

QUANTUMMIKE

PRE1317(2)



Rapid measurement thanks to 2 mm spindle pitch

Mitutoyo

Micrometer with 2 mm spindle feed

QuantuMike®

This is the next generation of digital outside micrometers that sets new standards by integrating innovative technologies.

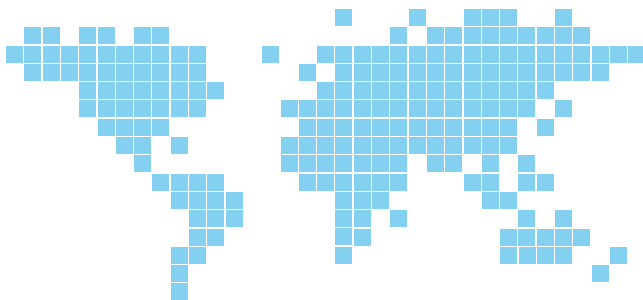
A quantum leap in the evolution of hand-held measuring tools:
More speed, accuracy, intelligence and convenience.

A long evolution – a promising future.
Mitutoyo's QuantuMike
is making history.

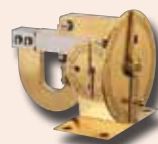


QuantuMike, the name, is a combination of 'quantum' and 'micrometer', and attests that this instrument represents a quantum leap in the field of micrometer technology.

A new global standard
QuantuMike®



A history of innovation in micrometer design



1772

James Watt invents the progenitor of the modern outside micrometer



1937

Mitutoyo commences mass production of outside micrometers

QuantuMike® is a registered common trademark of Mitutoyo Corporation Japan

Mitutoyo

QuantuMike®

Quick measuring process

The rapid measurement is achieved by means of a large-pitch thread which feeds the spindle at the rate of 2 mm with every revolution of the thimble – instead of the usual 0.5 mm. This coarser thread was made possible only by the use of new high-precision thread cutting processes and testing methods. Tests prove that measuring times are typically shortened by about 40% compared with conventional micrometers.

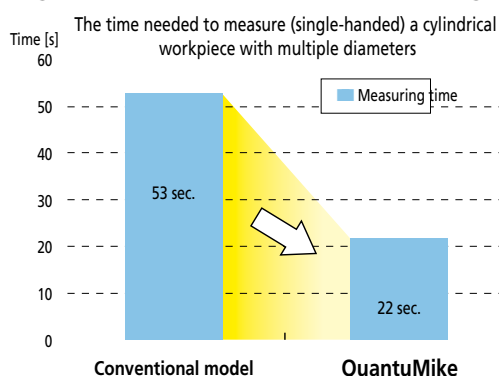


Comparison of measuring times on a stepped workpiece

The time needed by a conventional digital micrometer and QuantuMike to measure 6 diameters – from smallest to largest – was recorded. The micrometers were held in one hand.



Significant reduction in measuring time



1971

Mitutoyo commences production of counter outside micrometers



1979

Mitutoyo commences production of digital outside micrometers



2003

Development of the first high-grade outside micrometer with IP protection class IP 65



2007

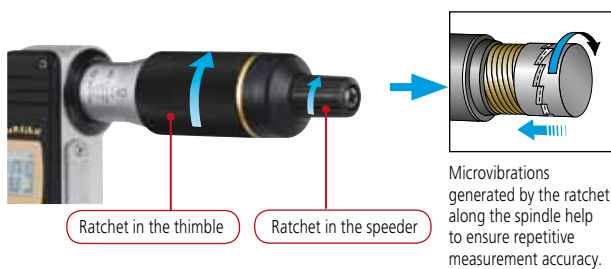
QuantuMike®

Features

Repetitive measurement accuracy

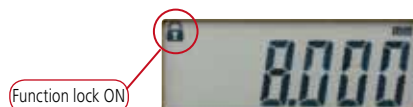
The patented ratchet drum mechanism* supports stable measurements in various applications, such as single-handed operation or stand operation. The ratchet can be operated both via the thimble and the speeder, ensuring that it is always easy to use - even when measuring with just one hand. The sound of the ratchet gives the user a feeling of security and the speeder allows the spindle to travel faster, which is especially useful when dealing with stepped workpieces.

* Patent registered (Japan, the USA, China, Germany, Great Britain and France)



'Function Lock' helps to prevent errors

QuantuMike is equipped with an electronic lock to prevent resetting of the reference point during measurement.

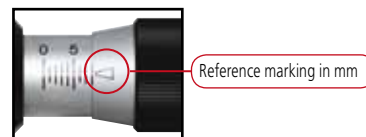


2 µm error limits

The error limits of the instrument are specified with an accuracy that exceeds the requirements of DIN 863.

A graduated scale offers a further means of control for added security

A graduated scale on the sleeve is available for use with a reference mark on the thimble so that each millimeter movement can be checked for added security.



