Analysis Software

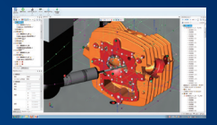
MiCAT Planner

MiCAT Planner is Mitutoyo's latest software development for fast and efficient CMM part programming. Operation of MiCAT Planner is easy and intuitive. Programs are made with a few mouse clicks in minutes instead of hours or days.

WORKFLOW:
1) Load design model
2) Select CMM system configuration
3) Part placement via virtual alignment
4) Measurement program
5) Generate MCOSMOS Geopak part program

In order to generate a measurement plan, GD&T information attached to the 3D Design Model is needed. Design Model formats marked "w/PMI" will read GD&T information created in the CAD system and stored in the Design Model file. Design Model formats without PMI can be annotated with GD&T in MiCAT Planner.

Design Model Support:
- Siemens NX w/PMI
- CATIA V5 w/PMI
- CREO (PRO/E) w/PMI
- SOLIDWORKS w/PMI
- ACIS (SAT)
- STEP (SAT)

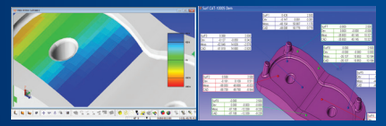


MCOSMOS

Mitutoyo Controlled Open Systems for Modular Operation Support

MCOSMOS has three choices of module configuration. From the basic MCOSMOS-1 to the advanced MCOSMOS-3, choose a configuration for your measurement applications.

Geopak (Basic geometry module) Provides an easy graphical console to the operator by the use of tool bars and windows which can be personalized to the operator's preference. Its graphically enhanced display provides step-by-step, on-screen wizards that prompt the operator, allowing even first-time users to create routines to measure parts.



CAT1000P significantly facilitates the programming of measurement tasks during the GEOPAK learn mode. All data for measuring parts and tolerance evaluations are taken accurately from the CAD model via pointing device (mouse, trackball, etc.) selection. The same principles apply for programming probe paths (clearance and measurement), while at the same time, using the nominal directly off the CAD model for tolerance comparison.

MCOSMOS Coordinate Measuring Machine Software			
	CNC		
	MCOSMOS-1	MCOSMOS-2	MCOSMOS-3
GEOPAK	●	●	●
CAT1000P	▲	●	●
CAT1000S	▲	●	●
Scanpak	▲	▲	●
Gearpak	▲	▲	▲
MAFIS*	▲	▲	▲

● Standard ▲ Option — Not supported * Requires Scanpak

MSURF

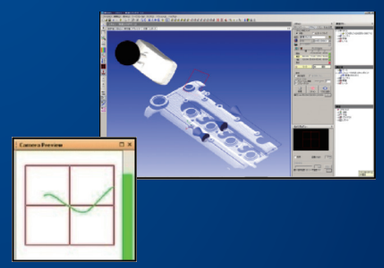
MSURF software enables users to perform operations from measurement to evaluation on the same platform with the non-contact line laser probe, SurfaceMeasure, is used. Three types of software are provided according to the task:

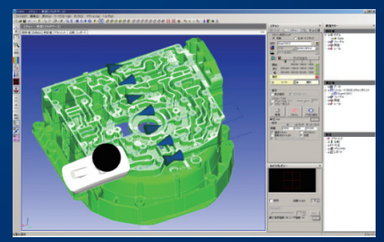
MSURF-S: Calculates point cloud data measured by a CNC CMM with SurfaceMeasure. Generates scanning paths by defining the scanning start position, length and width.

MSURF-I: Conducts analysis or comparison verification of measured point cloud data in reference to nominal data (supporting CAD data import).

MSURF-PLANNER: Creates measurement macros (surface form, feature form) for the line laser probe from 3D CAD data. Optimized data (travel path, number of probe head revolutions, etc.) of a measurement.

