing for the inspector.

Supported data sources: keyboard, RS232, and USB devices, native Mitutoyo integration (DDE), ASCII and QMD (xml-based) file import.



3D view

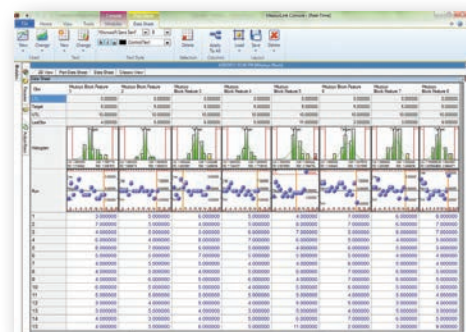
True three-dimensional model support with Hoops streaming files (*.HSF). Export your part's model from Catia, Solidworks or other CAD software and place callouts in the 3D space.

Flexible callout design

Callouts provide part acceptability at a glance. You can design them the same way as for the two-dimensional view to include charts or statistical information with the ability to size any element inside the callout.

Guided sequence

The display can automatically change during data collection to show the next or last observation point, providing a simple guided sequence for the inspection procedure. By saving a different view for each characteristic to be inspected, you can have the model rotate, pan or zoom to show the operator details of the part.



MeasurLink is designed to detect and display patterns and provide additional statistical information. Many patterns can be seen appearing on SPC charts, including:

- Cycles
- Trends
- Freaks
- Mixtures
- Grouping or "bunching" of measurements
- Gradual change in level
- Sudden shift in level
- Instability (abnormally large fluctuations)
- Stratification (abnormally small fluctuations)
- Interactions (two or more variables acting together)
- Systematic variation
- Tendency of one chart to follow another

SPECIFICATIONS

Order No.	Description
64AAB179	MeasurLink 7 Real-Time Professional 3D Edition

Edition Definitions

Function	Real-Time Standard	Real-Time Professional	Real-Time Professional	Process Analyzer Lite	Process Analyzer Professional
	Edition	Edition	3D Edition	Edition	Edition
Classic SPC views	X	X	X	X	X
Datasheet	X	X	X	X	X
2D View	X	X	X	X	X
Manager Views	X	X	X		
Hoops 3D View			X		
Filter		X	X		X
CMM/Vision/Form connectivity		X	X		
Import (ASCII)		X	X		
Audit Trails	X	X	X	X	X
Merge, Copy and Edit Data					X
Scatter Chart					X
Archive Data					X
Electronic Signatures					X

*Note: Upgrade packages are also available.
Please contact our sales department for details.*

MeasurLink® Process Analyzer

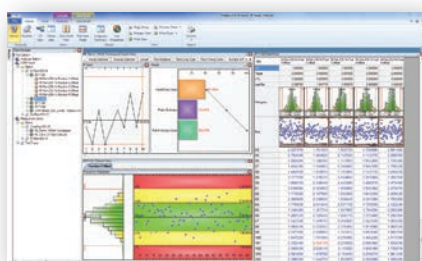
Data Analysis Software for Windows

FEATURES

Process Analyzer is an invaluable tool for your quality team. It gives you the flexibility to analyze your processes, identify problem areas and take corrective action to improve your product's quality. Inspection runs can be sorted by Inspection Station, Routine or Part, and are displayed with the look and feel of the Windows Explorer. Inspection data can be merged, filtered, grouped, charted and printed in the way you want it.

Process Analyzer Lite Edition

Designed for offline viewing of Real-Time data in a networked environment. All views that are available in Real-Time Standard Edition are supported, with the exception of the Manager Views. Full reporting template functionality is also provided.



Review inspection data

Analyze inspection data, view notes and traceability. Open data from different runs to compare the data and process behavior.

Switch between databases

For larger installations that use different databases, the ability to switch the connection allows an engineer to analyze data from all sources.

Tree control navigation

Self organized inspection data provided in an easy to use "navigation tree". Sort data by Station or Inspection Routine, part, year, month or day.

Reporting

Reporting is made easy through the use of a "what you see is what you get" style of template creation that allows you to pick chart and data through drag and drop with resizing. Several standard report templates are provided out of the box.

SPECIFICATIONS

Order No.	Description
64AAB180	MeasurLink 7 Process Analyzer Lite Edition

Process Analyzer Professional Edition

Designed for more robust manipulation of Real-Time data in a networked environment using advanced features not available in MeasurLink Process Analyzer Lite Edition. It enables Quality Engineering to slice and dice data in meaningful ways that contribute to quality control initiatives. For larger installations that use different databases, the ability to switch the connection allows an engineer to analyze data from all sources.



Group, Search and Sort data

View data by part, routine, station, year, month, day. Apply saved filters to data and search for specific traceability or serial number criteria.

Merge Data

Combine lot based or just in time collected data to get a bigger picture of process variation and production quality.

