

2mm feed per revolution **QuantuMike**

COOLANT PROOF™ IP65

2mm Feed....

....per revolution



www.tuv.com
ID 1419032586



- Patent registered in U.S.A.
- Patent pending application in Japan, EU member nations, and China.

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Debut of next-generation micrometer delivering thanks to integration of cutting-edge technology

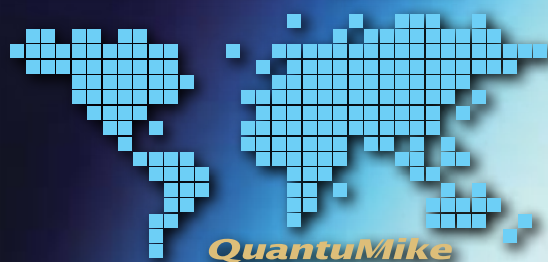
2mm feed per revolution **QuantuMike**

Mitutoyo is proud to have reached its leading position in the micrometer market through a spirit of innovation, imagination and creating added value. The QuantuMike brand of micrometer, inspired by this Mitutoyo Spirit, provides users with an excellent measuring experience with higher speed, quality and stability than ever before owing to the integration of sophisticated manufacturing and processing technologies.



The name QuantuMike is from Quantum and Micrometer, reflecting our belief this tool represents a quantum leap in micrometer ergonomics.

The new global standard QuantuMike



Evolution since the innovation by James Watt in 1772 History of micrometer advancement



1772

Micrometer invented by James Watt (UK)



1937

Success in manufacturing micrometers domestically

performance far beyond users' expectations



Spindle feed
per revolution

0.5mm

2.0mm



293-143-30
MDE-100MJ
Measuring range: 75-100mm



293-142-30
MDE-75MJ
Measuring range: 50-75mm



293-141-30
MDE-50MJ
Measuring range: 25-50mm



293-140-30
MDE-25MJ
Measuring range: 0-25mm



1971
Starting production of digit outside micrometers



1979
Starting production of Digimatic micrometers



2003
Development of coolant proof micrometers with degree of protection IP65



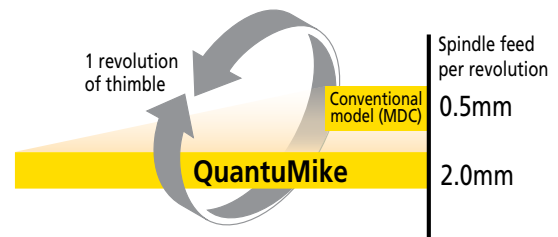
2007
QuantuMike

Speedy measurement is achieved thanks to 2 mm of spindle feed for every thimble revolution!

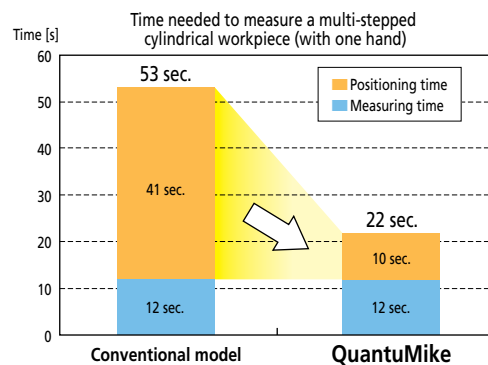
Speedy measurement

Faster measurement is achieved by using a finer thread which feeds the spindle by 2mm per revolution of the thimble instead of the standard 0.5mm. This increase of spindle feed has been made possible thanks to new high precision thread-cutting and test techniques. Trials show that a reduction in positioning times of 60% and measuring times of 35%* can be obtained, compared with a conventional micrometer.

* According to Mitutoyo's comparison test data for measuring time on typical workpieces.



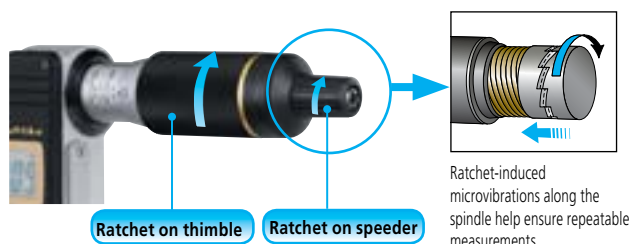
■ Significant reduction in positioning time



Repeatable measurement

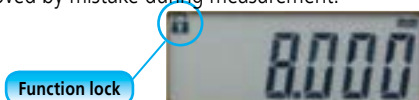
The patented ratchet thimble mechanism* helps ensure repeatable results by transmitting microvibrations along the spindle to the contact face to provide a constant measuring force and encourage good contact with the workpiece. The ratchet works from the thimble as well as the speeder so it is always easy to use - even when making measurements one-handed. The sound of the ratchet provides the user with a sense of confidence and the speeder enables the rapid spindle feed needed when measuring widely different dimensions.

