

MICROMETERS MICROMETER HEADS

B



Micrometers



Micrometer Heads



Contents

Micrometers

High Accuracy Micrometer	B-03
QuantuMike Fast Action Micrometer	B-05
Micrometers	B-07
Quickmike Micrometer	B-11
Adjustable Measuring Force Micrometer	B-13
Ratchet Thimble Micrometer	B-15
Economy Micrometers	B-16
Mechanical Counter Micrometer	B-19
Non-Rotating Spindle Micrometer	B-20
Interchangeable Anvil Micrometers	B-21
Anvil Extension Collar Micrometers	B-24
Caliper Anvil Micrometers	B-27
Interchangeable Anvil Universal Micrometer	B-29
Screw Thread Micrometer	B-30
Interchangeable Anvil Screw Thread Micrometers	B-31
Three-Wire Units	B-33
Paper Thickness Micrometer	B-34
Disc Micrometers	B-35
Interchangeable Anvil Gear Tooth Micrometers	B-37
Non-Rotating Spindle Disc Micrometers	B-39
Sheet Metal Micrometers	B-41
Tube Micrometers	B-43
Spline Micrometers	B-46
Point Micrometers	B-48
V-Anvil Micrometers	B-50
Blade Micrometers	B-53
Can Seam Micrometers	B-55
Hub/Wire Micrometers	B-56
Crimp Height Micrometers	B-57
Uni-Mike Interchangeable Anvil Micrometers	B-58
Indicating Micrometer	B-59
Dial Snap Meter	B-60
Groove Micrometers	B-61
Quick-Mini	B-63
Small Hole Gauge Set	B-64
Telescoping Gauge Set	B-65
Optional Accessories	B-66

Micrometer Heads

Selection Guide	B-73
Rotatable Display Micrometer Head	B-74
Micrometer Head	B-75
Differential Screw Micrometer Head	B-76
Small Micrometer Heads	B-77
Adjustable Thimble Small Standard Micrometer Head	B-80
Locking Screw Micrometer Head	B-81
Carbide Tipped Spindle Micrometer Heads	B-82
ø8 mm Spindle Medium Standard Micrometer Head	B-84
Large Diameter Thimble Micrometer Head	B-85
XY-Stage Micrometer Head	B-86
Non-Rotating Spindle Micrometer Head	B-87
Large Diameter Thimble High Accuracy Micrometer Head	B-88
Large Diameter Thimble Non-Rotating Micrometer Head	B-89
Micro Jack	B-90

Micrometers

SERIES 293 – ABSOLUTE Digimatic High-Accuracy Micrometer

- A world-leading 0.1 µm resolution makes this micrometer ideal for customers who need to make highly accurate measurements with a hand-held tool.
- The High-Accuracy Digimatic Micrometer utilizes Mitutoyo's innovative 0.1 µm resolution ABS (absolute) rotary sensor*1 and high-accuracy screw machining technology to reduce the instrumental error to ±0.5 µm, delivering higher accuracy without sacrificing operability.
- A highly rigid frame and high-performance constant-force mechanism*1 enable more stable measurement, while the clicks emitted while the workpiece is being measured assure the operator that measurement is proceeding normally.
- Transfer of body heat to the instrument is reduced by a (removable) heat shield, minimizing error caused by thermal expansion of the frame when performing handheld measurements.
- The ABS sensor also eliminates the need to perform origin setting each time the power is turned on, letting you start measuring straight away. With no possibility of overspeed errors, this micrometer also delivers a higher level of reliability.
- A range of features enables flexible measurement, including switchable resolution (0.0001/0.0005 mm), function lock and preset.

*1 Patent pending in Japan, the United States of America, the European Union, and China.

ABSOLUTE



293-130

Specifications

Code No.	Range	Resolution	Accuracy*2	Measuring surface	Mass	Price
293-130	0-1" (0-25.4 mm)	.000005" / .00002" (0.0001/0.0005 mm) switchable	±.00002" (±0.5 µm)	ø3.2 mm	400 g	£1520.00

*2 Excluding quantizing error.