Scatter Plots

Perform correlation studies to identify process interactions.

Electronic Signatures

The e-signatures can be applied to runs only in Process Analyzer Professional. When combined with Audit Trails available in Real-Time, and security is implemented, then MeasurLink provides support for FDA requirements for the Medical and Pharmaceutical Manufacturers.

SPECIFICATIONS

Order No.	Description
64AAB181	MeasurLink 7 Process Analyzer Professional Edition

MeasurLink Group Licensing

Order No.	Description
64AAB184	MeasurLink 7 Site License

MeasurLink 7 Site License is a bundle package that provides the customer with the ability to install up to and including 30 copies (mixed and matched) of any applications in the MeasurLink 7 suite.

Order No.	Description
64AAB185	MeasurLink 7 Workgroup License

MeasurLink 7 Workgroup License is a bundle package that provides the customer with the ability to install up to and including 15 copies (mixed and matched) of any applications in the MeasurLink 7 suite.

Order No.	Description
64AAB263	MeasurLink 7 Workgroup License – 10 Pack

MeasurLink 7 Workgroup License – 10 Pack is a bundle package that provides the customer with the ability to install up to and including 10 copies (mixed and matched) of any applications in the MeasurLink 7 suite.

Order No.	Description
64AAB264	MeasurLink 7 Workgroup License – 5Pack

MeasurLink 7 Workgroup License – 5 Pack is a bundle package that provides the customer with the ability to install up to and including 5 copies (mixed and matched) of any applications in the MeasurLink 7 suite.

Order No.	Description
64AAB265	MeasurLink 7 Academic License

MeasurLink 7 Academic License a bundle package that provides Universities and Technical Colleges with the ability to install up to and including 20 copies (mixed and matched) of any applications in the MeasurLink 7 suite for educational purposes.

MeasurLink® Process Manager

Network Monitoring Software for Windows

FEATURES

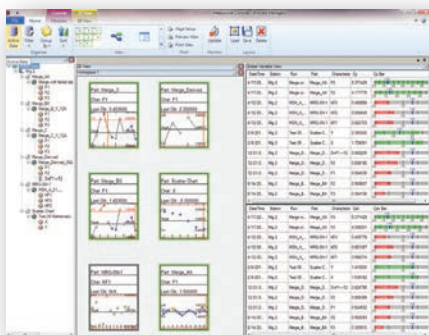
Real-time monitoring of data as it is collected. Provides the QC/Production Manager with the perfect tool to organize and maintain a shop-wide quality program at a glance.

Process Manager Standard Edition

Process Manager provides a method to audit the entire shop floor inspection activity from a single PC. Easily see process information without walking from one inspection area to another by viewing current production across all machines. Show clients your quality operation for the entire facility.

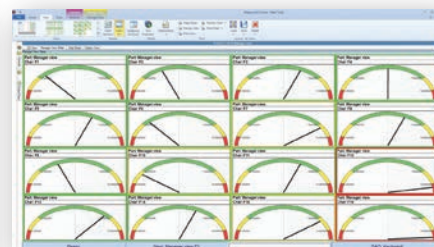
The Quality Control personnel can choose to display only specific stations, parts, routines or even critical characteristics that they are responsible for. Establish Cpk thresholds for acceptability. Drill down for details on certain traceability, assignable cause, failed tests or serial numbers.

Various alerts are provided to recognize and stay up to the minute on production problems. Display the easy to read charts and detailed statistics.



SPECIFICATIONS

Order No.	Description
64AAB182	MeasurLink 7 Process Manager Standard Edition



MeasurLink Process Manager displays snapshot windows of characteristics that are currently being collected in MeasurLink Real-Time. The data can be sorted by Station, Process, Capability or Timestamp.

MeasurLink® Gage R&R

Measurement Systems Analysis

FEATURES

Determines the repeatability and reproducibility, linearity, bias, and stability of inspection systems allowing you to isolate gauging problems.

Gage R&R

A Microsoft® Windows®-based Gage R&R software designed to the AIAG (Automotive Industry Action Group) Measurement System Analysis standard (MSA3) for ISO/ TS16949.

This software supports up to 25 appraisers per study, 25 trials per appraiser and 25 parts per trial. Each study supports a Gage ID, Gage type, Serial Number, Note, etc. A full search engine is available. This product is also integrated with MeasurLink Gage Management for recall and reporting purposes.

MeasurLink Gage R&R works with virtually any gage or inspection system.

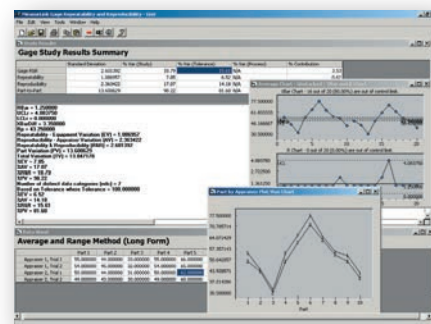
- Supports the following AIAG study methods:
 - 1) Range method.
 - 2) Average and range method.
 - 3) Average and range method including within part variation.
 - 4) Analysis of variance method.