* Patent registered (in Japan, USA, China, Germany, UK, and France)



Function lock helps prevent error

QuantuMike is equipped with a function lock feature to prevent the origin point being moved by mistake during measurement.



$\pm 1\mu\text{m}/\pm .00005''$ accuracy (Except for 75-100mm (3-4'') type.)

Measurements are made to an accuracy* of $\pm 1\mu\text{m}/.00005''$ throughout the range.

*Quantization error of ± 1 count excluded

Graduated sleeve provides confidence check

A graduated scale is provided on the sleeve for use with a reference mark on the thimble so that every millimetre displacement can be checked to provide extra confidence.



Useful application of measured data

A statistical process control system and a measurement network system can be established to share information regarding quality with a model equipped with the data output function.

Dust/water resistance with IP65 protection level

Excellent resistance against oil, water and dust enables this product to be used in machining situations that include splashing coolant fluid.

Category	Level	Brief description
Protection against solid foreign objects	6: Dust-proof	No ingress of dust allowed.
Protection against water	5: Protected against water jets	Water protected in jets against the enclosure from any direction shall have no harmful effects.

Note: For details of the test conditions used in evaluating each degree of protection, please refer to the original standard.



Protection codes IP65 has successfully passed the IP test carried out by a Germany accreditation organization, TÜV Rheinland.



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Selective specifications

	Order No.	Measuring range	Resolution	Instrumental error*	Flatness of measuring faces	Parallelism of measuring faces	Weight
Data output function equipped	293-140-30	0-25mm	0.001mm	±1μm	0.3μm or less (.000012" or less)	1μm or less	265g
	293-141-30	25-50mm				325g	
	293-142-30	50-75mm		2μm or less		465g	
	293-143-30	75-100mm		±2μm		620g	
Data output function not equipped	293-145-30	0-25mm	0.001mm	±1μm	0.3μm or less (.000012" or less)	1μm or less	265g
	293-146-30	25-50mm				325g	
	193-147-30	50-75mm		2μm or less		465g	
	293-148-30	75-100mm		±2μm		620g	
Data output function equipped	293-180-30	0-1"/0-25mm	.00005"/0.001mm	±.00005"/±1μm	0.3μm or less (.000012" or less)	.00004"/1μm or less	265g
	293-181-30	1-2"/25-50mm				325g	
	293-182-30	2-3"/50-75mm		.00008"/2μm or less		465g	
	293-183-30	3-4"/75-100mm		±.0001"/±2μm		620g	
Data output function not equipped	293-185-30	0-1"/0-25mm	0.001mm	±.00005"/±1μm	0.3μm or less (.000012" or less)	.00004"/1μm or less	265g
	293-186-30	1-2"/25-50mm				325g	
	293-187-30	2-3"/50-75mm		.00008"/2μm or less		465g	
	293-188-30	3-4"/75-100mm		+ .0001"/+2μm		620g	

* Excluding quantizing error

Common specifications

Functions	Origin point setting (ABS length measurement system) Zero setting (INC length measurement system) Hold Function lock Auto power ON/OFF Data output *1 Error alarm
Degree of protection	IP65 (IEC60529)*2
Measuring force	7-12N*3
Power supply	Button type silver oxide battery (SR44), 1 piece
Position detection system	Electromagnetic rotary sensor *4
Battery life	Approx. 1.2 years under normal conditions
Standard accessories	Reference bar, 1 piece (except for 0-25mm (0-1") models) Button type silver oxide battery (SR44, No. 938882), 1 piece Spanner (No. 301336), 1 piece

*1: Applicable only to 293-140-30/293-141-30/293-180-30/293-181-30/293-142-30/293-143-30/293-182-30/293-183-30

*2: This product is not waterproof. Rustproofing shall be applied after use.

