

Tubular Inside Micrometers

SERIES 133 — Single-Rod Type

Technical Data

Accuracy: Refer to the list of specifications.
Graduation: 0.01mm or .001"

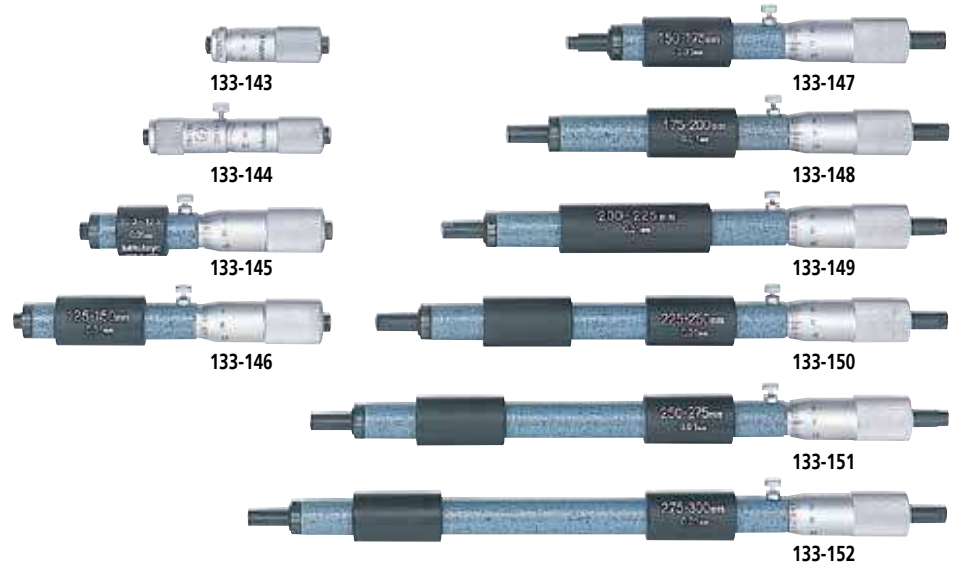
Optional Accessories

-----: Setting ring (See page C-29.)



FEATURES

- With locking clamp.
- Zero point can be readjusted by rotating the micrometer head sleeve. A key wrench is supplied.
- Clear, crisp graduations on the satin-chrome finished micrometer head.
- Carbide-tipped measuring faces.
- Supplied in fitted plastic case. Over 200mm / 8" supplied in wooden case.



SPECIFICATIONS

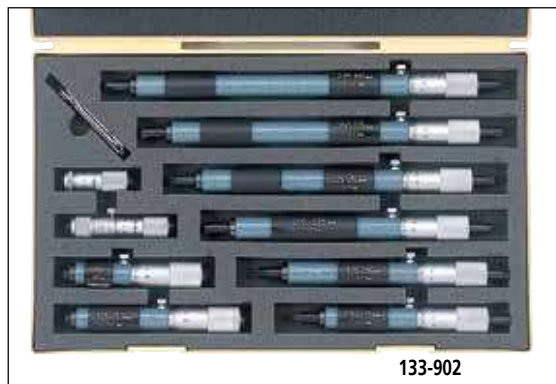
| Metric Individual | | |
|-------------------|-----------|----------|
| Range | Order No. | Accuracy |
| 50 - 75mm | 133-143 | ±3µm |
| 75 - 100mm | 133-144 | ±4µm |
| 100 - 125mm | 133-145 | ±5µm |
| 125 - 150mm | 133-146 | ±5µm |
| 150 - 175mm | 133-147 | ±5µm |
| 175 - 200mm | 133-148 | ±5µm |
| 200 - 225mm | 133-149 | ±5µm |
| 225 - 250mm | 133-150 | ±6µm |
| 250 - 275mm | 133-151 | ±6µm |
| 275 - 300mm | 133-152 | ±6µm |
| 300 - 325mm | 133-153 | ±7µm |
| 325 - 350mm | 133-154 | ±7µm |
| 350 - 375mm | 133-155 | ±7µm |
| 375 - 400mm | 133-156 | ±8µm |
| 400 - 425mm | 133-157 | ±8µm |
| 425 - 450mm | 133-158 | ±8µm |
| 450 - 475mm | 133-159 | ±9µm |
| 475 - 500mm | 133-160 | ±9µm |
| 500 - 525mm | 133-161 | ±9µm |
| 525 - 550mm | 133-162 | ±10µm |
| 550 - 575mm | 133-163 | ±10µm |
| 575 - 600mm | 133-164 | ±10µm |
| 600 - 625mm | 133-165 | ±11µm |
| 625 - 650mm | 133-166 | ±11µm |
| 650 - 675mm | 133-167 | ±11µm |
| 675 - 700mm | 133-168 | ±12µm |

