

High-speed and High-Accuracy Digimatic Micrometer QuantuMike

Small Tool Instruments
and Data Management

NEW
Products



DIGIMATIC S1

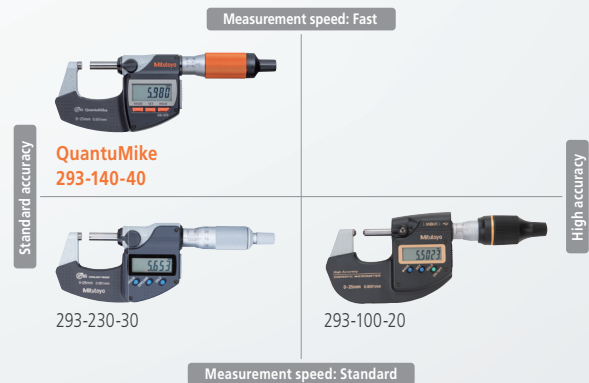


COOLANT PROOF™ IP65

Higher Precision, Quicker Results

Significantly reduces the time needed for approaching and releasing the workpiece

With a 2 mm high-lead screw, you can reduce the approach time by approximately 60%. Furthermore, the workpiece release time is also shortened, making it possible to dramatically reduce time when measuring multi-stepped workpieces. This unit is designed for ease of use in various workplaces.



1

High speed & high accuracy

The Quantumike achieves spindle movement 4 times faster than standard micrometers. Thanks to its speedy movement and excellent accuracy with a maximum permissible error (J mpe) of just $\pm 1 \mu\text{m}$, it enables even more efficient measurement work.

2

Reliable

This micrometer can easily detect excessive speed collisions with workpieces. Is also equipped with functions such as tolerance judgment, calculation, and calibration timing notification that allow measurement work to be performed reliably, without human error.

3

Easy to Use

Thanks to its wide array of functions, including a large display and bidirectional communication, the Quantumike is suitable to meet the needs of measuring workers. Designed for ease of use, the main unit enables comfortable measurement in actual manufacturing processes.

QuantuMike

The product name QuantuMike is a combination of Quantum* and Micrometer. This name reflects the quantum* leap forward in precision measurement that our company has pioneered, as well as our commitment to advancement and innovation.

*Quantum = the smallest amount of any physical entity





Actual size



See video from here



TECHNOLOGY

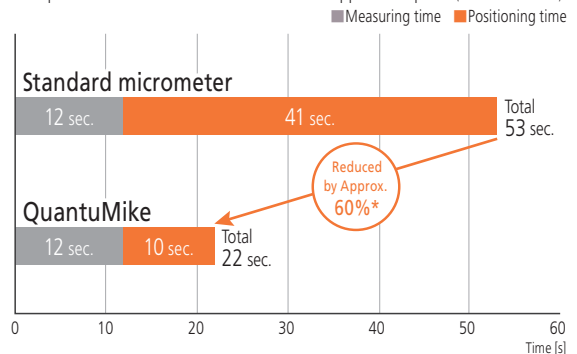
1 High Speed & High Accuracy



High-speed movement for faster measurement

Using our unique processing technology, we have produced a highly accurate, high-lead screw for the slim spindle. Unlike a typical micrometer with a 0,5 mm screw lead, the thimble moves the spindle 2 mm in a single rotation, allowing for rapid measurement. Because the spindle can be released by a large amount with just a small amount of rotation, it is ideal for cases such as when various dimensions need to be measured.

Comparison of time needed to measure a 6-stepped workpiece (with one hand)



*According to Mitutoyo's comparison test data

High accuracy measurement of $\pm 1 \mu\text{m}$

With a maximum permissible error (MPE) of just $\pm 1 \mu\text{m}^*$, QuantuMike is suitable for workpieces that require increasingly high accuracy.

* $\pm 2 \mu\text{m}$ in a measurement range of 50 - 100 mm

Can be used in environments where there is water, oil, or dust

The micrometer achieves protection level IP65 for water-resistant and dust-resistant performance. It can be used with confidence even at sites where it may be splashed by coolant liquid.



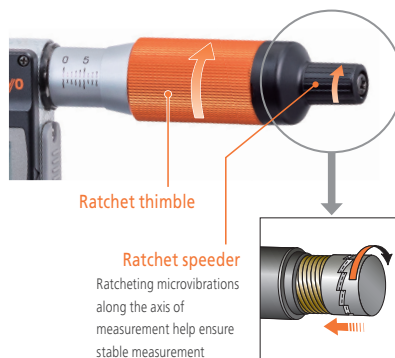
COOLANT PROOF™ IP65



Ratchet thimble mechanism for stable measurement

The micrometer features a ratchet thimble mechanism that allows stable measurement to be performed, even when operated one-handed. Ratcheting works with both the thimble and the speeder. The sound of the ratchet allows the user to verify the certainty of operation, and the speeder ratchet is convenient for rapid spindle feed.