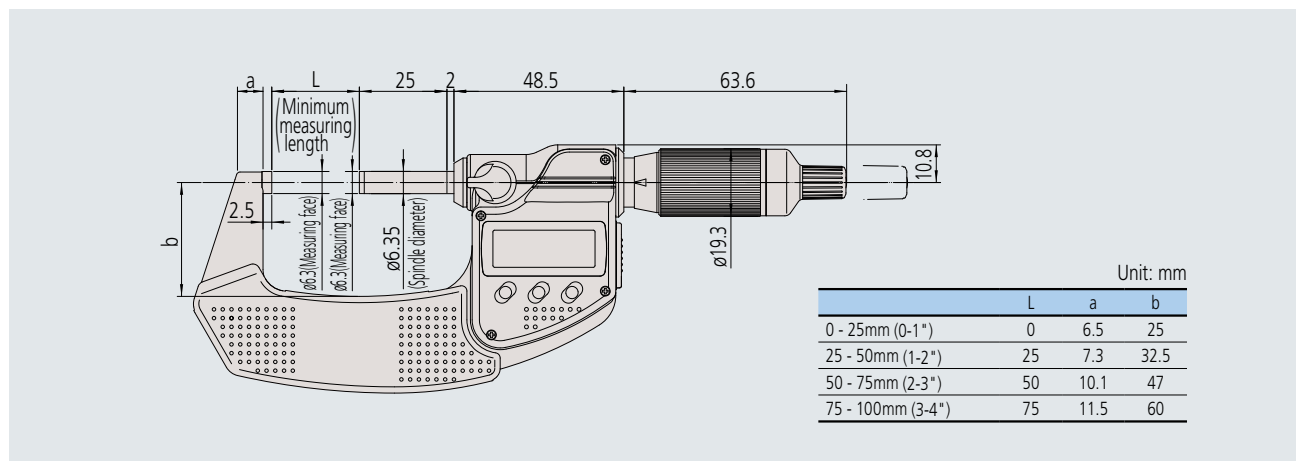
*3: Measuring force when using the speeder ratchet (Apply a measuring force in the same condition as for measurement and then set the origin.)

*4: Patent registered (in Japan, USA, and China) Patent pending (Europe)

Functions

Origin point setting (ABS length measurement system)	Pressing the ORIGIN button resets the ABS origin at the current spindle position.
Zero setting (INC length measurement system)	A brief press on the ZERO/ABS button sets display to zero at the current spindle position and switches to the incremental (INC) measuring mode. A longer press resets to the ABS measuring mode.
Hold	Pressing the HOLD button freezes the current value in the display. This function is useful for preserving a measurement in situations of poor visibility when the instrument must be moved away from the workpiece before the reading can be recorded. A second press unfreezes the display ready for another measurement.
Function lock	This function allows the ORIGIN (origin point setting) function and the ZERO (zero setting) function to be locked to prevent these points being reset accidentally.
Auto power ON/OFF	The reading on the LCD disappears after this instrument is idle for approx. 20 minutes, but the origin point is retained. Turning the spindle causes the reading on the LCD to reappear.
Data output	Models equipped with this function have an output port for transferring measurement data to a Statistical Process Control (SPC) system.
Error alarm	In case of an overflow on the LCD or a computing error, an error message appears on the LCD, and the measuring function stops. This prevents an instrument from giving an erroneous reading. Also, when the battery voltage drops to a certain level the low-battery-voltage alarm annunciator appears well before the micrometer becomes unusable.

Dimensions



Certificate of inspection attached

Applicable only to 0-25mm (0-1") type and 25-50mm (1-2") type

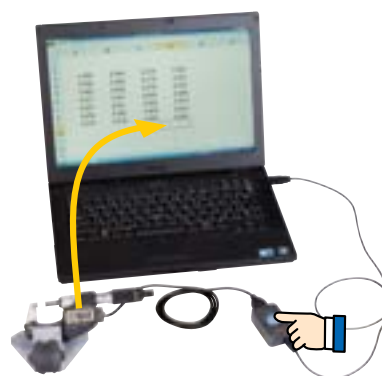
- A Certificate of Inspection is supplied with each instrument shipped that guarantees the quality of the product. Please note that this certificate cannot be used to obtain a Certificate of Calibration because the purchase date cannot be specified.
- Please let us know if a Certificate of Calibration is required when ordering a micrometer. This certificate is supplied, for a fee, and certifies the traceability of the purchased instrument and of the standard that was used to calibrate that instrument.
- Certificates of inspection and calibration are issued after processing each instrument by special measuring equipment, developed using Mitutoyo's advanced measuring technologies, which feature very small uncertainties of measurement.



Optional accessories

Measurement data input unit <USB Input Tool>

USB input tool can input data to the PC with the push of a button.



* Refer to the USB Input Tool Series leaflet (E12007) for more details.

**USB
IT-016U
No.264-016**



**Connecting cable with output
switch**

1m: No.05CZA662
2m: No.05CZA663



Color speeder sleeve

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

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

*Standard accessory





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.

Note: Product illustrations are without obligation. Product descriptions, in particular any and all technical specifications, are only binding when explicitly agreed upon.

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