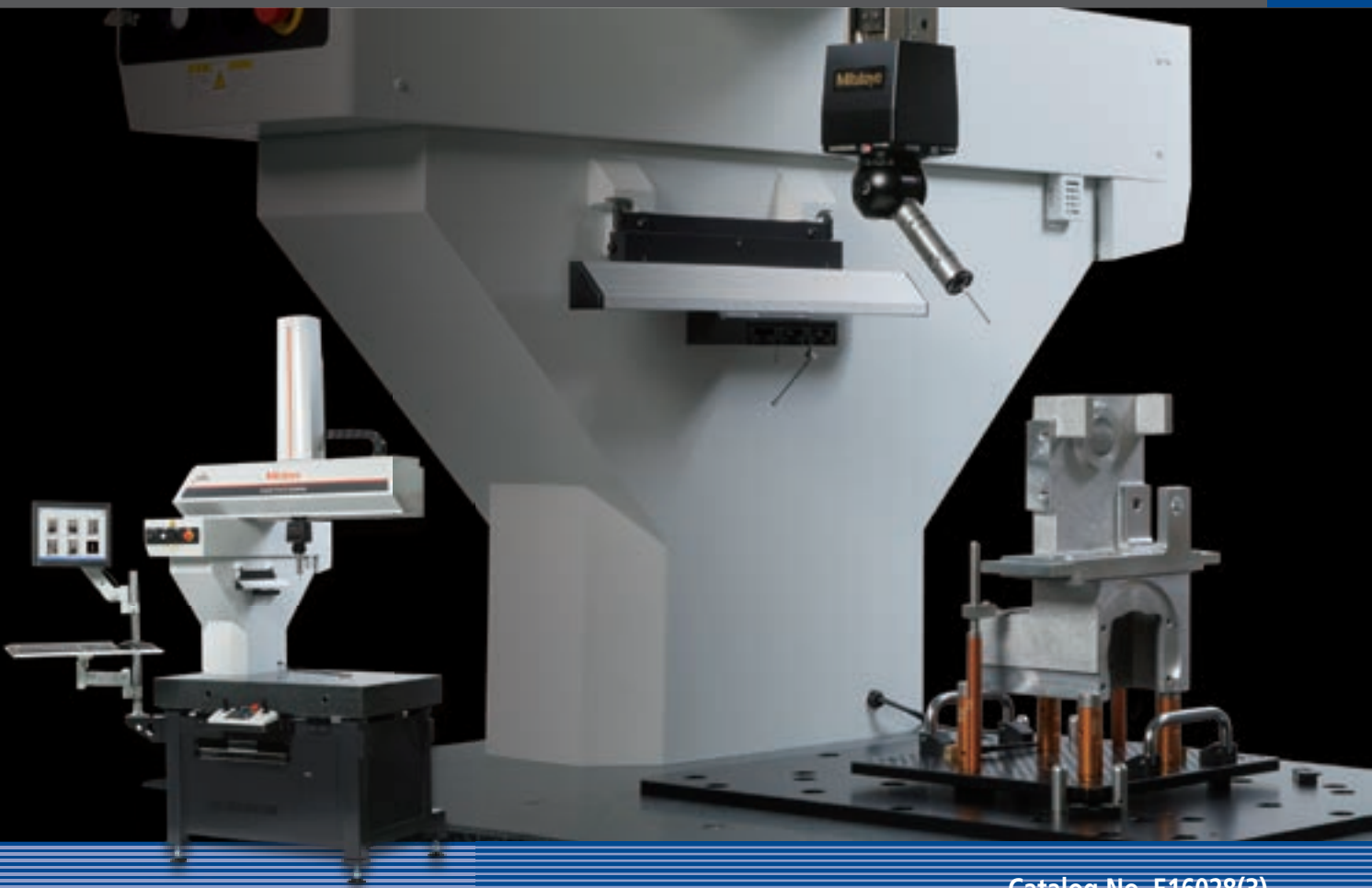


Mitutoyo

Mitutoyo Quality

Shop-floor Type CNC Coordinate Measuring Machine MiSTAR 555

Coordinate Measuring Machines



Catalog No. E16028(3)

Next-generation Coordinate Measuring Machine for Shop floor

MiSTAR 555

Highly Environment-resistant Coordinate Measuring Machine,
Allowing On-site Inspection outside the Measuring Room.

