

Shop Floor Type  
CNC Coordinate Measuring Machine  
MiSTAR 555



Next-Generation Coordinate Measuring Machine for the Shop Floor

# MiSTAR 555

Highly environment-resistant coordinate measuring machine,  
allowing on-site inspection outside the measuring room.

The MiSTAR 555 is a CNC coordinate measuring machine conceived to be the “measuring machine for any environment.” It comes with a wide accuracy-guaranteed temperature range, environment-resistant absolute scale, and an all-in-one space-saving design. With performance that sets it apart from conventional coordinate measuring machines, the MiSTAR 555 is guaranteed to boost your productivity.



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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 a prominent orange stripe and the Mitutoyo logo. The model name 'MiSTAR 555' is visible on the side. A probe is mounted on the machine, and a metal part is being measured on the table. The background is dark, emphasizing the machine's structure.

Making measurements in harsh shop floor environments possible.

With an environment-resistant absolute scale\*1, the MiSTAR 555 is a contamination-resistant coordinate measuring machine.

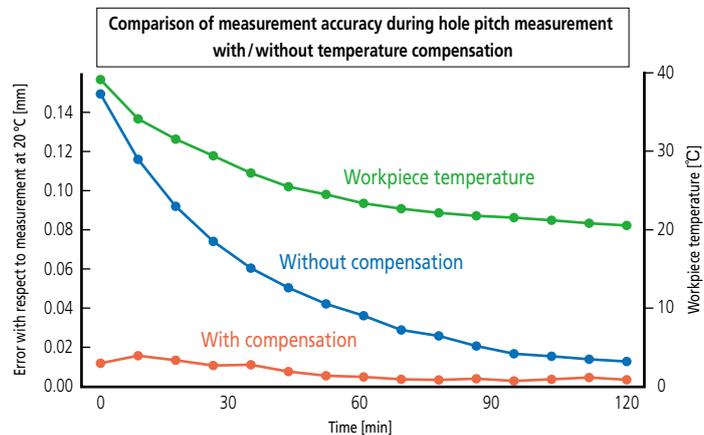
Highly reliable as a result of real-time temperature compensation technology that guarantees accuracy over a wide temperature range, it delivers a length measurement error of just  $E_{0, MPE}$  of  $2.2 + 3L / 1000 \mu\text{m}$ \*2. These features make it so that the MiSTAR 555 can be installed and operated next to machine tools on production lines, unlike typical CMMs.

\*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).

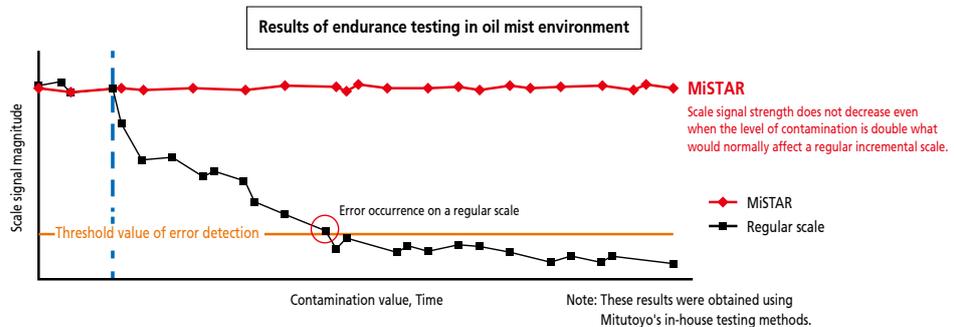
### Wide accuracy-guaranteed temperature range

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.



### Contamination resistant

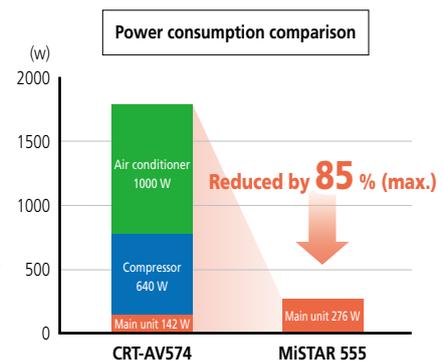
The MiSTAR 555 comes with a newly developed environment-resistant absolute scale having more than twice (in-house comparison) the contamination resistance of conventional models, as well as with linear guides on the moving elements. Conventional air bearings require a clean environment and pressurized 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, the MiSTAR 555 does not require a measuring room for its installation. This allows for a substantial reduction in running costs when compared to conventional coordinate measuring machines due to not requiring air conditioning or air supply facilities.