Ratchet thimble mechanism



Reliable operation through the sound of the ratchet

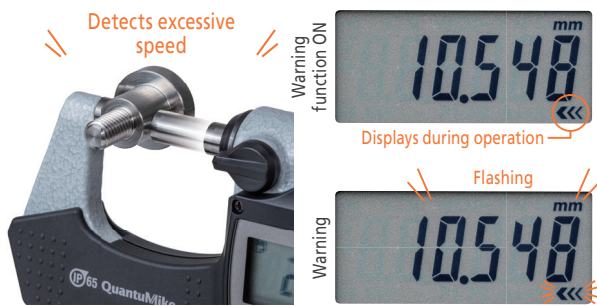


ACCESSIBILITY

2 Reliable

Approach speed warning function

NEW



The approach speed warning function detects collisions with workpieces due to excessive speed. This way, even inexperienced workers can obtain stable and accurate measurement results.

Calibration schedule alert function

NEW



Calibration advance warning date and calibration date can be set. A warning is displayed when the calibration time approaches and on the calibration date to prevent skipped calibration. This is an effective function for proper management of the digimatic gauge.

Supports measuring workers with tolerance judgment and calculation functions

NEW

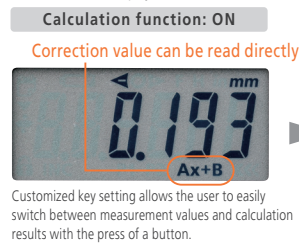
Measurement with QuantuMike



Displays tolerance judgment mark



Calculates and displays correction value



Simply enter the calculation result



The micrometer determines whether the measurement value is within the upper and lower limits of tolerance and displays a tolerance judgment mark. The user can judge pass/failure at a glance. Using the calculation function, it is also possible to calculate correction values for a processing machine from the measurement results. This eliminates the potential inconvenience of calculations and prevents human errors such as confusing plus and minus values when entering correction values into a processing machine, thereby contributing to the reduction of processing defects.

Key operation lock to prevent errors



The function settings can be locked to prevent them from being changed.

Auto power ON /OFF

If the micrometer is left idle for approx. 20 minutes, the power will automatically turn off to reduce battery consumption. Turning the spindle or operating the keys causes the power to come on automatically.

USABILITY

3 Easy to use

Large display with excellent visibility



The display portion has been increased without enlarging the body of the unit itself. Measurement values and warning marks are now easier to see from any angle.

Large buttons and key customization



Frequently used functions can be easily recalled for improved work efficiency. Compared with conventional models, the size of the buttons is larger, making them easier to press. Key operation settings can be freely modified.

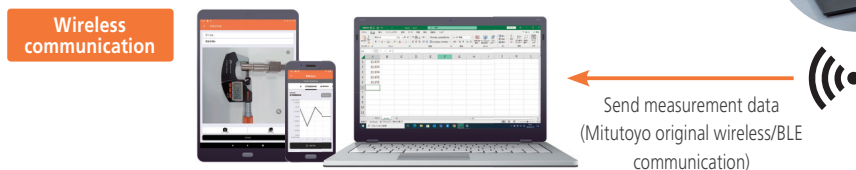
Dramatically improves work efficiency by connecting with a PC or mobile device

Refer to Catalog PRE 1604 for details.
Measurement Data Management System



In addition to digimatic d1/d2 (output), support is also provided for digimatic S1 (input/output) communication. Bidirectional serial communication enables easy setting and management of digimatic gages. Individual management of digimatic gages can be performed from a PC, and settings can also be changed. The same settings can also be applied to multiple digimatic gauges.

*An optional cable and measurement data input unit are required for bidirectional serial communication (see page 7). Please note that this cannot be used with the U-WAVE series. Additionally, USB-ITPAK V3.0 must be installed on the PC being used.



U-WAVE *fit*

Measurement Data Wireless Communication System

Measurement data from micrometers and calipers with digimatic output can be wirelessly transferred to PCs, smartphones, tablets, and other such devices.

MeasurLink **ENABLED**

Data Management Software by Mitutoyo

Measurement Data Network System

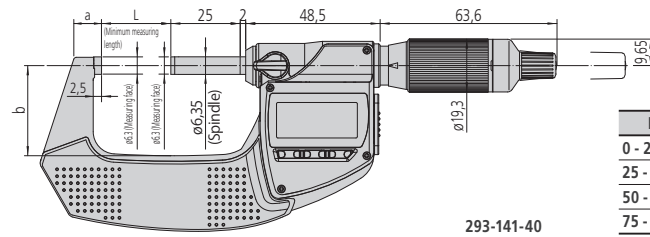
MeasurLink® is a measurement data management system based on databases (SQL Server). You can build a network to manage the measurement results and measuring instruments simply by combining the required functions. MeasurLink® is a registered trademark of Mitutoyo Corporation in Japan and Mitutoyo America Corporation in the United States.