| Metric Individual | | |
|-------------------|-----------|----------|
| Range | Order No. | Accuracy |
| 700 - 725mm | 133-169 | ±12µm |
| 725 - 750mm | 133-170 | ±12µm |
| 750 - 775mm | 133-171 | ±13µm |
| 775 - 800mm | 133-172 | ±13µm |
| 800 - 825mm | 133-173 | ±13µm |
| 825 - 850mm | 133-174 | ±14µm |
| 850 - 875mm | 133-175 | ±14µm |
| 875 - 900mm | 133-176 | ±14µm |
| 900 - 925mm | 133-177 | ±15µm |
| 925 - 950mm | 133-178 | ±15µm |
| 950 - 975mm | 133-179 | ±15µm |
| 975 - 1000mm | 133-180 | ±16µm |

| Inch Individual | | |
|-----------------|-----------|----------|
| Range | Order No. | Accuracy |
| 2" - 3" | 133-223 | ±.00015" |
| 3" - 4" | 133-224 | ±.0002" |
| 4" - 5" | 133-225 | ±.00025" |
| 5" - 6" | 133-226 | ±.00025" |
| 6" - 7" | 133-227 | ±.00025" |
| 7" - 8" | 133-228 | ±.00025" |
| 8" - 9" | 133-229 | ±.00025" |
| 9" - 10" | 133-230 | ±.0003" |
| 10" - 11" | 133-231 | ±.0003" |
| 11" - 12" | 133-232 | ±.0003" |

Tubular Inside Micrometers

SERIES 133



133-902

| Metric Micrometer set | | |
|-----------------------------|-----------|--|
| Range | Order No. | Included in set |
| 50 - 150mm (4 pcs. set) | 133-901 | <ul style="list-style-type: none"> • 133-143, 133-144, 133-145, 133-146 • with fitted case |
| 50 - 300mm (10 pcs. set) | 133-902 | <ul style="list-style-type: none"> • 133-143, 133-144, 133-145, 133-146, 133-147, 133-148, 133-149, 133-150, 133-151, 133-152 • with fitted case |

| Inch Micrometer set | | |
|---------------------------|-----------|--|
| Range | Order No. | Included in set |
| 2" - 6" (4 pcs. set) | 133-903 | <ul style="list-style-type: none"> • 133-223, 133-224, 133-225, 133-226 • with fitted case |
| 2" - 12" (10 pcs. set) | 133-904 | <ul style="list-style-type: none"> • 133-223, 133-224, 133-225, 133-226, 133-227, 133-228, 133-229, 133-230, 133-231, 133-232 • with fitted case |

DIMENSIONS

Unit: mm

| Order No. | L | a | b |
|-------------------|-----|----|----|
| 133-145 / 133-225 | 100 | 5 | 3 |
| 133-146 / 133-226 | 125 | 5 | 3 |
| 133-147 / 133-227 | 150 | 18 | 15 |
| 133-148 / 133-228 | 175 | 18 | 15 |
| 133-149 / 133-229 | 200 | 18 | 15 |
| | | | |
| | | | |
| | | | |
| 133-180 / 133-232 | 975 | 18 | 15 |

Inside Micrometers

SERIES 141 — Interchangeable-Rod Type

Technical Data

Metric Model

Accuracy: $\pm(6+L/50)\mu\text{m}$
 L=Maximum measuring length (mm)
 Fraction rounded up

Inch Model

Accuracy: $\pm\{.00024 + (.00004 \times R/2)\}''$
 R=Maximum measuring length (inch)
 Fraction rounded up

Graduation: 0.01mm or .001"

Optional Accessories

----: Setting ring (See page C-29.)



