

# Coolant Proof Micrometers MDC-MX Series

*Twice as Long Battery Life as before and Drastic Improvement  
in Measurement Efficiency*



Small Tool Instruments and Data Management

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Catalog No.E12023

# Mitutoyo



# Coolant Proof Micrometers MDC-MX Series

*Twice as Long Battery Life as before and Drastic Improvement  
in Measurement Efficiency*



- Approximately 2.4-year span of battery life
- Newly-employed nonslip surface with raised dots
- Ratchet thimble type\*
- \* Refer to the "SPECIFICATIONS" section on page 4.
- Oilproof material employed for plastic parts
- Compatibility with statistical process control and measurement systems

**Mitutoyo**

# 1. Digital micrometer standard type



IP65

# 2. Ratchet Thimble type that has improved operability with one hand



IP65

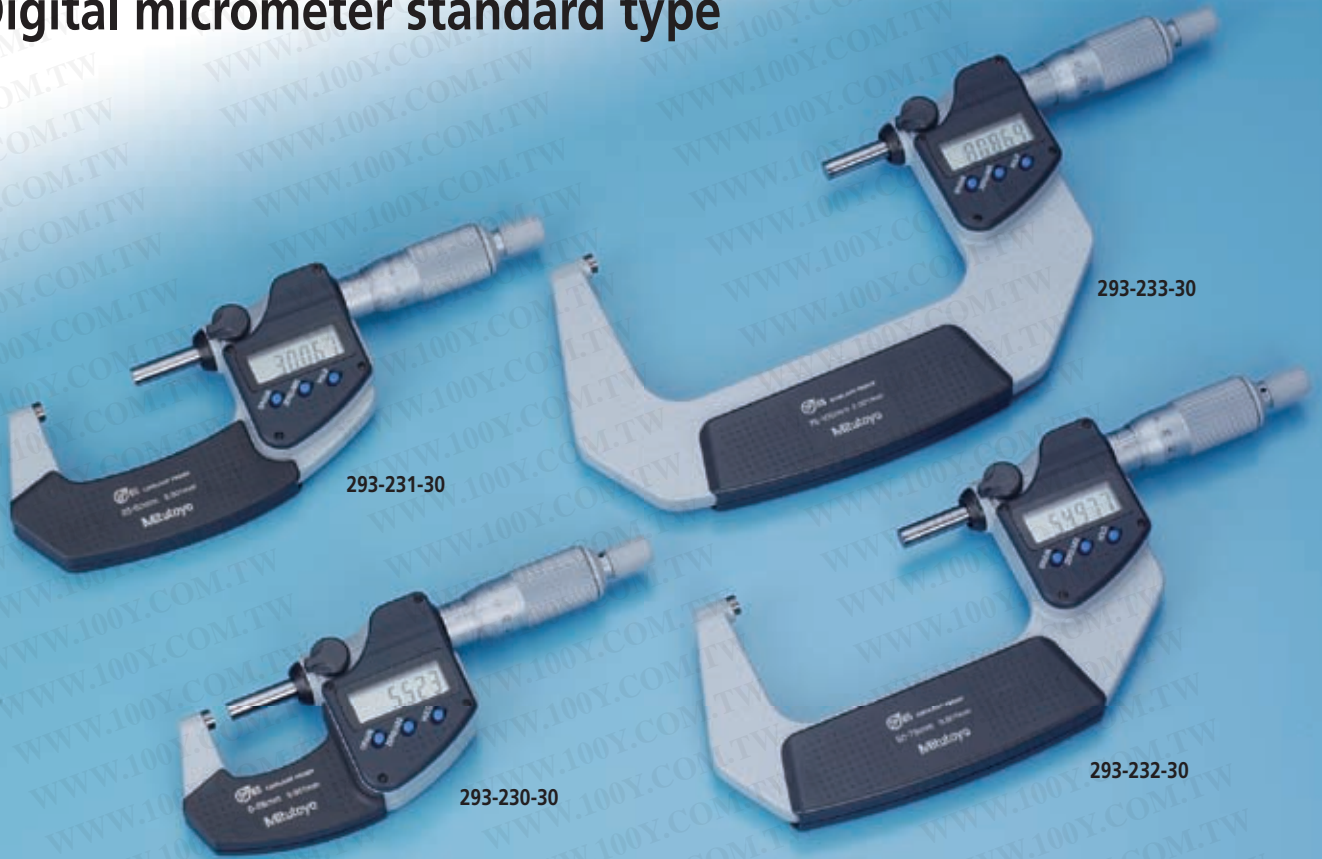
# 3. Plain Function, Simple design



# Coolant Proof Micrometers



## Digital micrometer standard type



- Approximately 2.4-year span of battery life has been achieved, thus reducing the inconvenience of replacing the battery.
  - A nonslip surface with raised dots is employed for the frame cover and surface panel to achieve stable handheld measurement.
  - The ratchet thimble mechanism helps to 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 onehanded.
- 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.
- Oilproof materials are used in all plastic components.
  - Two types of constant-force devices are available: Ratchet Stop and Ratchet Thimble.



