

**INDEX**

<b>Micrometer</b>	
Quantu Mike	24
Coolant Proof Micrometer	26
Digimatic Micrometer	28
Absolute Digimatic Micrometers	29
Quickmike	30
Outside Micrometers	31
Ratchet Thimble Micrometer	34
Outside Micrometers	36
Quick-Setting Outside Micrometers	36
Outside Micrometers	37
Caliper Type Micrometers	39
Screw Thread Micrometers	40
Universal Micrometers / 3-Wire Units	42
Gear Tooth Micrometers	43
Disk Micrometers	44
Paper Thickness Micrometers	45
Disk Micrometers	46
Sheet Metal Micrometers	48
Spline Micrometers	49
Tube Micrometers	50
Point Micrometers	52
Crimp Height Micrometers	53
V-Anvil Micrometers	54
Blade Micrometers	56
Can Seam Micrometers	57
Hub Micrometers	58
Wire micrometers	58
Digit Outside Micrometers	59
"Uni-Mike"	60
Limit Micrometers	61
Indicating Micrometers / Snap Meters	62
Dial Snap Meters	63
Digimatic Bench Micrometer	64
Groove Micrometers	65
Quick-Mini	66
Small Hole Gage Set / Telescoping Gage Set	67
Color Ratchet & Color Speeder	68
Spindle Attachment Tip / Micrometer Oil	68
Optical Parallels / Optical Flats	69
Micrometer Standards	70
Standards for Screw Thread Micrometers	71
Standards for V-Anvil Micrometers	71
Micrometer Stands	72
<b>Micrometer Heads</b>	
Micrometer Head Selection Guide	73
Digimatic Micrometer Heads	74
Absolute Digimatic Micrometer Heads	76
Fine Spindle Feeding of 0.1mm/rev	77
Fine Spindle Feeding of 0.25mm/rev	78
Ultra-small/small Type	79
Large Thimble Diameter for Easy Reading	80
Common Type in Small Size	81
Common Type in Small Size with Zero-Adjustable Thimble	82
Common Type in Small Size with Carbide Tipped Spindle	83
Common Type in Middle Size	84
Common Type in Middle Size with 8mm diameter spindle	85
Non-Rotating Spindle Type	86
Quick Feeding Type (1mm/rev)	87
Large Thimble Type for Fine Feeding	87
Differential Screw Translator (Extra-Fine Feeding) Type	88
for XY-Stage	89
Non-rotating Spindle and Large Thimble	90
High Resolution and High Accuracy	90
High Resolution and High Accuracy	91
with Digit Counter	92
Micro Jack	92
Precision Lead Screw	93
Fixtures for Micrometer Heads	94



**Micrometers**



**Micrometer Heads**

**New Products**

**Coolant Proof Micrometer**

**Digimatic Micrometer**

**Ratchet Thimble Micrometer**

**Digimatic Spline Micrometer**

**Fine Pitch Micrometer Head**

# QuantuMike

## SERIES 293 — IP65 Coolant Proof Micrometer with 2mm/rev Spindle Feed

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

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.



Metric	
Range	Order No.
0 - 25mm	293-140 / 293-145*
25 - 50mm	293-141 / 293-146*

\*without SPC data output



Inch/Metric	
Range	Order No.
0 - 1"	293-180 / 293-185*
1" - 2"	293-181 / 293-186*

\*without SPC data output



(Refer to the page 9 for details.)



(Refer to the page 9 for details.)



Certificate of inspection

### Technical Data

- Accuracy:  $\pm 1\mu\text{m}$  (excluding quantizing error)
- Resolution: 0.001mm, .00005"/0.001mm
- Flatness: 0.3 $\mu\text{m}$
- Parallelism: 1 $\mu\text{m}$
- Measuring faces: Carbide tipped
- Display: LCD
- Length standard: Electromagnetic rotary sensor
- \*Patent pending (in Japan, USA, Europe, and China)
- Battery: SR44 (1 pc.), 938882
- Battery life: Approx. 3 years under normal use
- Dust/Water protection level: IP65

### Function

- Origin-set, Preset (over 100mm models), Zero-setting, Automatic power ON/OFF, Data hold, Data output, inch/mm conversion (inch/mm models)
- Alarm: Low voltage, Counting value composition error





### Optional Accessory

- 05CZA662: SPC cable with data switch (1m)
- 05CZA663: SPC cable with data switch (2m)



SPC cable with data switch



Measurement data output function is available with a water-resistant connection cable.

### 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.



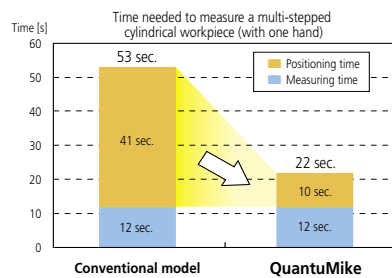
## FEATURES

### • Speedy measurement

Faster measurement is achieved by using a coarser thread which feeds the spindle by 2mm per revolution of the thimble instead of the standard 0.5mm. This increase in thread lead 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.



The time needed to measure 6 diameters on a workpiece, from the smallest to the largest with the micrometer held in one hand, was recorded for a conventional digital micrometer and for the QuantuMike

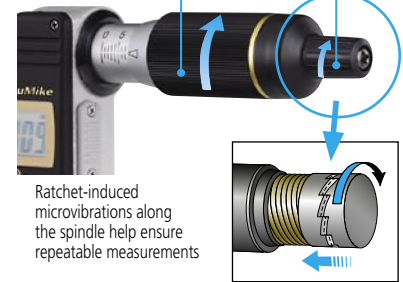
### • Repeatable measurement

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)



Ratchet on thimble Ratchet on speeder



Ratchet-induced microvibrations along the spindle help ensure repeatable measurements

### • Function lock

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



### • 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.



## DIMENSION AND MASS