141-233



FEATURES

- Wide range of ID measurements with interchangeable rods.
- Each interchangeable rod is marked with its measuring range.
- The sizes of interchangeable rods can be adjusted with spacing collars.
- Both micrometer head and furnished rods are satin-chrome finished throughout.
- Supplied in fitted plastic case. Over 1000mm / 40" supplied in wooden case.

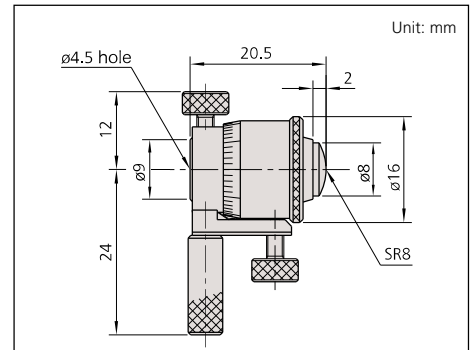


141-101



When using the extension rod

DIMENSIONS



SPECIFICATIONS

Metric

| Range | Order No. | Travel of micrometer head | Remarks |
|--------------|--------------------|---------------------------|----------------------|
| 25 - 32mm | 141-001 / 141-003* | 7mm | Micrometer Head only |
| 25 - 50mm | 141-101 / 141-103* | 7mm | with 2 rods |
| 50 - 63mm | 141-025 / 141-027* | 13mm | Micrometer Head only |
| 50 - 200mm | 141-205 / 141-211* | 13mm | with 3 rods |
| 50 - 300mm | 141-206 / 141-212* | 13mm | with 5 rods |
| 200 - 225mm | 141-009 / 141-011* | 25mm | Micrometer Head only |
| 200 - 500mm | 141-117 | 25mm | with 3 rods |
| 200 - 1000mm | 141-118 | 25mm | with 8 rods |

*with carbide-tipped face

Inch

| Range | Order No. | Travel of micrometer head | Remarks |
|------------|--------------------|---------------------------|----------------------|
| 1" - 1.25" | 141-002 / 141-004* | .25" | Micrometer Head only |
| 1" - 2" | 141-102 / 141-104* | .25" | with 2 rods |
| 2" - 2.5" | 141-026 / 141-028* | .5" | Micrometer Head only |
| 2" - 8" | 141-208 / 141-214* | .5" | with 3 rods |
| 2" - 12" | 141-233 / 141-215* | .5" | with 5 rods |
| 8" - 9" | 141-010 / 141-012* | 1" | Micrometer Head only |
| 8" - 20" | 141-121 | 1" | with 3 rods |
| 8" - 40" | 141-122 | 1" | with 8 rods |

*with carbide-tipped face

Digimatic Tubular Inside Micrometers

SERIES 337 — Extension-Rod Type / SERIES 339 — Extension-Pipe Type



FEATURES

- Wide range of ID measurements by combining extension rods (pipes) and anvils with the micrometer head.
- The 339 Series uses highly durable extension pipes.
- Carbide-tipped measuring faces.
- Supplied in wooden case.



337-303



339-304

Metric — Extension-rod type

| Range | Order No. | Travel of micrometer head | Extension rods |
|--------------|----------------|---------------------------|--|
| 200 - 225mm | 337-101 | 25mm | Micrometer Head only |
| 200 - 1000mm | 337-301 | 25mm | 25mm, 50mm, 100mm (2 pcs.), 200mm, 300mm |
| 200 - 1500mm | 337-302 | 25mm | 25mm, 50mm, 100mm, 200mm, 300mm (3 pcs.) |

Inch/Metric — Extension-rod type

| Range | Order No. | Travel of micrometer head | Extension rods |
|--------------------------|----------------|---------------------------|------------------------------|
| 8 - 9" / 203.2 - 228.6mm | 337-102 | 1" | Micrometer Head only |
| 8 - 40" / 203.2 - 1016mm | 337-303 | 1" | 1", 2", 4" (2 pcs.), 8", 12" |
| 8 - 60" / 203.2 - 1524mm | 337-304 | 1" | 1", 2", 4", 8", 12" (3 pcs.) |