Technical Data

Measuring force:	7 to 9N
Power supply:	Lithium battery (CR2032) x 1
Battery life:	Approx. two years when used under normal conditions

Functions

Preset (ABS measurement system):

The measurement origin can be preset to any value within the display range for convenience in measuring.

Zero-setting (INC measurement system):

The display can be zeroed at any position of the spindle, making comparison measurement easier. Returning to the absolute-measurement mode is easily accomplished.

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 when the instrument must be moved away from the workpiece before the reading can be recorded.

Resolution switching:

The resolution of the display can be switched. If 0.1 µm measurement is not required, the resolution can be switched to 0.5 µm.

Function lock:

Functions such as preset or zero-set can be locked to avoid inadvertently changing the origin position.

On/off:

The power can be turned off after measurement is complete. Even after the power is turned off, the origin or last zero-set position remains in the memory.

Auto power off:

Even if the power is left on, the power turns off automatically if the micrometer is not used within a 20-minute period.

Measurement data output:

Measurement data can be output, allowing easy incorporation of this instrument into a statistical process control or measurement system.

Error alarm:

In the unlikely event of a display overflow or calculation error, an error message is displayed and measurement stops. Measurement cannot continue until the error is corrected. Also, if the battery voltage drops below a certain point, the battery indicator will turn on before measurement becomes impossible, warning the user that the battery needs to be replaced.



Function lock (circled red).

Standard Accessories

- 04AAB969B:** Heat shield
- CR2032:** Lithium battery
- 200877:** Spanner
- 04AAB985:** Screwdriver
- Lens paper (for the display)
- Inspection certificate

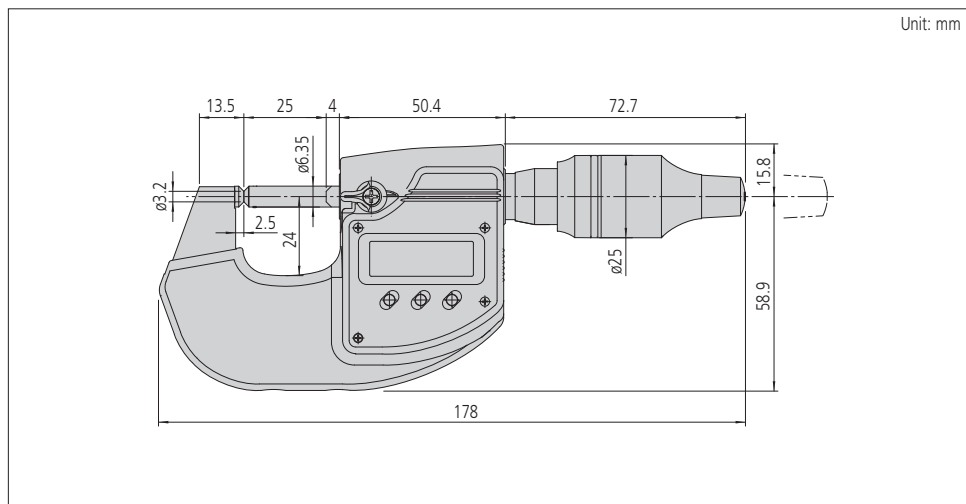


Heat shield (Patent pending in Japan, the United States of America, the European Union, and China).



With heat shield attached.

Dimensions

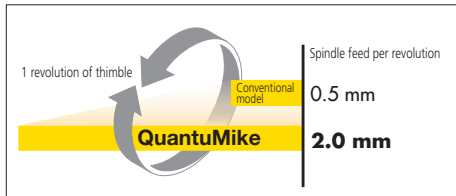


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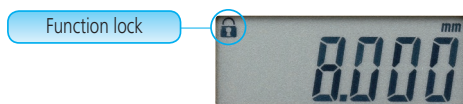
Micrometers

SERIES 293 – QuantuMike Fast Action Waterproof Digimatic Micrometer

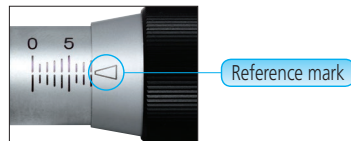
- Advanced pioneering technology has created the next generation of micrometer, the most revolutionary advance in micrometer technology since James Watt invented the instrument.
- Faster measurement is achieved by using a coarser thread which feeds the spindle by 2 mm per revolution of the thimble. This increase in thread lead has been made possible thanks to new high precision thread-cutting and testing techniques.