MiSTAR 555 is a CNC coordinate measuring machine conceived to be a “measuring machine for any environment”. Wide accuracy-guaranteed temperature range, environment-resistant absolute scale, and all-in-one space-saving design.

With performance that sets it apart from conventional coordinate measuring machines, MiSTAR 555 will help boost your productivity.



See video from here

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MiSTAR 555

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Environment

A large, industrial-grade coordinate measuring machine (CMM) is shown in a dark, industrial setting. The machine is white with black and red accents. The brand name 'Mitutoyo' is visible in red on the side of the machine. The model name 'MiSTAR 555' is printed in black on a white panel. A probe is attached to the machine's arm, and a workpiece is mounted on the table. The machine is labeled 'SMS' and 'MiSTAR 555'.

Making measurements in harsh shop floor environments possible.

With an environment-resistant absolute scale^{*1} and revamped body structure, MiSTAR 555 is a contamination-resistant coordinate measuring machine. Highly reliable as a result of real-time temperature compensation technology that guarantees accuracy over a wide temperature range, it delivers a length measurement error of $E_{0, MPE} (2.2 + 3L/1000) \mu\text{m}^{*2}$.

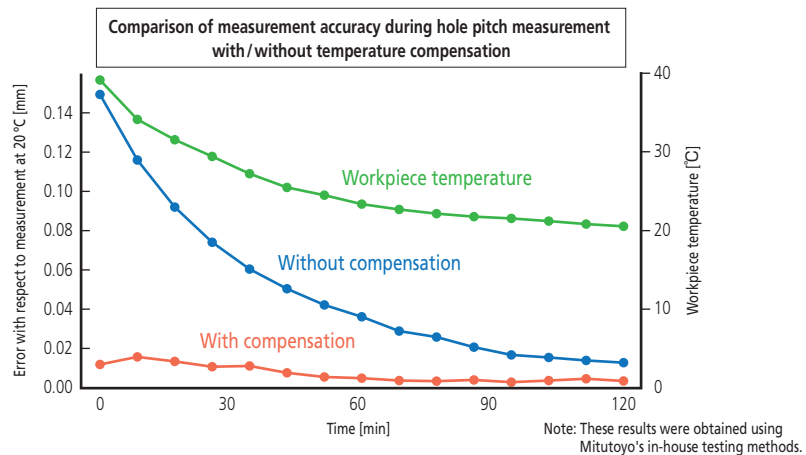
MiSTAR 555 can be installed and operated next to machine tools on production lines.

^{*1} Absolute-type, linear scale that provides an absolute value for each measurement point.
Allows for reading of the position value straight after power on, without any setup.

^{*2} When used with SP25M in temperature environment 1 (18 °C to 22 °C).

Wide accuracy-guaranteed temperature range

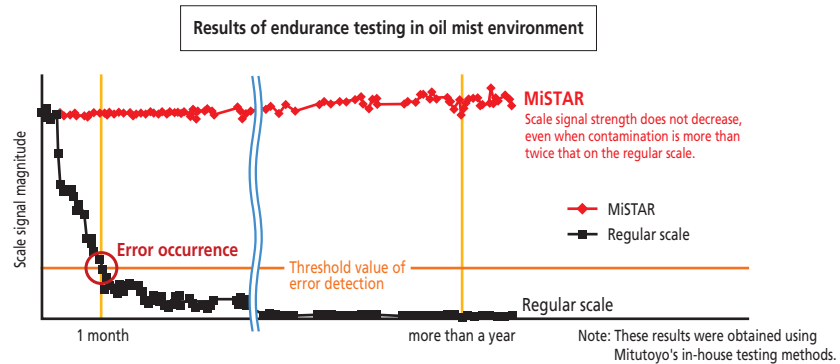
The accuracy-guaranteed temperature range of 10 °C to 40 °C is achieved as a result of body architecture designed with temperature trackability in mind. The real-time workpiece temperature compensation makes temperature stabilization unnecessary, allowing for installation in a wider range of temperatures than is usual for a CMM.



A Coordinate measuring machine resistant to contamination

A newly developed environment-resistant absolute scale having more than twice (in-house comparison) the contamination resistance of conventional models has been adopted, together with linear guides on the moving elements. Conventional air bearings require a clean environment and pressurized air to avoid “galling” and “clogging”. However, the linear guides not only make pressurized air unnecessary, but also improve robustness as a result of increased environment resistance.