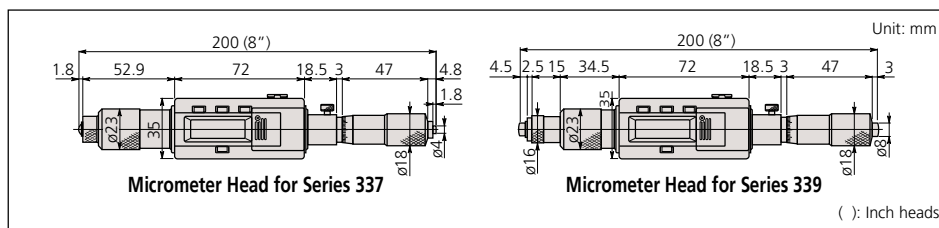
Metric — Extension-pipe type

| Range | Order No. | Travel of micrometer head | Extension pipes |
|--------------|----------------|---------------------------|---|
| 200 - 225mm | 339-101 | 25mm | Micrometer Head only |
| 200 - 1000mm | 339-301 | 25mm | 25mm, 50mm, 100mm, 200mm, 400mm |
| 200 - 2000mm | 339-302 | 25mm | 25mm, 50mm, 100mm, 200mm (2 pcs.), 400mm (3 pcs.) |

Inch/Metric — Extension-pipe type

| Range | Order No. | Travel of micrometer head | Extension pipes |
|--------------------------|----------------|---------------------------|--|
| 8 - 9" / 203.2 - 228.6mm | 339-102 | 1" | Micrometer Head only |
| 8 - 40" / 203.2 - 1016mm | 339-303 | 1" | 1", 2", 4", 8", 16" |
| 8 - 80" / 203.2 - 2000mm | 339-304 | 1" | 1", 2", 4", 8", 16" (2 pcs.), 16" (3 pcs.) |

DIMENSIONS



Technical Data

Metric Model

Accuracy: $\pm(3+n+L/50)\mu\text{m}$
 L=Maximum measuring length (mm)
 Fraction rounded up
 n=Number of rods
 Excluding quantizing error

Inch Model

Accuracy: $\pm\{.00015+.00005n+.00005R*/2\}''$
 R=Maximum measuring length (inch)
 n=Number of rods
 Fraction rounded up

Resolution: 0.001mm or .0001"/0.001mm

Display: LCD

Battery: SR44 (1 pcs.), **938882**

Battery life: Approx. 8 months under normal use

Function

Zero/ABS, Data hold, Data output, Preset, inch/mm conversion (inch/mm models)

Alarm: Low voltage, Counting value composition error

Optional Accessories

05CZA662: SPC cable (1m)

05CZA663: SPC cable (2m)

-----: Setting ring (See page C-29.)



Tubular Inside Micrometers

SERIES 137 — Extension-Rod Type

FEATURES

- Wide range of ID measurements by combining extension rods (pipes) and anvils with the micrometer head.
- Carbide-tipped measuring faces are available.
- Supplied in fitted plastic case except 1500 mm / 60" come in wooden case.



137-011



137-205

Technical Data

Metric Model

Accuracy: $\pm(3+nL/50)\mu\text{m}$
 L=Maximum measuring length (mm)
 n=Number of rods
 Fraction rounded up

Inch Model

Accuracy: $\pm\{.00015+.00005n+.00005R*/2\}''$
 R=Maximum measuring length (inch)
 n=Number of rods
 Fraction rounded up

Graduation: 0.01mm or .001"

Optional Accessories

---- : Setting ring (See page C-29.)

SPECIFICATIONS

Metric Extension-rod type

| Range | Order No. | Travel of micrometer head | Extension rods |
|-------------|--------------------|---------------------------|---|
| 50 - 63mm | 137-011 / 137-013* | 13mm | Micrometer Head only |
| 50 - 150mm | 137-201 / 137-206* | 13mm | 13mm, 25mm, 50mm |
| 50 - 300mm | 137-202 / 137-207* | 13mm | 13mm, 25mm, 50mm (2 pcs.), 100mm |
| 50 - 500mm | 137-203 / 137-208* | 13mm | 13mm, 25mm, 50mm (2 pcs.), 100mm, 200mm |
| 50 - 1000mm | 137-204 / 137-209* | 13mm | 13mm, 25mm, 50mm (2 pcs.), 100mm, 200mm (2 pcs.), 300mm |
| 50 - 1500mm | 137-205 / 137-210* | 13mm | 13mm, 25mm, 50mm (2 pcs.), 100mm, 200mm (3pcs.), 300mm (2 pcs.) |