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



- A graduated scale is provided on the sleeve for use with a reference mark on the thimble so that every millimetre displacement can be checked to provide extra confidence.



- Those models that provide data output allow easy incorporation of this instrument into a statistical process control or measurement system.
- There is a choice of convenient Interface Input Tools which enable the conversion of measurement data to keyboard signals for direct input to cells in off-the-shelf spreadsheet software such as Excel.
- Excellent resistance against oil, water and dust (IP65 protection level) enables this product to be used in machining situations that include splashing coolant fluid.
- Measuring faces: Carbide.



Specifications

Inch/Metric						
Code No.	Range	Resolution	Accuracy*1	Flatness	Parallelism	Price
With SPC data output						
293-180	0-1" (0-25.4 mm)	.00005" (0.001 mm)	±.00005" (±1 μm)	.000012" (0.3 μm)	.00004" (1 μm)	£286.00
293-181	1-2" (25.4-50.8 mm)				£305.00	
293-182	2-3" (50.8-76.2 mm)				.00008" (2 μm)	£343.00
293-183	3-4" (76.2-101.6 mm)				£381.00	
Without SPC data output						
293-185	0-1" (0-25.4 mm)	.00005" (0.001 mm)	±.00005" (±1 μm)	.000012" (0.3 μm)	.00004" (1 μm)	£192.00
293-186	1-2" (25.4-50.8 mm)				£240.00	
293-187	2-3" (50.8-76.2 mm)				.00008" (2 μm)	£280.00
293-188	3-4" (76.2-101.6 mm)				£307.00	

*1 Excluding quantizing error.

Technical Data

Dust/Water protection level:	IP65 (IEC60529)*2
Measuring force:	7 to 12N
Length standard:	Electromagnetic rotary sensor
Battery life:	Approx. 1.2 years under normal use
Standard accessories:	Setting standard 1 pc (except for 0-1" models) Button type silver oxide battery (SR44, 938882), 1 pc Spanner (301336), 1 pc

*2 Anti-corrosion treatment is required after use.

Functions

Origin point setting (ABS measurement system): Pressing the ORIGIN button resets the ABS origin at the current spindle position.

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 when the instrument must be moved away from the workpiece before the reading can be recorded.

Function lock: 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.

Auto power ON/OFF: The reading on the LCD disappears after this instrument is idle for approx. 20 minutes, but the origin point is retained. Turning the spindle causes the reading to reappear.

Data output: Models equipped with this function have an output port for transferring measurement data to a Statistical Process Control (SPC) system.

Error alarm: In the unlikely event of a display overflow or calculation error, an error message is displayed and measurement stops. Measurement cannot continue until the error is corrected. Also, if the battery voltage drops below a certain point, the battery indicator will turn on before measurement becomes impossible, warning the user that the battery needs to be replaced.

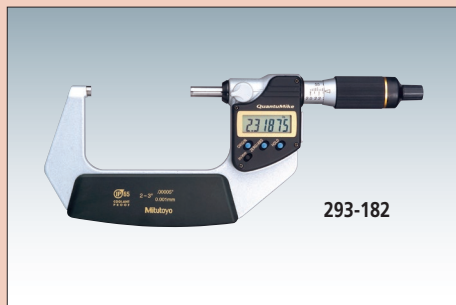
Optional Accessories*1

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00

*1 Only for models with data output function.