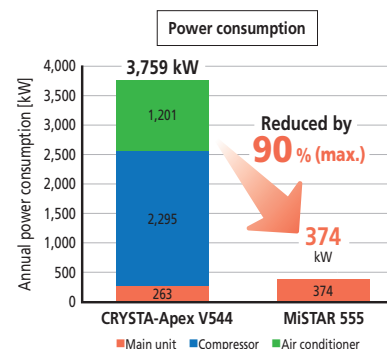
This CMM can go without maintenance for long periods, even when used on a shop floor subject to airborne oil mist.



Energy-saving

With a wide accuracy-guaranteed temperature range and without the need for pressurized air, MiSTAR 555 does not require a measuring room for its installation. This allows for substantial reduction in running costs compared with conventional coordinate measuring machines because it does not require air conditioning and air supply facilities.

Note 1: The operational hours of CMM is 16 h/day (2-shift system/day) and the operational day is 20 days/month.
 Note 2: Air-conditioning power consumption was calculated under the following condition.
 Rated cooling capacity: 2.8 kW, Room: 18 m², Operating environment according to JIS C 9612 (Preset temperature: 27°C for cooling, 20°C for warming)
 Note 3: Air-compressor power consumption was calculated from Mitutoyo's in-house testing methods.
 Note 4: Kw values used in all calculations taken from manufacturer's specifications.



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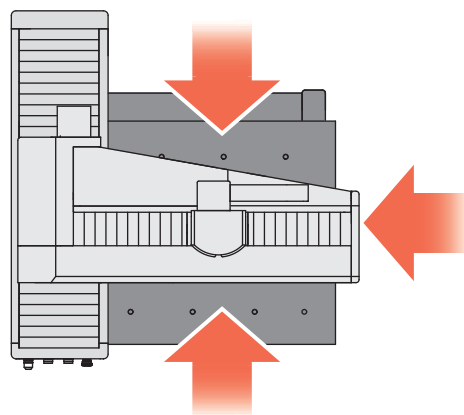
Usability

User-friendly design that reduces the operator's workload.

Cantilever architecture used to open the measurement area on three sides is the result of overhauling the measuring machine body design, starting from its material quality. Compared with a portal architecture, it makes moving workpieces on and off the measuring table significantly easier. The user-friendliness of MiSTAR 555, enabled by being open on three sides, can be seen especially on shop floors and the like where workspace is often limited.

Improved efficiency with three-sided open architecture

Three-sided open architecture while securing an ample measuring range of 570 (X) x 500 (Y) x 500 (Z) mm is very convenient for moving workpieces on and off the measuring table.



Simple, single button operation to start measuring

MiSTAR 555 comes with the Quick Launcher, which enables simple and intuitive operation for easy part program execution. The touch panel monitor further improves operability, allowing anyone to easily execute part programs.



Positioning cannot be easier: Simply place the workpiece on the measuring table

The optional clamping system and pallet receiver with positioning mechanism allow you to start measuring just by placing the workpiece on the measuring table, relieving you of the trouble of positioning the workpiece.



Pallet receiver



Clamping system



Smart Factory

From status management to preventive maintenance.

Kickstart your smart factory through visualization.

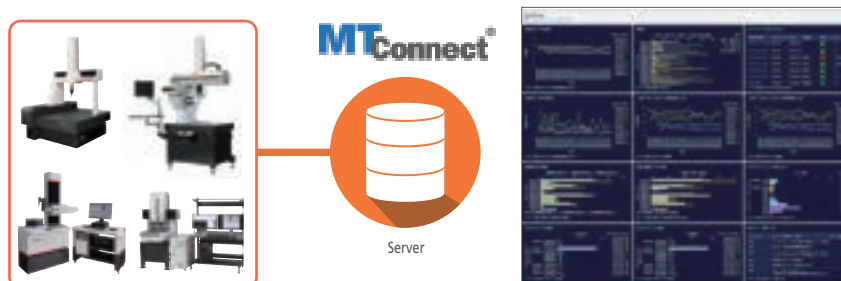
Allows you to monitor the operational status and condition of your coordinate measuring machine in real time, thereby realizing a non-stop system.



