# Micrometer

The origin of Mitutoyo's trustworthy brand of small tool instruments

## V-Anvil Micrometers
## SERIES 314, 114 — 3 Flutes and 5 Flutes

MeasurLink® ENABLED
Data Management Software by Mitutoyo

- Measures the outside diameter of cutting tools (such as taps, reamers, end mills) which have three or five flutes.
- Measures pitch diameter: refer to "Quick Guide to Precision Measuring Instruments" on page B-72.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.


**314-251-30**


**114-121**


**114-102**


**114-101**

MeasurLink® ENABLED
Data Management Software by Mitutoyo

Products equipped with the measurement data output function can be connected to the measurement data network system MeasurLink (refer to page A-5 for details).

### Technical Data

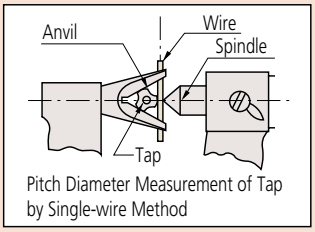
- Flatness: (**series 114**) 0.6 µm/0.000024 in (Spindle)
  1.3 µm/0.000052 in(Anvil)
  (**series 314**) 0.3 µm/0.000012 in (Spindle)
  1.0 µm/0.00004 in(Anvil)
- Battery for **series 314**
  **SR44** (1 pc.), **938882**, for initial operational checks (standard accessory)
- Battery life:Approx. 2.4 years under normal use (for **series 314**)
- Length standard: Electromagnetic rotary sensor (for **series 314**)
- Standard accessories:
  Reference bar,1 pc.
  Spanner (**301336**), 1 pc.
  (Maximum measuring range up to 55 mm/2.2 in 114-114)*1
  (Maximum measuring range up to 45 mm/1 in)*2
  Spanner (**200877**), 1 pc.
  (for maximum measuring range 70 mm or over)*1
  (for maximum measuring range 65 mm or over)*2
  *1 For analog type with 3-flute cutting tools.
  *2 For analog type with 5-flute cutting tools.
- Setting Standards for V-Anvil Micrometer

### Optional Accessories

- Connecting cables for **series 314**
  1 m: **05CZA662**
  2 m: **05CZA663**
- USB Input Tool Direct
  **USB-ITN-B** (2 m): **06AFM380B**
- **U-WAVE-T** dedicated connection cable
  160 mm: **02AZD790B**
  For foot switch: **02AZE140B**
  Refer to page A-25 for details.

### Wireless Data Output U-WAVE fit

- **U-WAVE-TM** **264-622** (IP67 type)
  **264-623** (Buzzer type)
- Connecting unit for **U-WAVE-TM**
  **02AZF310** (IP67/buzzer type common specification)
  Refer to page A-15 for details.




Pitch Diameter Measurement of Tap by Single-wire Method

## SPECIFICATIONS

**Metric** For 3-flute cutting tools

| Order No. | Range (mm) | Resolution (mm) | Accuracy* (µm) | Anvil | Remarks |
|---|---|---|---|---|---|
| Digimatic (LCD) | | | | | |
| **314-251-30** | 1 - 15 | 0.001 | ±4 | 60° | w/groove |
| **314-252-30** | 10 - 25 | | | | |
| **314-253-30** | 25 - 40 | | ±5 | | — |
| **314-261-30** | 1 - 15 | | ±4 | | — |
| **314-262-30** | 10 - 25 | | | | — |

* Excluding quantizing error of ±1 count

**Metric** For 3-flute cutting tools

| Order No. | Range (mm) | Graduation (mm) | Accuracy (µm) | Anvil | Remarks |
|---|---|---|---|---|---|
| Analog Anvil, Spindle (With carbide tip) | | | | | |
| **114-204** | 2.3 - 25 | 0.01 | ±4 | 60° | — |
| Analog Spindle (With carbide tip) | | | | | |
| **114-101** | 1 - 15 | | ±4 | | w/groove |
| **114-102** | 10 - 25 | | | | |
| **114-103** | 25 - 40 | | ±5 | | — |
| **114-104** | 40 - 55 | | ±6 | | — |
| **114-105** | 55 - 70 | | | | — |
| **114-106** | 70 - 85 | | ±7 | | — |
| **114-161** | 1 - 15 | | ±4 | | — |
| **114-162** | 10 - 25 | | | | — |

**Metric** For 5-flute cutting tools

| Order No. | Range (mm) | Graduation (mm) | Accuracy (µm) | Anvil | Remarks |
|---|---|---|---|---|---|
| Analog Anvil, Spindle (With carbide tip) | | | | | |
| **114-137** | 2.3 - 25 | 0.01 | ±4 | 108° | — |
| Analog Spindle (With carbide tip) | | | | | |
| **114-121** | 5 - 25 | | ±4 | | w/groove |
| **114-122** | 25 - 45 | | ±5 | | — |
| **114-123** | 45 - 65 | | ±6 | | — |
| **114-124** | 65 - 85 | | ±7 | | — |
| **114-165** | 5 - 25 | | ±4 | | — |

Note: For functional details of **series 314** refer to page B-8. Please note that these models are not water-proof, and that origin setting is by presetting. Optional connecting cable is available only for water-proof type (Digimatic model).