293-181

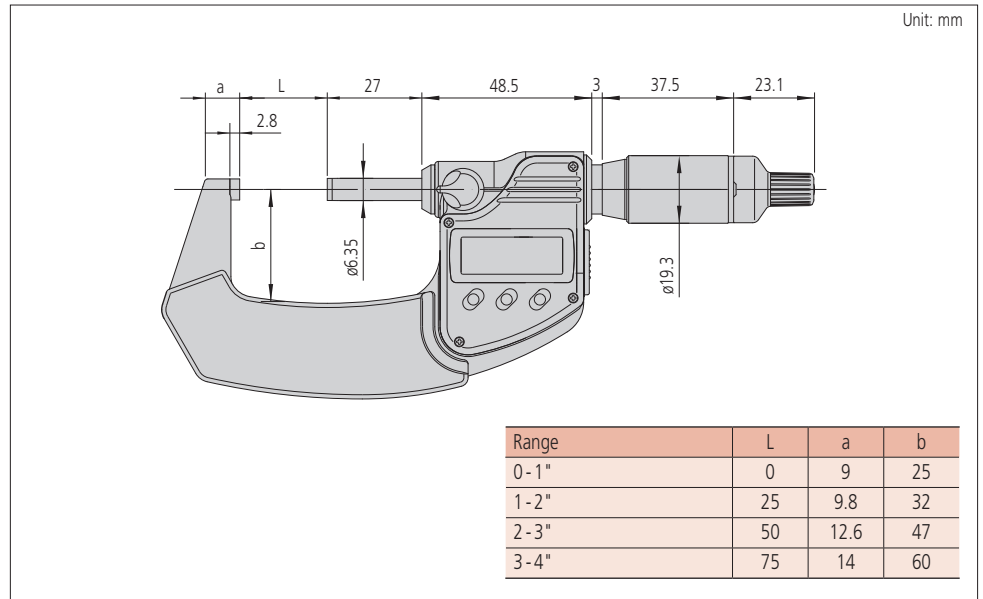


293-182



293-183

Dimensions



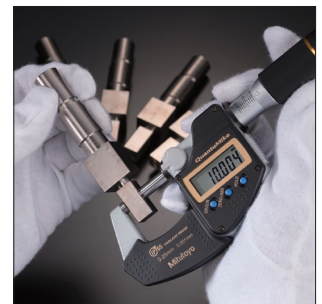
Patented ratchet thimble mechanism*2

The patented ratchet thimble mechanism helps ensure repeatable results by transmitting micro-vibrations 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.

*2 Patent registered (Japan, USA, China, Germany, UK and France).



Ratchet-induced micro-vibrations along the spindle help ensure repeatable measurements.

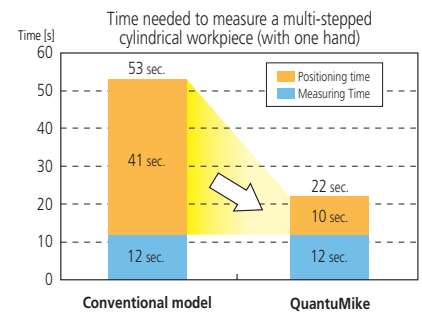


Measuring time on a multi-stepped workpiece with one hand



Thanks to the quick movement, positioning times are reduced by 60%*3 and measuring times by 35%*3 compared with a conventional micrometer.

*3 According to Mitutoyo's comparison test data for measuring time on typical workpieces.



Micrometers

SERIES 293 – IP65 Digimatic Micrometer

- Based on new waterproof structural technology, this micrometer provides IP65 protection levels, enabling use in environments that include cutting oil, etc.*1
- $\pm 1 \mu\text{m}$ instrumental error (75 mm/3" or less measuring range models).
- Measuring data output function is available with a water-resistant data cable to maintain the IP65 protection level.
- Oil-resistant materials are used in all plastic components.
- Auto power ON/OFF function.
- Further-Increased operability thanks to easy-to-read LCD with 30% more character area.
- Models equipped with a Digimatic output port can form part of a statistical process control or networked measurement system.
- Interface Input Tools are available that enable the conversion of measurement data to keyboard signals that are then directly input to cells in off-the-shelf spreadsheet software such as Excel.
- Two types of constant-force devices are available: Ratchet Stop and Ratchet Thimble.
- Measuring faces: Carbide.