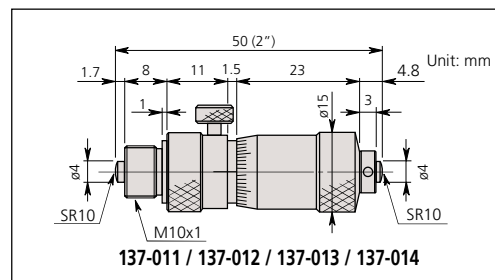
*with carbide-tipped face

Inch Extension-rod type

| Range | Order No. | Travel of micrometer head | Extension rods |
|-----------|--------------------|---------------------------|---|
| 2" - 2.5" | 137-012 / 137-014* | .5" | Micrometer Head only |
| 2" - 6" | 137-211 / 137-216* | .5" | .5", 1", 2" |
| 2" - 12" | 137-212 / 137-217* | .5" | .5", 1", 2" (2 pcs.), 4" |
| 2" - 20" | 137-213 / 137-218* | .5" | .5", 1", 2" (2 pcs.), 4", 8" |
| 2" - 40" | 137-214 / 137-219* | .5" | .5", 1", 2" (2 pcs.), 4", 8" (2 pcs.), 12" |
| 2" - 60" | 137-215 / 137-220* | .5" | .5", 1", 2" (2 pcs.), 4", 8" (3 pcs.), 12" (2 pcs.) |

*with carbide-tipped face

DIMENSIONS



Tubular Inside Micrometers

SERIES 139 — Extension-Pipe Type

FEATURES

- Wide range of ID measurements by combining extension pipes and anvils with the micrometer head.
- Supplied in fitted wooden case, except 500 mm / 20" which comes in plastic case.



Metric — Extension-pipe type

| Range | Order No. | Travel of micrometer head | Extension pipes |
|--------------|----------------|---------------------------|--|
| 100 - 125mm | 139-001 | 25mm | Micrometer Head only |
| 100 - 500mm | 139-173 | 25mm | 25mm, 50mm, 100mm, 200mm |
| 100 - 900mm | 139-174 | 25mm | 25mm, 50mm, 100mm, 200mm, 400mm |
| 100 - 1300mm | 139-175 | 25mm | 25mm, 50mm, 100mm, 200mm, 400mm (2 pcs.) |
| 100 - 1700mm | 139-176 | 25mm | 25mm, 50mm, 100mm, 200mm, 400mm (3 pcs.) |
| 100 - 2100mm | 139-177 | 25mm | 25mm, 50mm, 100mm, 200mm, 400mm (4 pcs.) |

Inch — Extension-pipe type

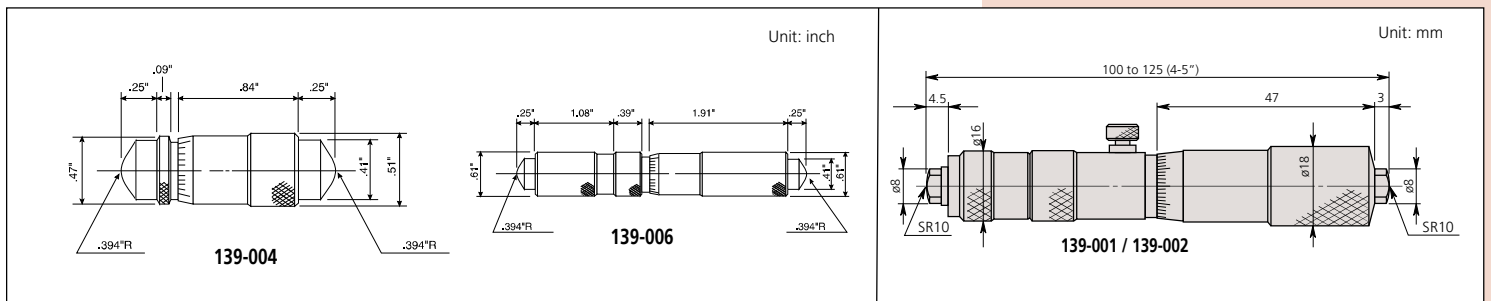
| Range | Order No. | Travel of micrometer head | Extension pipes |
|----------|----------------|---------------------------|------------------------------|
| 4" - 5" | 139-002 | 1" | Micrometer Head only |
| 4" - 20" | 139-178 | 1" | 1", 2", 4", 8" |
| 4" - 36" | 139-179 | 1" | 1", 2", 4", 8", 16" |
| 4" - 52" | 139-180 | 1" | 1", 2", 4", 8", 16" (2 pcs.) |
| 4" - 68" | 139-181 | 1" | 1", 2", 4", 8", 16" (3 pcs.) |
| 4" - 84" | 139-182 | 1" | 1", 2", 4", 8", 16" (4 pcs.) |