Design Model Support:
- STEP (included)
- SAT (included)
- IGES (option)
- Siemens NX (option)
- CATIA V4 (option)
- CATIA V5 (option)
- CREO (option)
- Parasolids (option)
- SOLIDWORKS (option)
- VDAFS (option)

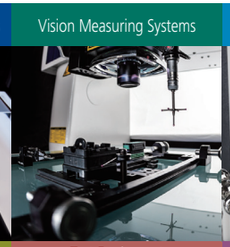


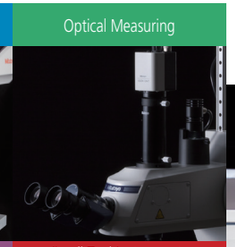


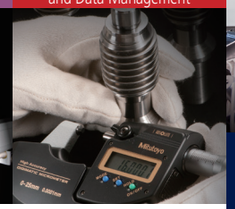
Packages are valued at up to $20,000 and bundled at our base machine price.
To learn more visit MITUTOYO.COM/GETGOLD

Included in the Gold Care Program:
- A Second Year Extended Warranty
- A Five-year Extended Warranty for Manual CMMs
- Five-year Software Technical Phone Support
- One seat at Mitutoyo Institute of Metrology Class
- MeasurLink® Pro Edition Quality Data Management Software*
- MITUTOYO Eco-Fix® or Opti-Fix® Starter Fixture Kit
- MITUTOYO Starter Stylus Kit (Included with Touch Probe Machines)

Qualifying machines include CRYSTA APEX S 500/700/900/1200, CRYSTA-PLUS MANUAL 500/700, QV-APEX 302/404/606 and QV-APEX 302TP/404TP/606TP







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Mitutoyo

Introducing Mitutoyo's Full Line of Coordinate Measuring Machines

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Coordinate Measuring Machines

Standard CNC

CRYSTA-Apex V 500/700/900

The higher accuracy specification of the CRYSTA-Apex V gives it more than double the effective measuring range in terms of accuracy-guarantee capability.

Axis	544	574	776	7106	9106 [9108]	9166 [9168]	9206 [9208]
X	19.68″		27.55″		35.43″		
Y	15.74″	27.55″		39.36″		62.99″	78.73″
Z	15.74″		23.62″		23.62″[31.49″]		

Accuracy starting at: (1.7 + 3L/1000) µm

CRYSTA-Apex V 1200/1600/2000

Axis	121210	122010	123010	162012 [162016]	163012 [163016]	164012 [164016]
X	47.24″		47.24″	62.99″		
Y	47.24″	78.73″	118.10″	78.73″	118.10″	157.47″
Z	39.36″		39.36″	47.24″ [62.99″]		

Axis	203016	204016
X	78.73″	
Y	118.10″	157.47″
Z	62.99″	

Accuracy starting at: (2.3 + 3L/1000) µm

Gold Care available for 121210 & 122010

High Accuracy

STRATO-Apex

The STRATO-Apex series guarantees high accuracy. High acceleration is achieved with improved rigid air bearings on all axial guideways. The scale systems on Mitutoyo high-precision models utilize a high-performance linear encoder for detecting axis position.

Axis	574	776	7106	9106	9166	162012 [162016]	163012 [163016]
X	19.68″	27.55″	27.55″	35.43″	35.43″	62.99″	62.99″
Y	27.55″	27.55″	39.36″	39.36″	62.99″	78.73″	118.10″
Z	15.74″	23.62″	23.62″	23.62″	23.62″	47.24″[62.99″]	

Accuracy starting at: (0.7 + 2.5L/1000) µm

Active Dampening

Ultra-high Accuracy

LEGEX

All LEGEX Ultra-accuracy series CMMs are equipped with temperature compensation and anti-vibration isolators. Accuracy is guaranteed within the range of 18 to 22°C and 19 to 21°C.

Axis	574	774	776	9106
X	19.68″	27.55″		35.43″
Y	27.55″			39.36″
Z	15.74″		23.62″	

Accuracy starting at: (0.28 + L/1000) µm

LEGEX 574

LEGEX 9106

5-Axis CNC

CRYSTA-Apex EX R (REVO)

Advanced CNC CMMs equipped with the REVO-2 probe head and a choice of probes to create a range of standard 5-axis measuring machines.