DIGIMATIC *S1*

Digimatic S1

This is Mitutoyo's original bidirectional serial communication system. In addition to outputting measurement data, it is also possible to perform such operations as setting and controlling the digimatic gauge itself and collecting individual information of digimatic gauges from the connected PC.

■ Dimensions



293-141-40

Unit: mm

Range	L	a	b
0 - 25 mm	0	9	25
25 - 50 mm	25	9,8	32,5
50 - 75 mm	50	12,6	47
75 - 100 mm	75	14	60

■ Standard accessories

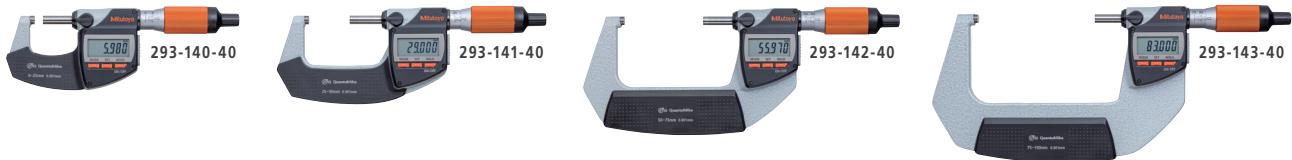
- Reference bar (except for 0-25 mm (0-1 in) models)
- Storage case
- Spanner (301336), 1 piece
- Battery, 1 piece
- User's manual
- Inspection certificate*

*Inspection certificate included as standard accessory for sizes 0 to 25 mm and 25 to 50 mm (This inspection certificate cannot be used to obtain a certificate of calibration.)

■ Specifications

Metric	Order No.	Range (mm)	Digital Step (mm)	Measuring force*1 (N)	Maximum permissible error J_{MPE} (μ m)	Flatness (μ m)	Parallelism (μ m)	Mass (g)
With SPC data output	293-140-40	0 - 25	0,001	7 - 12	± 1	0,3	1	265
	293-141-40	25 - 50						325
	293-142-40	50 - 75						465
	293-143-40	75 - 100						620
Inch/Metric	Order No.	Range (in)	Digital Step	Measuring force*1 (N)	Maximum permissible error J_{MPE} (in)	Flatness (in)	Parallelism (in)	Mass (g)
	293-180-40	0 - 1	0,00005 in/ 0,001 mm	7 - 12	$\pm 0,00005$	0,000012	0,00004	265
	293-181-40	1 - 2						325
	293-182-40	2 - 3						465
	293-183-40	3 - 4						620
								$\pm 0,0001$

- Degree of protection: IP65 (IEC60529)*2
 - Power supply: One CR2032 lithium metal battery included as standard accessory (for operation check)
 - Battery life: Approx. 2 years under normal conditions
 - Position detection system: Electromagnetic rotary sensor
- *1 Measuring force when using the speeder ratchet (apply a measuring force in the same condition as for measurement and then set the origin).
*2 This product is not waterproof. Rustproofing should be applied after use.



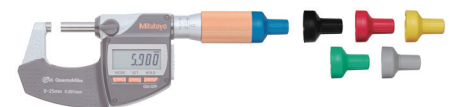
■ Functions

Origin point setting (ABS length measurement system)	The measurement origin can be preset to any value within the display range for convenience in measuring.
Zero setting (INC length measurement system)	The display can be zeroed at any position of the spindle, making it easier to compare measurements. Returning to the absolute-measurement mode is easily accomplished.
Hold	The hold function freezes the current value on the display, making it useful for performing measurements in locations where the display is difficult to see. Also, when the hold function is released, the measurement value from the most recently set zero set position or origin point position is displayed.
Calibration schedule alert function	Supports proper management of the digimatic gauge.
Approach speed warning function	Reduces variation in measurement values and improves reliability of measurements.
Tolerance judgment function	You can judge pass/failure at a glance, which is effective even when handling numerous workpieces.
Calculation function (Ax + B)	Enables calculation and direct reading of correction values for a processing machine, thereby improving the efficiency of processing work.
Key operation lock feature	Locks the ORIGIN (origin point setting) and ZERO (zero setting) functions to prevent the origin point from being accidentally changed.
Auto power ON /OFF	The reading on the LCD disappears if the micrometer is left idle for approx. 20 minutes, but the origin point (preset value) for absolute length measurement is retained. Turning the spindle again will restore the reading on the LCD.
Key customization function	Helps to easily recall frequently used functions for improved work efficiency.
Measurement data output function (Digimatic S1)	Bidirectional communication allows setting changes and information management to be easily performed from a PC.
Error message	In the event of an overflow on the LCD or a computing error, an error message appears on the LCD, and the measuring function stops. This prevents continuation of measurement with an erroneous display. Also, when the battery voltage drops to a certain level the battery depletion indicator appears well before the micrometer becomes unusable.