Inch — Extension-pipe type

| Range | Order No. | Travel of micrometer head | Extension pipes | Remarks |
|-----------|----------------|---------------------------|---|-------------------------|
| 1.5 - 2" | 139-004 | .5" | Micrometer Head only | — |
| 4 - 5" | 139-006 | 1" | Micrometer Head only | — |
| 1.5 - 12" | 139-201 | .5" | .5", 1", 2", 2.5", 3", 3.5", 4", 6" | Includes 139-004 |
| 4 - 40" | 139-202 | 1" | 1", 2", 3", 6", 9", 12", 14", 16", 17", 19" | Includes 139-006 |

DIMENSIONS



Technical Data

Metric Model

Accuracy:

- Series 139: $\pm(3+n+L/50)\mu\text{m}$
L=Maximum measuring length (mm)
n=number of rods
Fraction rounded up

Inch Model

Accuracy:

- Series 139: $\pm\{.00015+.00005n+.00005R^*/2\}''$
R=Maximum measuring length (inch)
n=number of rods
Fraction rounded up

Graduation: 0.01mm or .001"

Measurement error of micrometer head: $\pm 3\mu\text{m}$

Optional Accessories

----- : Setting ring (See page C-29.)

Tubular Inside Micrometers

SERIES 140 — Extension-Pipe Type

Technical Data

Metric Model

Accuracy: $\pm(3+n+L/50)\mu\text{m}$
 n=Number of rod,
 L=Maximum measuring length (mm),
 Fraction rounded up

Inch Model

Accuracy: $\pm\{.00015+.00005n+.00005R*2\}''$
 n=Number of rod
 R=Maximum measuring length (inch)
 Fraction rounded up

Graduation: 0.01mm or .001"

Optional Accessories

-----: Setting ring (See page C-29.)

FEATURES

- Wide range of ID measurements by combining extension rods (pipes) and anvils with the micrometer head.
- The Series 140 use highly durable/ large-diameter extension pipes.
- Supplied in fitted wooden case.