Axis	EX121210R	X122010R	EX123010R
X	47.24″		
Y	47.24″	78.73″	118.10″
Z	39.36″		

Accuracy starting at: (2.9 + 4L/1000) µm

Smooth 5-axis control drastically reduces measurement time (typically 40-65%) for probe rotation.

Inline CNC

MACH

The MACH-3A and MACH-V maximize machining operations by performing in-line or near-line high-speed coordinate measuring in conjunction with your CNC machine tools. MACH Ko-ga-me is a compact, 3D CNC measuring system. Use for stand-alone applications or integrate into cells.

Axis	Ko-ga-me	3A 653	V9106
X	4.72″	23.62″	35.43″
Y	4.72″	19.68″	39.36″
Z	3.14″	11.02″	23.62″

Accuracy starting at: (2.2 + 3.5L/1000) µm

MACH Ko-ga-me

MACH-3A 653

MACH-V9106

Shop Floor CNC

MiSTAR 555

Allows shop-floor operators to easily perform measurement with the touch panel and application-specific software tools.
Simple operation is supported QuickLauncher with touch panel, or bar code reader (optional). Easily fixture workpieces using MiSTAR fixture kits (optional).

Axis	MiSTAR 555
X	19.68"
Y	19.68″
Z	19.68″

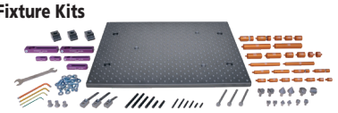
Accuracy starting at: (2.2 + 3.0L/1000) µm

eco-fix pallet reciever Kit S

MiSTAR 555

Accessories

Fixture Kits



The entry-level Mitutoyo Eco-Fix Kit S version is comprised of a 250mm x 250mm base plate footprint and 59 total components in the system. The Eco-Fix Kit L is a larger version and built for more complex part fixturing applications (measuring 500mm x 400mm in base plate footprint and a total of 98 total components in the system).

Styli Kits

BASIC 1 - K651377

BASIC 2 - K651354

Sensors

TP7
The TP7M is a high-accuracy touch-trigger probe with a maximum repeatability of 2σ ≤0.25µm. The TP7M can mount a long stylus up to 150mm.

SP25
The SP25M is comprised of two sensors in a single housing. Users can switch between a choice of five scanning modules (which can carry M3 styli with lengths from 20 mm to 400 mm) and an adaptor module that is compatible with Renishaw's TP20 range of probe modules.

PH20
The 5-axis operation reduces time required for probe rotational moves and allows more flexible positioning. This also ensures easy access to workpieces and saves time during programming and measurement.

REVO
High speed 5-axis scanning (max. 500mm/s) surpasses 3-axis control, supporting high-speed sampling of up to 4,000 points/sec and allowing data acquisition of measurement points during high-speed scanning.

SurfaceMeasure 1110
Non-contact laser probes automatically adjust the laser intensity and camera sensitivity for environment and workpiece material. The laser system can be utilized in prototyping and production.

QVP
The QVP probe performs form measurement by image processing micro geometry that cannot be measured by a contact-type probe or flexible bodies that are easily deformed by slight measuring forces.

SurfTest
The SurfTest probe allows the CMM to take surface finish measurements using the PH10M autojoint probe head, allowing the probe to be changed from the ACR3 change rack. This streamlines the measuring process.

Change Racks

ACR3
The ACR3 provides a passive means to automatically exchange probes without the need for requalification. The ACR3 uses an autojoint connector to attach probes and extensions to the PH10M PLUS and PH10MQ PLUS. The ACR3 is a four port unit where two can be linked together allowing eight different probes or extensions to be stored in the rack providing more capability.

FCR25
FCR25 racks are for automated changing of SP25M scanning and touch-trigger modules. A range of module changing systems allows any of the SP25M system elements to be stored in each port.

MCR20
MCR20 module changing rack is designed to securely store up to six probe modules for automatic changing. (for TP20 modules)

SCR200
The SCR200 provides automatic, high-speed changing between up to six TP200 stylus modules.

Mitutoyo