Status Monitor

Monitoring and logging of measuring machine operational status

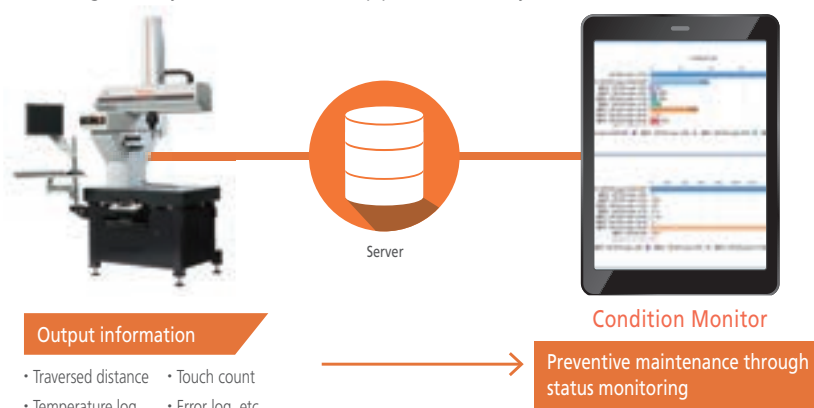
Allows you to centrally monitor the operational status of coordinate measuring machines connected to a network, along with other measuring machines on the network. "Visualizing the operational status" allows you to reduce waste and improve the operating ratio of your production facilities.



Condition Monitor

Preventive maintenance based on measuring machine status monitoring

"Visualization of status" through constant collection and accumulation of coordinate measuring machine status information, such as the probe touch count and total distance traversed by each moving element along each axis, helps to prevent sudden machine stoppages that could have been avoided by timely maintenance. Status monitoring enables you to achieve a non-stop production facility.

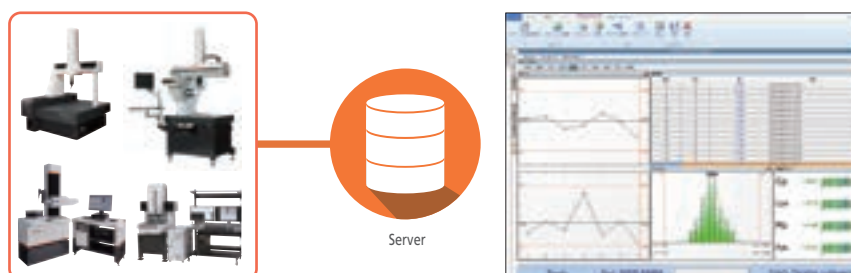


Note: Please contact the nearest Mitutoyo sales office for adaptable countries and regions.

MeasurLink

Process management based on measurement data collection and analysis

"Visualization of quality" by collecting and accumulating measurement data from networked measuring machines, and then statistically processing this data on a server in real time helps to reduce defective products.



Compact

Footprint-reducing all-in-one architecture broadens MiSTAR 555 options for installation sites.

The storage cabinet for PC, machine controllers, etc., under the measuring table reduces the footprint by about 20 % when compared with that of other coordinate measuring machines with similar measuring range.

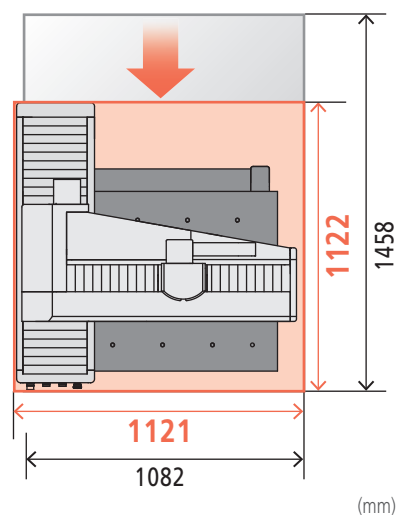
Coordinate measuring machine footprint comparison

CRYSTA Apex V544

Measuring range
X: 500, Y: 400, Z: 400
Footprint: 1.58 m²

MiSTAR 555

Measuring range
X: 570, Y: 500, Z: 500
Footprint: 1.26 m²



Option

Particularly effective to evaluate rotationally symmetrical parts like gears

Rotary table

This rotary table allows highly-accurate and efficient measurements of workpieces like rotationally symmetrical parts (gears, impellers and screw rotors). When used with a scanning probe, synchronized scanning measurements can be performed, enabling various contour measurements and advanced measurements.



Software

Application software that offers both functionality and operability.