*1 Anti-corrosion treatment is required after use.



Dust- and
Waterproof
IP65
www.tlv.com
ID: 401207400



293-230-30



293-334-30



Technical Data

Flatness:	.000012" / 0.3 μm
Dust/water	
protection level:	IP65 (IEC60529) *2
Measuring force:	5 to 10N
Battery life:	Approx. 1.2 years under normal use
Standard accessories:	Setting standard, 1 pc (except for 0-25 mm (0-1") models) Button type silver oxide battery (SR44, 938882), 1 pc Spanner (301336), 1 pc

*2 Anti-corrosion treatment is required after use.

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

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 the unlikely event of a display overflow or calculation error, an error message is displayed and measurement stops. Measurement cannot continue until the error is corrected. Also, if the battery voltage drops below a certain point, the battery indicator will turn on before measurement becomes impossible, warning the user that the battery needs to be replaced.

Function lock*3:
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.

*3 All-digit preset type only.



Optional Accessories*1

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00

*1 Only for models with data output function.



There are dedicated SPC data cables for Coolant Proof micrometers.

Range	L	a	b	c
0-1"	0	2.8	9	25
1-2"	25	2.8	9.8	32
2-3"	50	2.8	12.6	47
3-4"	75	2.8	14	60
4-5"	132.8	5.3	16.7	76
5-6"	158.2	5.7	18.8	90
6-7"	183.6	6.1	19.1	102
7-8"	208.8	6.3	18.2	115
8-9"	234.2	6.7	16.8	127
9-10"	258	5.5	18	139
10-11"	284	6.5	18	152
11-12"	309	6.5	18	166

Specifications

Metric							
Code No.	Range	Resolution	Accuracy*2	Parallelism	Constant-force device	Mass	Price
With SPC data output							
293-230-30	0-25 mm	0.001 mm	±1 µm	1 µm	Ratchet stop	270 g	£238.00
293-231-30	25-50 mm					330 g	£253.00
293-232-30	50-75 mm		470 g	£289.00			
293-233-30	75-100 mm		±2 µm	2 µm		625 g	£312.00