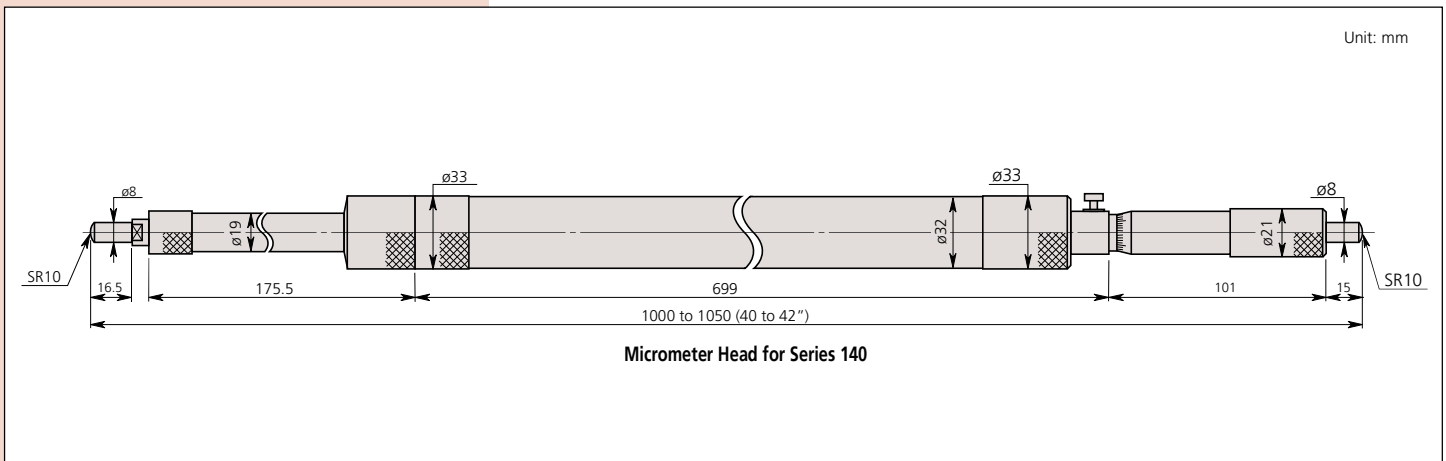
Metric Extension-pipe type

| Range | Order No. | Travel of micrometer head | Extension pipes |
|---------------|----------------|---------------------------|---|
| 1000 - 2000mm | 140-157 | 50mm | 50mm, 100mm (2 pcs.), 200mm, 500mm |
| 1000 - 3000mm | 140-158 | 50mm | 50mm, 100mm (2 pcs.), 200mm, 500mm, 1000mm |
| 1000 - 4000mm | 140-159 | 50mm | 50mm, 100mm (2 pcs.), 200mm, 500mm, 1000mm (2 pcs.) |
| 1000 - 5000mm | 140-160 | 50mm | 50mm, 100mm (2 pcs.), 200mm, 500mm, 1000mm (3 pcs.) |

Inch Extension-pipe type

| Range | Order No. | Travel of micrometer head | Extension pipes |
|------------|----------------|---------------------------|--|
| 40" - 80" | 140-161 | 2" | 2", 4" (2 pcs.), 8", 20" |
| 40" - 120" | 140-162 | 2" | 2", 4" (2 pcs.), 8", 20", 40" |
| 40" - 160" | 140-163 | 2" | 2", 4" (2 pcs.), 8", 20", 40" (2 pcs.) |
| 40" - 200" | 140-164 | 2" | 2", 4" (2 pcs.), 8", 20", 40" (3 pcs.) |

DIMENSIONS



Inside Micrometers

SERIES 345, 145 — Caliper Type

FEATURES

- Caliper-type jaws are made of high-grade, tool steel.
- Locking clamp for positive locking of spindle.
- Non-slip grip finish (digital models)
- Satin-chrome finished.
- A special holder is available to be used with Mitutoyo micrometer stand.
- Supplied in fitted plastic case. Over 175mm / 4" supplied in wooden case.



SPECIFICATIONS

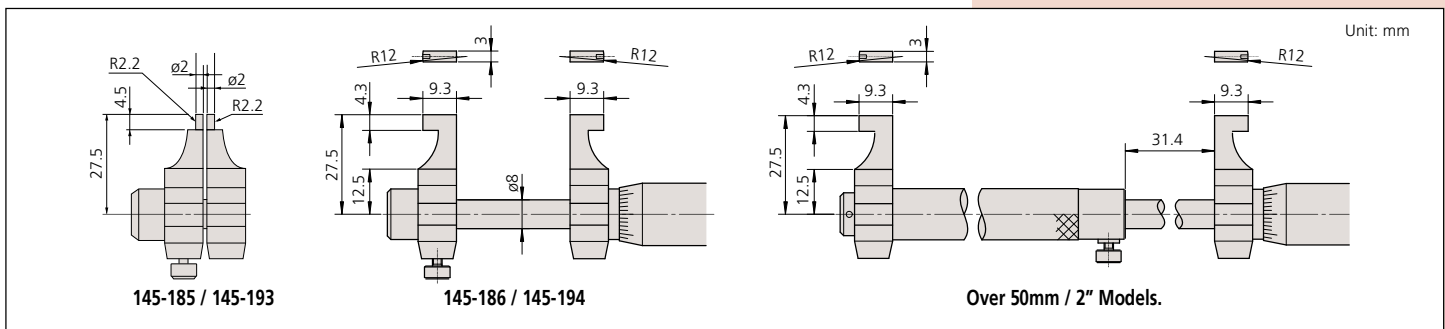
| Metric | | |
|-----------|------------|----------|
| Range | Order No. | Accuracy |
| 5 - 30mm | 345-250-30 | ±5µm |
| 25 - 50mm | 345-251-30 | ±6µm |