**Inch / Metric** For 3-flute cutting tools

| Order No. | Range (in) | Resolution | Accuracy* (in) | Anvil | Remarks |
|---|---|---|---|---|---|
| Digimatic (LCD) | | | | | |
| **314-351-30** | 0.05 - 0.6 | 0.00005 in/ 0.001 mm | ±0.0002 | 60° | w/groove |
| **314-352-30** | 0.4 - 1 | | | | |
| **314-353-30** | 1 - 1.6 | | ±0.00025 | | — |
| **314-361-30** | 0.05 - 0.6 | | ±0.0002 | | — |
| **314-362-30** | 0.4 - 1 | | | | — |

* Excluding quantizing error of ±1 count

**Inch** For 3-flute cutting tools

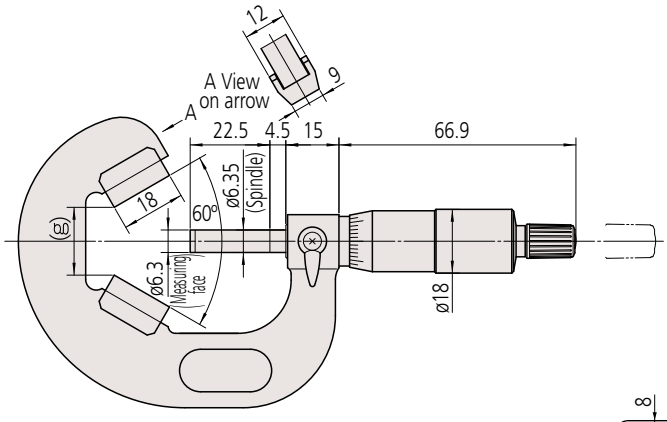
| Order No. | Range (in) | Graduation (in) | Accuracy (in) | Anvil | Remarks |
|---|---|---|---|---|---|
| Analog Anvil, Spindle (With carbide tip) | | | | | |
| **114-202** | 0.09 - 1 | 0.0001 | ±0.0002 | 60° | — |
| Analog Spindle (With carbide tip) | | | | | |
| **114-163** | 0.05 - 0.6 | 0.001 | ±0.0002 | | — |
| **114-113** | 1 - 1.6 | | ±0.00025 | | — |
| **114-114** | 1.6 - 2.2 | | ±0.0003 | | — |

**Inch** For 5-flute cutting tools

| Order No. | Range (in) | Graduation (in) | Accuracy (in) | Anvil | Remarks |
|---|---|---|---|---|---|
| Analog Anvil,Spindle (With carbide tip) | | | | | |
| **114-135** | 0.09 - 1 | 0.0001 | ±.0002 | 108° | — |

## DIMENSIONS

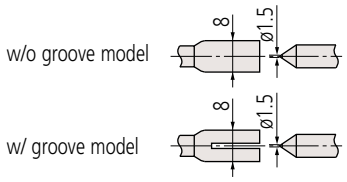
Unit: mm

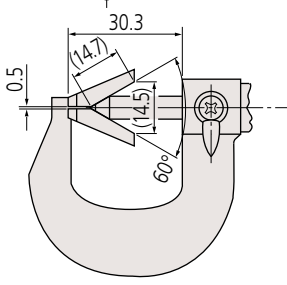



**114-103**

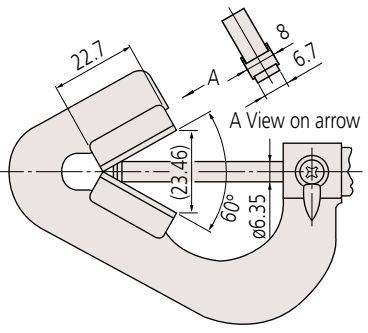
For 3-flute cutting tools

| Range (mm) | (g) |
|---|---|
| 10 - 25 | 6.2 |
| 25 - 40 | 19.14 |
| 40 - 55 | 32.13 |
| 55 - 70 | 45.12 |
| 70 - 85 | 58.11 |




**114-101**




**114-204**