# Ratchet Thimble type that has improved operability with one hand



293-234-30



Improved operability with one hand



An inspection certificate is supplied as standard. (50mm/2" or less range model)

## SPECIFICATIONS

		Metric						
		Order No.	Range	Accuracy	Parallelism	Measuring force	constant-force device	Mass
With SPC data output		293-230-30	0 - 25mm	±1μm	1μm	5 - 10N	With ratchet stop	270g
		293-231-30	25 - 50mm		2μm			330g
		293-232-30	50 - 75mm	±2μm	2μm	7 - 12N*	With ratchet thimble	470g
		293-233-30	75 - 100mm					625g
		293-234-30	0 - 25mm	±1μm	1μm	7 - 12N*	With ratchet thimble	280g
		293-235-30	25 - 50mm		340g			
	293-236-30	50-75mm	±2μm	2μm	7 - 12N*	With ratchet thimble	480g	
	293-237-30	75-100mm					635g	
Without SPC data output		293-240-30	0 - 25mm	±1μm	1μm	5 - 10N	With ratchet stop	270g
		293-241-30	25 - 50mm		330g			
		293-242-30	50 - 75mm	±2μm	2μm	7 - 12N*	With ratchet thimble	470g
		293-243-30	75 - 100mm					625g
		293-244-30	0 - 25mm	±1μm	1μm	7 - 12N*	With ratchet thimble	280g
		293-245-30	25 - 50mm		340g			
		293-246-30	50-75mm	±2μm	2μm	7 - 12N*	With ratchet thimble	480g
		293-247-30	75-100mm					635g

		Inch/Metric						
		Order No.	Range	Accuracy	Parallelism	Measuring force	constant-force device	Mass
With SPC data output		293-330-30	0-1"	±0.0005"	0.0004"	5-10N	With ratchet stop	270g
		293-331-30	1-2"		330g			
		293-332-30	2-3"	±0.001"	0.0008"	7-12N*	With ratchet thimble	470g
		293-333-30	3-4"					625g
		293-334-30	0-1"	±0.0005"	0.0004"	5-10N	With friction thimble	280g
		293-335-30	0-1"					275g
	293-336-30	1-2"	±0.0005"	0.0008"	5-10N	With ratchet stop	335g	
	293-340-30	0-1"					270g	
Without SPC data output		293-341-30	1-2"	±0.0005"	0.0008"	5-10N	With ratchet stop	330g
		293-342-30	2-3"					470g
		293-343-30	3-4"	±0.001"	0.0008"	7-12N*	With ratchet thimble	625g
		293-344-30	0-1"					280g
		293-345-30	1-2"	±0.0005"	0.0004"	7-12N*	With ratchet thimble	340g
		293-346-30	2-3"					480g
		293-347-30	3-4"	±0.0005"	0.0008"	5 - 10N	With friction thimble	635g
		293-348-30	0-1"					275g
		293-349-30	0-1"	±0.001"	0.0004"	7 - 12N*	With ratchet thimble	280g

\* Measuring force in the case of using the Speeder ratchet  
Prior to measurement, apply a measuring force in the same condition to align the index line with the thimble zero line.



These marks indicate that a product has successfully passed IP65-level testing, which is carried out by the independent German certification organization TÜV Rheinland.

### IP Codes

**Level 6:** Dust-proof.

No ingress of dust allowed.

**Level 5:** Protected against water jets.

Water projected in jets against the enclosure from any direction shall have no harmful effects.

### Technical Data

- **Resolution:** .00005"/0.001mm
- **Quantizing error:** ±1 is not included.
- **Flatness:** 0.3 μm
- **Dust/water protection level:** IP65 (IEC60529) \*2
- **Measuring system:** Electromagnetic induction type rotary sensor
- **Battery:** SR44 (1 pc), 938882, for initial operational checks (standard accessory)
- **Battery life:** Approx. 2.4 years under normal use
- **Standard accessories:** Reference bar, 1 pc (except for 0-25mm (0-1") models) Spanner (301336), 1 pc

\*2 Rustproofing shall be applied after use.

# Coolant Proof Micrometers



## Functions

### • Origin point setting (ABS measurement system)

Resets the ABS origin at the current spindle position to the minimum value of the measuring range and switches to ABS mode.

### • Zero-setting (INC 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 where the instrument must be moved away from the workpiece before the reading can be recorded.

### • Data output\*4:

Models equipped with this function have an output port for transferring measurement data to a Statistical Process Control (SPC) system. \*4: Only models with the data output function

### • Auto power ON/OFF:

The reading on the LCD disappears after this instrument is idle for about 20 minutes, but the reading and measurement mode are retained. Turning the spindle causes the reading to reappear.

### • 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.

### • Function lock\*5:

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. \*5: All-digit preset type only

## Optional accessories

(Only for models with data output function)

### • Printer: Digimatic mini-processor DP1-VR

Connecting cables with output switch \*3

1m: No.05CZA662

2m: No.05CZA663

\*3 Both cables are also available for connection with such as IT-012U/IT-007R/MUX-10F



### • USB Input Tool Direct: U-WAVE-T

USB-ITN-B (2m): 06ADV380B

• Wireless interface: U-WAVE-T (IP67type/Buzzer type)

No.02AZD730D/02AZD880D

U-WAVE-R is required separately on the PC side.