Note 1: Air-conditioning power consumption is the average of models for domestic use and rooms up to 18 m<sup>2</sup>.  
 Note 2: Air-compressor power consumption is the average of models with a discharge rate of 42 L/min.



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# *Usability*

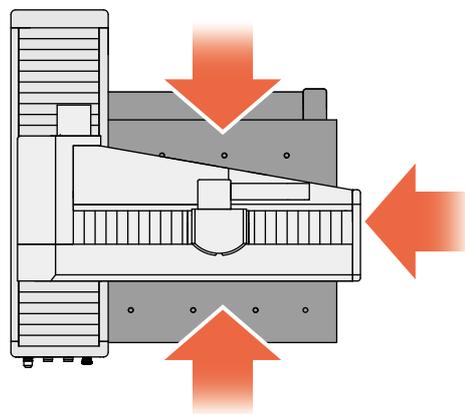
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User-friendly design reduces the workload of operators.

With a measurement area accessible from three sides thanks to the cantilever architecture, the measuring machine makes placing and removing workpieces extremely easy. The user-friendliness of the MiSTAR 555's open design is especially important on shop floors where the workspace is often limited.

### Improved efficiency with a 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.



### Perform measurements with single-button operation

The MiSTAR 555 comes with Quick Launcher, enabling simple and intuitive operation for easy part program execution.

The touchscreen monitor further improves user experience, allowing anyone to easily execute part programs.



### Perfect workpiece positioning every time

The optional clamping system and pallet receiver allow you to start measuring in a matter of seconds by saving you the trouble of positioning the workpiece every time you operate the machine.



# Smart Factory

From status management to preventive maintenance.  
Kickstart your smart factory through visualization.

Monitor the operational status and condition of your coordinate measuring machine in real-time in order to improve your overall efficiency and reduce unexpected downtime.



**SMS**  
Smart Measuring System

**SMS (Smart Measuring System)**

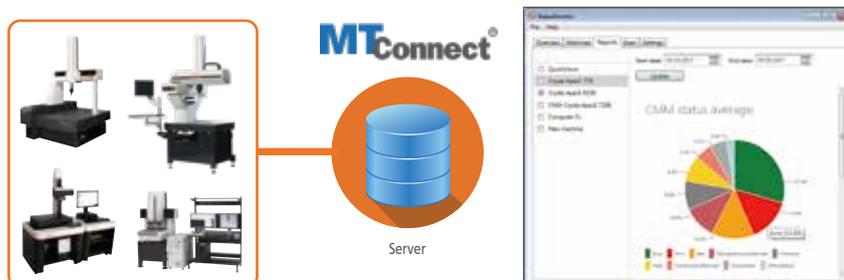
This system allows on-line monitoring of a measuring machine's operational status, as well as, visualization of measurement data produced during the manufacturing process, enabling product quality improvement.



## Status Monitor

### Monitoring and logging of measuring machine operational status

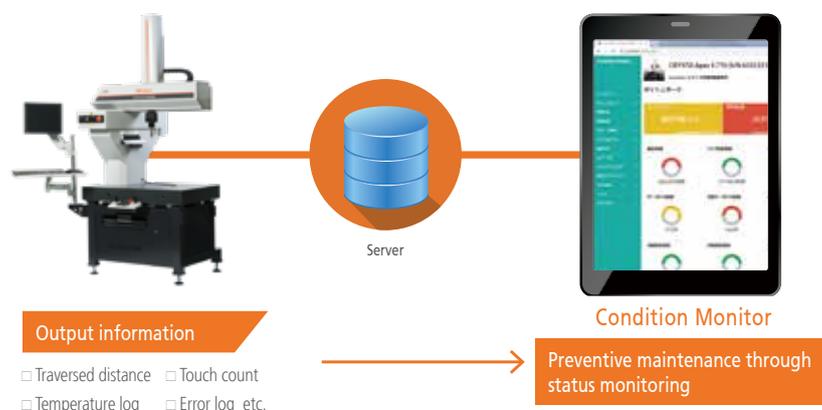
This allows you to centrally monitor the operational status of coordinate measuring machines connected to a network. Through the act of visualizing the operational status, you can improve the operating ratio of your production facilities.