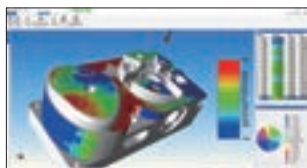
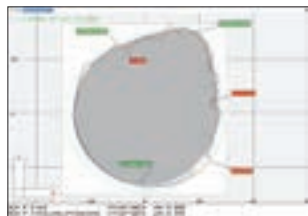
We offer an extensive lineup of application software for generating measurement programs automatically, conducting gear analysis, performing evaluations using CAD and so on.

From simple to complex measurements, these software applications can resolve any measurement issues that our customers may encounter.

MCOSMOS

Data Processing Software for CMMs

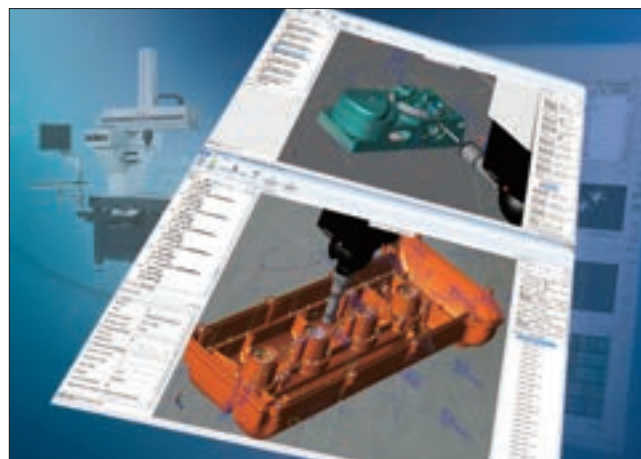
A family of dedicated programs for coordinate measuring machines. A basic software with rich functionality and a wide variety of optional programs allows you to measure and analyze any workpiece.

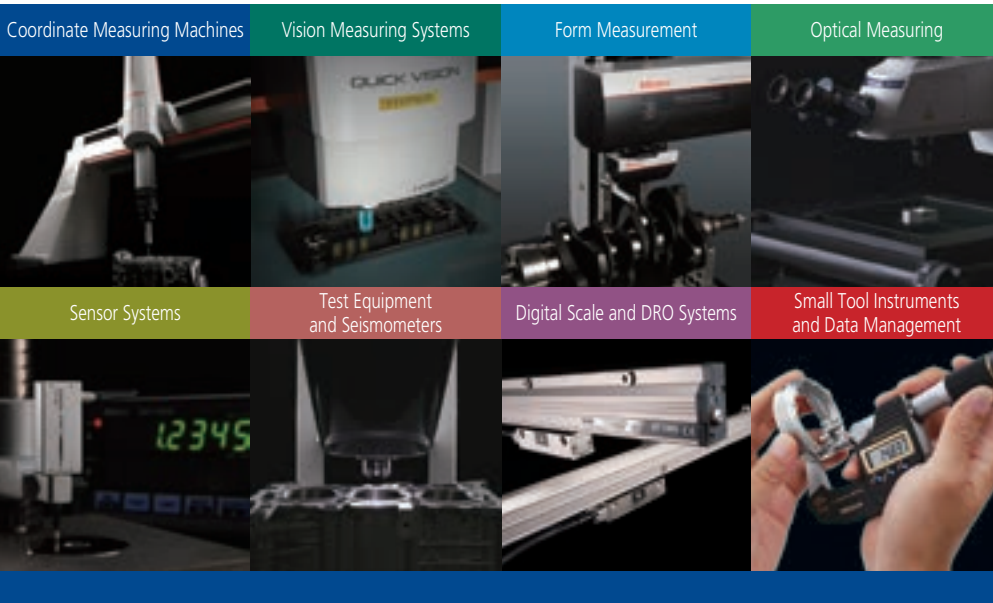


MiCAT Planner

Automatic Measurement Program Generation Software for CMMs

Allows you to automatically generate measuring programs from the 3D CAD model. Ready-to-use programs are generated in the shortest time based on the minimum number of probe repositionings, number of probe changes, and shortest measurement path assessed by the optimization software.





Whatever your challenges are, Mitutoyo supports you from start to finish.

Mitutoyo is not only a manufacturer of top quality measuring products but one that also offers qualified support for the lifetime of the equipment, backed up by comprehensive services that ensure your staff can make the very best use of the investment.

Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test and deliver bespoke measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.



Find additional product literature
and our product catalogue

<https://www.mitutoyo.co.jp/global.html>

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