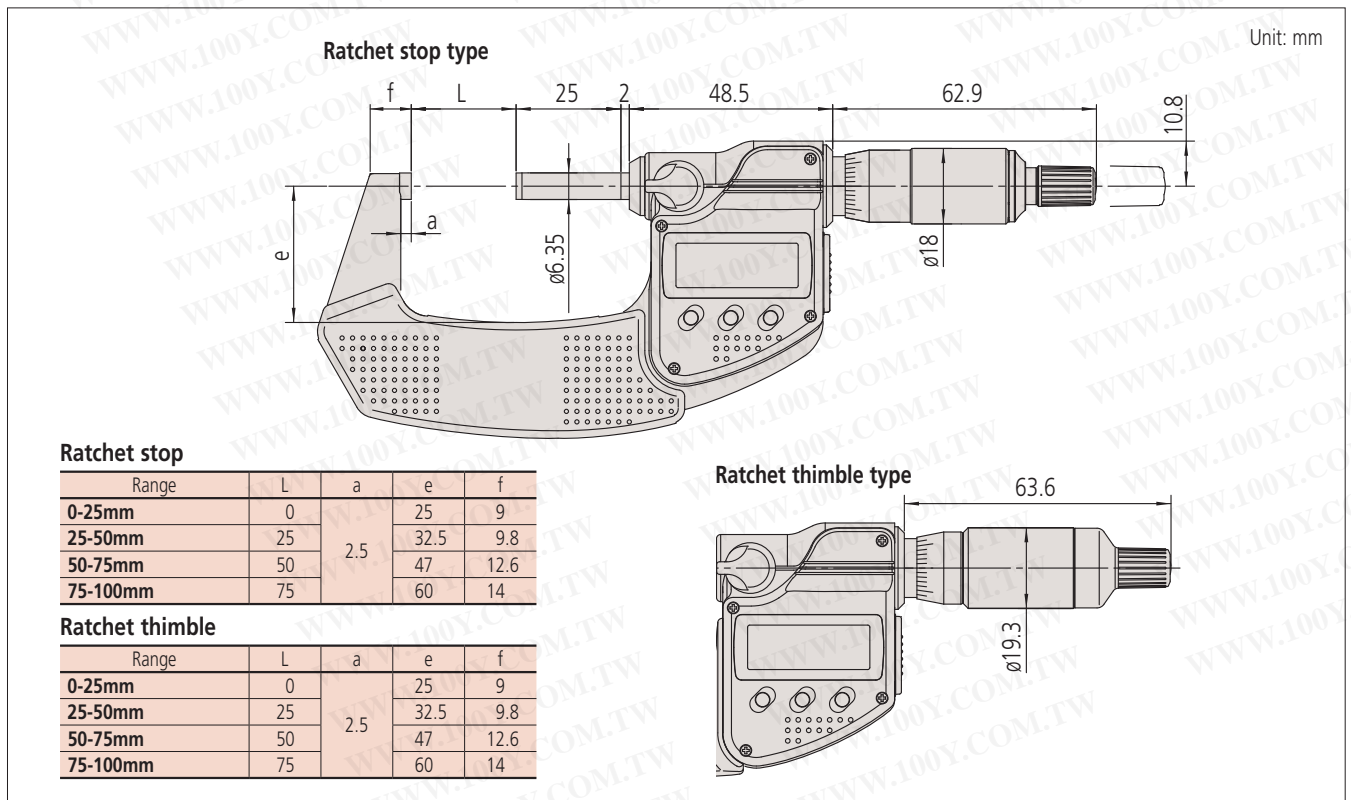
No.02AZD810D

Connecting cables for U-WAVE-T (160mm)

02AZD790B

For foot switch: 02AZE140B

## DIMENSIONS



# Digimatic outside micrometers



## Plain Function, Simple design

- Approximately 2.4-year span of battery life has been achieved, thus reducing the inconvenience of replacing the battery.
- Simple design, such as not incorporating data output, achieves low cost.
- Provided only with an origin-set button for easy origin setting.
- Two types of constant-force devices are available: Ratchet Stop and Friction Thimble.



## SPECIFICATIONS

Metric					
Order No.	Range	Resolution	Accuracy	constant-force device	Mass
293-821-30	0-25mm	0.001mm	±2µm	With ratchet thimble	270g
Inch/Metric					
Order No.	Range	Resolution	Accuracy	constant-force device	Mass
293-831-30	0-1"	.00005"/0.001mm	±.0001"	With ratchet thimble	270g
293-832-30				With friction thimble	275g

## Technical Data

- **Measuring force:** 5 -10N
- **Quantizing error:** ±1 is not included.
- **Measuring system:** Electromagnetic induction type rotary sensor
- **Battery:** SR44 (1 pc), 938882, for initial operational checks (standard accessory)
- **Battery life:** Approx. 2.4 years under normal use



293-821-30



An inspection certificate is supplied as standard.

## DIMENSIONS