Transmission of measurement data

Measuring instruments provided with Digimatic data output can transmit measurement data to a statistics printer or computer.

Dustproof/Water-resistant with protection rating IP65

Thanks to its excellent resistance to water and dust ingress, this product can be used for applications involving exposure to spraying coolant and flying dust.

Category	Type	Description
Protection grades for contact and foreign matter protection	6: Dustproof	Complete protection against dust penetration
Protection grades for water protection	5: Protection against water jets	A jet of water*1 aimed at the housing from any degradation of function.

*1: A jet nozzle with an inside diameter of 6.3 mm aims a flow of 12.5 liters per minute from a distance of about 3 meters at the housing. The testing period is at least 3 minutes.



Dustproof and protected against water jets
IP 65

QuantuMike®



with data output 293-140 (mm)
0-25 mm



with data output 293-142 (mm)
50-75 mm



with data output 293-141 (mm)
25-50 mm



with data output 293-143 (mm)
75-100 mm



CERTIFICATE OF INSPECTION / 検査成績書				Issue No./発行No. 081010A2	
1. Item/対象製品		Dipomatic Micrometer		Measuring range/測定範囲 0-25mm	
Product name/品名		Model/型号		Resolution/最小表示量 0.001mm	
Code No./コードNo.		293-140		Serial No./製造No. 12245878	
2. Result of inspection/検査結果		Inspection standard: Mitutoyo standard ①		Standard temperature/標準温度 20 °C	
Performance/性能					
		Permissible error / 許容値		Measured value / 測定値	
Flatness of measuring face / 平面度		Allow / 許容値		0.3 0.0	
Spindle / スピンドル		7/25.75		0.3 0.0	
Parallelism of measuring faces / 平行度		1/25.75		0.3 0.0	
				1.0 0.0	
Measuring length / 測定長さ		Permissible error / 許容値		Uncertainty of measurement / 測定の不確かさ	
0.00		0			
4.00		0			
10.00		± 1		() ± **	
15.00				() ± 2	
18.00					
25.00		± 1			
Traceable to: NMJ/AIST by JCSS No.0030/AIST via No.R21/260604-03, No.R21/262608-00 & R21/262133-99 PTB via No.3106P1002, No.4349P1003					
3. Judgment / 総合判定		Passed / 合格		この検査成績書には記入した「検査結果」が記載されています。この検査結果は検査データと一致しています。	
4. QC Manager		H. Watanabe		校正証明書取得時にはご利用できません。	
Mitutoyo Corporation					



Including works test certificate

Numerous Mitutoyo hand-held measuring instruments are supplied complete with standard works inspection certificate – this saves the initial calibration and so saves both time and money. This document, available in seven languages, records a calibration made in accordance with ISO standards and refers to all the features that affect accuracy of the instrument. The original test certificate is generated by an automated calibration process, making each Mitutoyo measuring instrument clearly identifiable.

COOLANT PROOF

Coolant proof

Mitutoyo uses materials that are extremely resistant to emulsion, oil, grease and coolant ingress when manufacturing its 'coolant proof' measuring equipment. For an instrument to be classed as 'coolant proof' it must not suffer any functional failure during or after intensive exposure to these substances – a substantial additional competitive advantage for particularly demanding applications.



TÜV certification

The IP protection classes of Mitutoyo hand-held measuring instruments are confirmed by corresponding test certificates issued by TÜV Rheinland Group following a series of in-depth tests. This is extremely helpful for users when deciding which instrument to purchase: They are not just dependent on the information provided by the manufacturer but can also rely on the independent judgment of a neutral expert opinion.

Specifications

General technical specifications

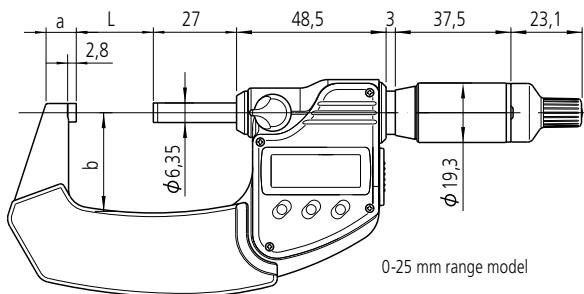
Functions	ORIGIN (Reference point-ABS-Length measuring system) ZERO position (INC length measuring system) HOLD (Hold value) Auto Power OFF (after 20 minutes idle time) Data Output *1 Error alarm
Protection type	IP65 (DIN EN 60529)*2
Measuring force	7-12N
Power supply	1 silver oxide cell battery (SR44)
Position detection system	Electromagnetic rotation sensor *3
Battery life	Approx. 1,2 years under normal working conditions
Standard accessories	Box, adjusting spanner, 1 SR44 battery (no. 938882), length standard (25 mm +), works inspection certificate

*1: applies only to 293-140 / 293-141 / 293-142 / 293-143

*2: This product is not waterproof, rustproofing should be applied after use.