| Metric | | |
|-------------|-----------|----------|
| Range | Order No. | Accuracy |
| 5 - 30mm | 145-185 | ±5µm |
| 25 - 50mm | 145-186 | ±6µm |
| 50 - 75mm | 145-187 | ±7µm |
| 75 - 100mm | 145-188 | ±8µm |
| 100 - 125mm | 145-189 | ±9µm |
| 125 - 150mm | 145-190 | ±9µm |
| 150 - 175mm | 145-191 | ±10µm |
| 175 - 200mm | 145-192 | ±10µm |
| 200 - 225mm | 145-217 | ±11µm |
| 225 - 250mm | 145-218 | ±11µm |
| 250 - 275mm | 145-219 | ±12µm |
| 275 - 300mm | 145-220 | ±12µm |

| Inch/Metric Digital model | | |
|---------------------------|------------|----------|
| Range | Order No. | Accuracy |
| .2 - 1.2" / 5-30mm | 345-350-30 | ±.00025" |
| 1 - 2" / 25-50mm | 345-351-30 | ±.0003" |

| Inch | | |
|-----------|-----------|----------|
| Range | Order No. | Accuracy |
| .2 - 1.2" | 145-193 | ±.00025" |
| 1 - 2" | 145-194 | ±.0003" |
| 2 - 3" | 145-195 | ±.00035" |
| 3 - 4" | 145-196 | ±.0004" |

DIMENSIONS



Technical Data

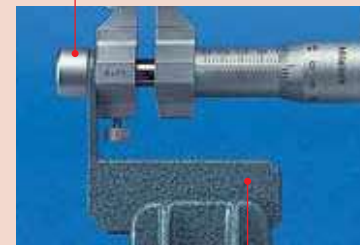
Accuracy: Refer to the list of specifications.
(excluding quantizing error for digital models)
Resolution*: 0.01mm or .00005"/0.001mm
Graduation**: 0.01mm or .001"
Measuring faces: Carbide tipped
Display*: LCD
Battery*: SR44 (1 pc.), **938882**
Battery life*: Approx. 2.4 years under normal use
*Digital models **Analog models

Function of Digital Model

Origin-set, Zero-setting, Data hold, Data output, inch/mm conversion (inch/mm models)
Function Lock, 2 Presets
Alarm: Low voltage, Counting value composition error

Optional Accessories

- 05CZA662**: SPC cable with data switch 1m / 40"
- 05CZA663**: SPC cable with data switch 2m / 80"
- : Setting ring (See page C-29.)
- 300401**: Cap for stand holder
- 300400**: Stand holder



Holder



Inside Micro Checker

SERIES 515

FEATURES

- The Inside Micro Checker is designed to efficiently check the zero point of a tubular inside micrometer.
- Each measuring block is made of zirconia-based ceramic and is free from deterioration and dimensional changes over time.



515-585



Standard accessory

Technical Data

Block pitch accuracy: $\pm(1+L/150)\mu\text{m}$
 L= Length to check (mm)

Standard Accessories

- 611671-02: Auxiliary Block (10mm)
- 940286: Clamping element with V-rest
- 602195: Spacer (for $\varnothing 8\text{mm}$ measuring anvil)

Optional Accessories

- 602160: Wooden case for 300mm Inside Micro Checker
- 602163: Wooden case for 600mm Inside Micro Checker



SPECIFICATIONS

| Range | Order No. | Length to check |
|-------|-----------|---|
| 300mm | 515-585 | 25, 50, 75, 100, 125, 150, 175, 200, 225, 250, 275, 300mm |
| 600mm | 515-586 | 25, 50, 75, 100, 125, 150, 175, 200, 225, 250, 275, 300, 325, 350, 375, 400, 425, 450, 475, 500, 525, 550, 575, 600mm |

DIMENSIONS