## Condition Monitor

### Preventive maintenance based on measuring machine status monitoring

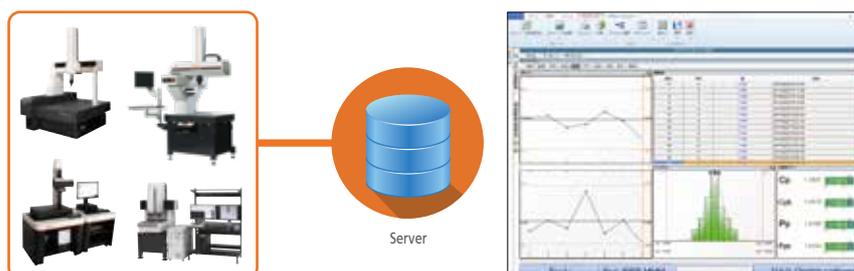
Through constant collection and accumulation of coordinate measuring machine status information, such as the probe touch count or the total distance traversed by each moving element along each axis, a production facility without unexpected interruptions becomes a reality.



## MeasurLink

### Process management based on measurement data collection and analysis

By collecting and accumulating measurement data from networked measuring machines, quality can thus be visualized, statistically processing the data on a server in real-time helps to reduce the amount of defective products.



# Compact

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

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

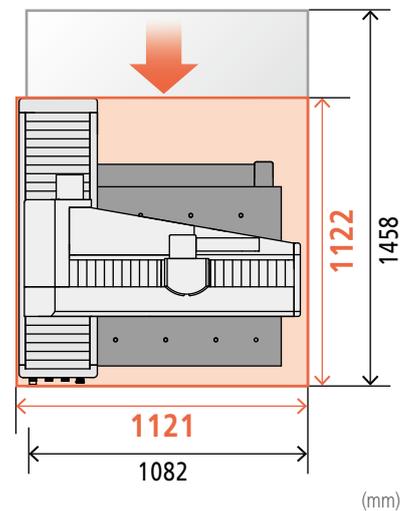
## Coordinate measuring machine footprint comparison

### CRYSTA Apex V544

Measuring range  
X: 500, Y: 400, Z: 400  
Footprint: 1.58 m<sup>2</sup>

### MiSTAR 555

Measuring range  
X: 570, Y: 500, Z: 500  
Footprint: 1.26 m<sup>2</sup>



# Options

Set your workpieces efficiently.

## Eco-Fix clamping system

The clamping system comes with a wide variety of parts, made to hold workpieces of any shape. When using the Eco-Fix system, work processes can be immensely sped up, being able to measure as soon as the system is placed on the pallet receiver without the need for further adjustment.



# Software

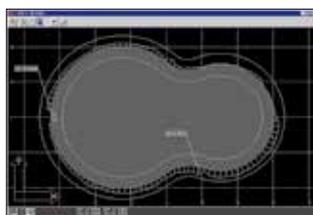
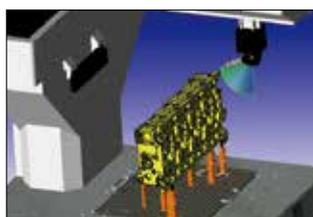
Application software that offers both functionality and ease of use.

We offer an extensive lineup of application software for generating measurement programs automatically, conducting gear analysis, performing evaluations using CAD, etc. From simple to complex measurements, these software applications can resolve any measurement issues that anyone may encounter.

## MCOSMOS

### Data processing software for CMMs

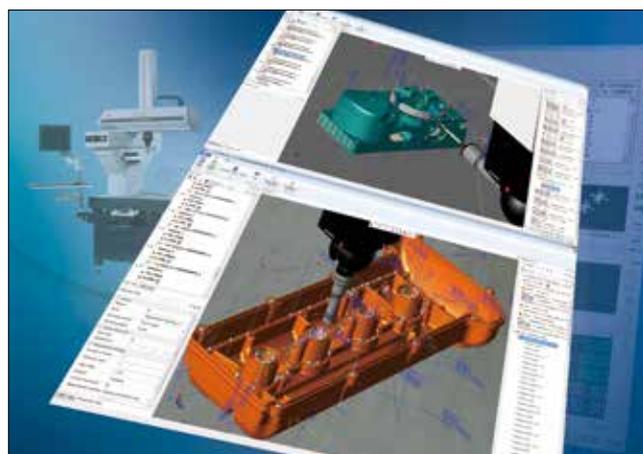
A family of dedicated programs for CMMs, MCOSMOS offers rich functionality and a wide variety of optional programs perfect for measuring and analyzing any workpiece.



## MiCAT Planner

### Automatic measurement program generation software for CMMs

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





### 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, ensuring 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 complete catalog here.

[www.mitutoyo.eu](http://www.mitutoyo.eu)

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# Mitutoyo

### Mitutoyo Europe GmbH

Borsigstraße 8-10  
41469 Neuss

Tel. +49 (0) 2137-102-0

Fax +49 (0) 2137-102-351

[info@mitutoyo.eu](mailto:info@mitutoyo.eu)

[www.mitutoyo.eu](http://www.mitutoyo.eu)