

Micrometer

Digit Outside Micrometers  
SERIES 193

- Mechanical digit counter with 0.01 mm or 0.001 in resolution for quick and error-free reading.
- Counter resolution 0.01 mm
- Measuring faces: Carbide tipped
- Equipped with Ratchet Stop for constant measuring force.



193-101

SPECIFICATIONS

| Metric                     | With ratchet stop       |                                                                  |               |                  |                                             |
|----------------------------|-------------------------|------------------------------------------------------------------|---------------|------------------|---------------------------------------------|
| Code No.                   | Range (mm)              | Maximum permissible error $J_{MPE}$ (μm)                         | Flatness (μm) | Parallelism (μm) | Graduation (mm)                             |
| 193-111                    | 0 - 25                  | ±2                                                               | 0.6           | 2                | 0.001<br>(reading is obtained with vernier) |
| 193-112                    | 25 - 50                 |                                                                  |               |                  |                                             |
| 193-113                    | 50 - 75                 |                                                                  |               |                  |                                             |
| 193-114                    | 75 - 100                | ±3                                                               |               |                  |                                             |
| 193-101                    | 0 - 25                  | ±2                                                               |               | 2                | 0.01                                        |
| 193-102                    | 25 - 50                 |                                                                  |               |                  |                                             |
| 193-103                    | 50 - 75                 |                                                                  |               | 3                |                                             |
| 193-104                    | 75 - 100                |                                                                  |               |                  |                                             |
| Inch With friction thimble |                         |                                                                  |               |                  |                                             |
| Code No.                   | Range (in)              | Maximum permissible error $J_{MPE}$ (in)                         | Flatness (in) | Parallelism (in) | Graduation (in)                             |
| 193-211                    | 0 - 1                   | ±0.0001                                                          | 0.000024      | 0.00008          | 0.0001                                      |
| 193-212                    | 1 - 2                   |                                                                  |               |                  |                                             |
| Inch With ratchet stop     |                         |                                                                  |               |                  |                                             |
| Code No.                   | Range (in)              | Maximum permissible error $J_{MPE}$ (in)                         | Flatness (in) | Parallelism (in) | Graduation (in)                             |
| 193-213                    | 2 - 3                   | ±0.0001                                                          | 0.000024      | 0.00008          | 0.0001                                      |
| 193-214                    | 3 - 4                   | ±0.00015                                                         |               | 0.00012          |                                             |
| Metric                     | Micrometer set          |                                                                  |               |                  |                                             |
| Code No.                   | Range (mm)              | Models included                                                  |               | Flatness (μm)    | Parallelism (μm)                            |
| 193-901                    | 0 - 75<br>(3 pcs./set)  | • 193-101, 193-102, 193-103<br>• 2 micrometer standards          |               | 0.6              | 2                                           |
| 193-902                    | 0 - 100<br>(4 pcs./set) | • 193-101, 193-102, 193-103, 193-104<br>• 3 micrometer standards |               |                  | 3                                           |
| Inch                       | Micrometer set          |                                                                  |               |                  |                                             |
| Code No.                   | Range (in)              | Models included                                                  |               | Flatness (in)    | Parallelism (in)                            |
| 193-923                    | 0 - 3<br>(3 pcs./set)   | • 193-211, 193-212, 193-213<br>• 2 micrometer standards          |               | 0.000024         | 0.00008                                     |

• Standard accessories: Setting standard, 1 pc. (except for measuring range 0 to 25 mm (0 to 1 in) models), Spanner (301336), 1 pc.

Measurement example



- 193-901**
- Range: 0 - 75 mm
  - Graduation: 0.01 mm
  - Models included: 193-101, 193-102, 193-103  
2 micrometer standards



- 193-902**
- Range: 0 - 100 mm
  - Graduation: 0.01 mm
  - Models included: 193-101, 193-102, 193-103, 193-104  
3 micrometer standards