- 5) Short method for attribute gages.
 - 6) Bias study.
 - 7) Linearity study.
 - 8) Stability study.
- Input methods include: keyboard entry, direct gage input and text import.
 - Builds a gage inventory and records your R&R study efforts.
 - Generates reports that your customers will respect and value.

Provides graphical interpretation of appraiser consistency.

SPECIFICATIONS

Order No.	Description
64AAS941D	MeasurLink Gage R&R 6



In addition to the standard calculations this software also provides graphical tools for analysis of the measurement system. The Xbar and R chart can show whether there is adequate gage discrimination to record part to part variation in production and if operators are self-consistent. The Part-by-Appraiser plot can show if there is a lack of consistency between operator inspection techniques.

MeasurLink® Gage Management

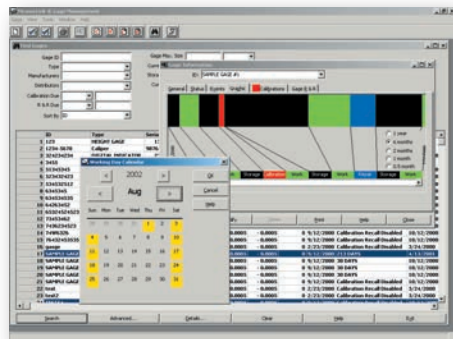
Gage Inventory and Calibration Control

FEATURES

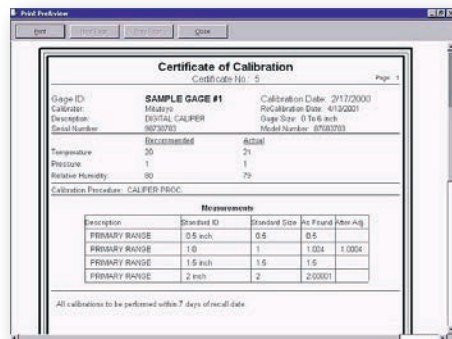
Gage Management is essential for monitoring the calibration history of a gage. Periodic adjustments may be required to bring a gage into specification.

Gage Management

A Microsoft® Windows®-based gage calibration tracking software. It is networkable and shares the same database used by the rest of the MeasurLink® software family. This assists users in developing, maintaining, organizing, and managing information about their gages. Information such as gage in-service dates, calibration recall dates, gage R&R dates and general gage event history is provided in an intuitive interface with complete reporting abilities. MeasurLink® Gage Management also supports the creation of vendor contact and user lists. It comes equipped with a "smart" calendar that allows you to define working days. Calibration procedure setup is easy and incremental response methods help to achieve optimal calibration frequencies. Customized gage label printing is supported.



MeasurLink Gage Management allows customers to build a complete gage (and fixture) inventory. Calibration procedures are established using a sequence of Standards. These procedures are associated with Gage IDs and are used when performing "in-house" calibration.



Calibration is made simple by supporting digital gages. Attribute gage calibration can be performed using any digital gage. Certificates of calibration can be printed for archiving or for distribution by calibration labs.

SPECIFICATIONS

Order No.	Description
64AA5007D	MeasurLink Gage Management 6

Note: All information regarding our products, and in particular the illustrations, drawings, dimensional and performance data contained in this printed matter as well as other technical data are to be regarded as approximate average values. We therefore reserve the right to make changes to the corresponding designs. The stated standards, similar technical regulations, descriptions and illustrations of the products were valid at the time of printing. In addition, the latest applicable version of our General Trading Conditions will apply. Only quotations submitted by ourselves may be regarded as definitive. Specifications are subject to change without notice.

Mitutoyo products are subject to US Export Administration Regulations (EAR). Re-export or relocation of our products may require prior approval by an appropriate governing authority.

Trademarks and Registrations

Designations used by companies to distinguish their products are often claimed as trademarks. In all instances where Mitutoyo America Corporation is aware of a claim, the product names appear in initial capital or all capital letters. The appropriate companies should be contacted for more complete trademark and registration information.



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Coordinate Measuring Machines

Vision Measuring Systems

Form Measurement

Optical Measuring

Sensor Systems

Testing Equipment and
Seismometer

Digital Scale and DRO Systems

Small Tool Instruments and
Data Management

Mitutoyo America Corporation

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1-888-MITUTOYO (1-888-648-8869)

M³ Solution Centers

Aurora, Illinois
(Corporate Headquarters)

Westford, Massachusetts

Huntersville, North Carolina

Mason, Ohio

Plymouth, Michigan

City of Industry, California

Birmingham, Alabama

Mitutoyo

Precision is our Profession