■ Optional Accessories

Code No.	Description (Type)
264-020	USB Input Tool Series USB Keyboard Signal Conversion Type IT-020U
06AGL111	Connection cable (1 m)
06AGL121	Connection cable (2 m)
06AGQ001A	USB Input Tool Direct (2 m)
264-622	U-WAVE-TM (IP67)
264-623	U-WAVE-TM (Buzzer)
264-626	U-WAVE-TMB (IP67)
264-627	U-WAVE-TMB (Buzzer)
02AZF960	Connecting unit for U-WAVE-TM/TMB (IP67)

■ Color speeder sleeve (optional)



Color speeder sleeves in black, red, yellow, green, blue, and gray are available for measuring management.

Color	Order No.
Black	04GAA899*
Red	04GAA900
Yellow	04GAA901
Green	04GAA902
Blue	04GAA903
Gray	04AAB208

* Standard accessory

■ Inspection certificate attached (applicable only to 0-25 mm (0-1 in) type and 25-50 mm (1-2 in) type)

- A certificate of inspection containing inspection data at the time of shipment is included.

Note: This shipping data cannot be used to obtain a certificate of calibration.

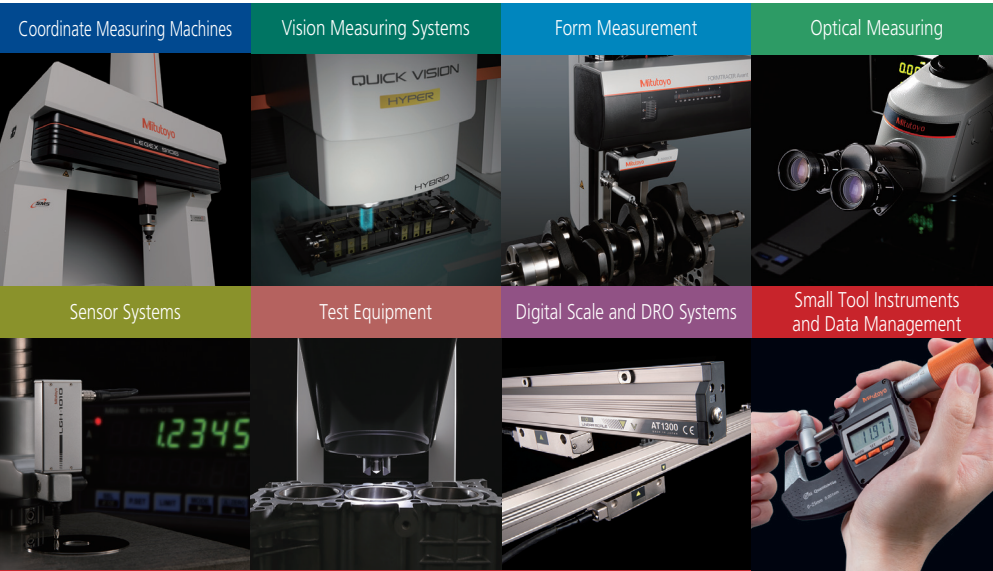


CERTIFICATE OF INSPECTION		Inspection No.	293-141-40
Product Name	Digital Micrometer	Measuring range	0 - 25
Model	293-141-40	Resolution	0.001
Serial No.	12345678	Inspection date	2023/01/01
Inspection location	QC Manager	Inspector	ABC
1. Inspection result			
1.1. Inspection item	Inspection result	Inspection value	Inspection result
Accuracy	Pass	0.000	0.000
Flatness	Pass	0.000	0.000
Parallelism	Pass	0.000	0.000
1.2. Evaluation of measuring force	Pass	0.000	0.000
1.3. Measurement error	Pass	0.000	0.000
1.4. Measurement error	Pass	0.000	0.000
2. Judgment (Pass)			
Reference standard for inspection is traceable to NIST/ANSL through JCSL which is traceable to BIPM and CIPM according to OIML R66.			
Mitutoyo Corporation			



Regarding measuring instruments with inspection certificate

Mitutoyo guarantees product quality as a leading precision measuring instrument manufacturer and ships measuring instruments with an inspection certificate that includes inspection data so that customers can use them with confidence.



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 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

www.mitutoyo.eu

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