*3: Patent pending (in Japan, the USA, Europe and China)

Dimensions



0-25 mm range model

Functions

Origin (Reference point-ABS-Length measuring system)	Pressing the ORIGIN button sets the ABS reference point at the current spindle position.
ZERO position (INC length measuring system)	Briefly pressing the ZERO/ABS button the display of the current spindle position to zero and switches to incremental (INC) measuring mode. A longer press switches to ABS measuring mode.
Hold (Hold value)	Pressing the HOLD button keeps the current value in the display. This function is useful if a measurement is performed in poor visibility and the instrument therefore has to be taken away from the workpiece in order to read the measurement. Pressing the HOLD button again unlocks the display, and the instrument is ready for the next measurement.
Function Lock	This function disables the ORIGIN function (setting the original point) and the ZERO function (zero position) and therefore prevents these points from being unintentionally reset.
Auto Power OFF (after 20 min. idle time)	The LCD display goes blank if the instrument is not used for 20 minutes, although the reading is maintained. Turning the spindle lights up the LCD display once more.
Data output	Models equipped with this function are fitted with an output connector that can be used to transfer measurement data to a statistics printer or computer.
Error Alarm	If the LCD display overruns or an error occurs, an error message appears on the LCD display and the measuring function is stopped. This prevents an incorrect measurement value from being displayed. A warning message also appears when the battery voltage drops below a certain level, therefore providing timely warning that the battery needs replacing long before the micrometer stops operating due to an exhausted battery.

	L	a	b
0-25 mm	0	9	25
25-50 mm	25	9,8	32

Selected technical specifications

No.	Model	Measuring range	Weight	Resolution	Error limits*	Flatness of measuring surfaces	Parallelism of measuring surfaces
293-140	with data output	0-25 mm	265 g	0,001 mm	2 μm	0.3 μm or less	1 μm or less
293-141		25-50 mm	325 g				
293-142		50-75 mm	465 g				
293-143		75-100 mm	620 g				
293-145	without data output	0-25 mm	265 g		2 μm		
293-146		25-50 mm	325 g				
293-147		50-75 mm	465 g				
293-148		75-100 mm	620 g		3 μm		

* A level of accuracy that exceeds the requirements of DIN 863

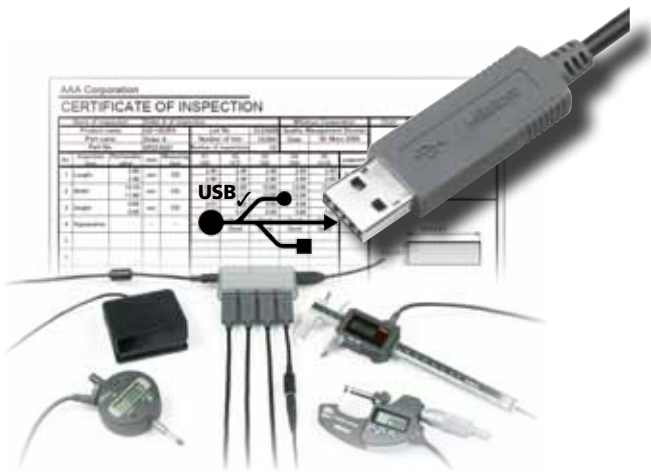
Accessories

Optional accessories (only for models with data output)

- **Connecting cable with data key**
 No. 05CZA662 = 1 m
 No. 05CZA663 = 2 m



- **Digimatic mini processor, DP-1VR**
 No. 204-504-5D
 Statistics printer



- **USB Input Tool Direct**
 No. 06ADV380B = 2 m
 For reading data directly into application software, such as Microsoft Excel

Special accessories

- **Colored ratchet caps**
 Color caps are available in black, red, yellow, green, blue and gray to help manage measurements, e.g. to control calibration intervals

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

*Standard accessory



Registered / Pending Mitutoyo patents

Registered Mitutoyo patents*

Patent no.	US4879508	US4878013	US5053715	US6329813	US6400138
	JP1783035	JP1783036	JP1745485	JP3436510	JP1745486
	EP0248165	EP0404980	EP0240020	EP1014041	EP1099928
	GB2379812				
	CN87102580	CN87102624	CN89106051	CN1272620	

Pending Mitutoyo patents*

Patent no.	DE10111975	DE10229868	DE10238268		
	EP1528365	EP1746382	EP1715298	EP1515112	EP1486753

* as of March 2008

Coordinate Measuring Machines

Vision Measuring Systems

Form Measurement

Optical Measuring

Sensor Systems

Test Equipment and
Seismometers

Digital Scale and DRO Systems

Small Tool Instruments and
Data Management

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