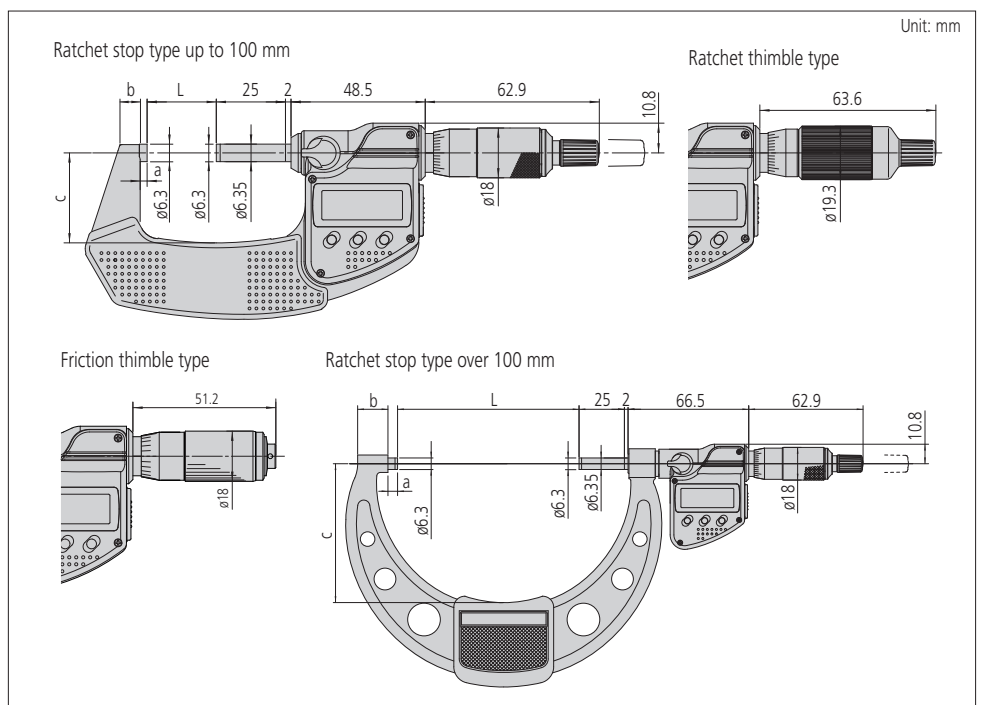
Inch/Metric							
Code No.	Range	Resolution	Accuracy*2	Parallelism	Constant-force device	Mass	Price
With SPC data output							
293-330-30	0-1" (0-25.4 mm)	.00005" (0.001 mm)	±0.0005" (±1 µm)	.00004" (1 µm)	Ratchet stop	270 g	£238.00
293-331-30	1-2" (25.4-50.8 mm)					330 g	£253.00
293-332-30	2-3" (50.8-76.2 mm)		470 g	£289.00			
293-333-30	3-4" (76.2-101.6 mm)		±0.001" (±2 µm)	.00008" (2 µm)		625 g	£312.00
293-350-30	4-5" (101.6-127.0 mm)	.0001" (0.001 mm)	±0.00015" (±3 µm)		.00012" (3 µm)	Ratchet stop	600 g
293-351-30	5-6" (127.0-152.4 mm)			740 g			£455.00
293-352-30	6-7" (152.4-177.8 mm)			800 g			£495.00
293-353-30	7-8" (177.8-203.2 mm)		±0.0002" (±4 µm)	.00016" (4 µm)	970 g		£506.00
293-354-30	8-9" (203.2-228.6 mm)				1100 g		£518.00
293-355-30	9-10" (228.6-254.0 mm)		.0002" (5 µm)		1270 g		£529.00
293-356-30	10-11" (254.0-279.4 mm)				1340 g		£541.00
293-357-30	11-12" (279.4-304.8 mm)			1540 g	£564.00		
293-334-30	0-1" (0-25.4 mm)		±0.0005" (±1 µm)	.00004" (1 µm)	Ratchet thimble	275 g	£238.00
293-335-30	0-1" (0-25.4 mm)	.00005" (0.001 mm)			Friction thimble	275 g	£288.00
293-336-30	1-2" (25.4-50.8 mm)					335 g	£253.00

Without SPC data output							
Code No.	Range	Resolution	Accuracy*2	Parallelism	Constant-force device	Mass	Price
293-340-30	0-1" (0-25.4 mm)	.00005" (0.001 mm)	±0.0005" (±1 µm)	.00004" (1 µm)	Ratchet stop	270 g	£180.00
293-341-30	1-2" (25.4-50.8 mm)					330 g	£225.00
293-342-30	2-3" (50.8-76.2 mm)		470 g	£265.00			
293-343-30	3-4" (76.2-101.6 mm)		±0.0001" (±2 µm)	.00008" (2 µm)		625 g	£298.00
293-344-30	0-1" (0-25.4 mm)	±0.0005" (±1 µm)	.00004" (1 µm)		Ratchet thimble	275 g	£180.00
293-345-30	1-2" (25.4-50.8 mm)			335 g		£225.00	
293-346-30	2-3" (50.8-76.2 mm)			475 g		£265.00	
293-347-30	3-4" (76.2-101.6 mm)	±0.0001" (±2 µm)	.00008" (2 µm)		639 g	£298.00	
293-348-30	0-1" (0-25.4 mm)	±0.0005" (±1 µm)			.00004" (1 µm)	Friction thimble	275 g

*2 Excluding quantizing error.

Note: All-Digit preset type – models over 125 mm (5") measuring range.

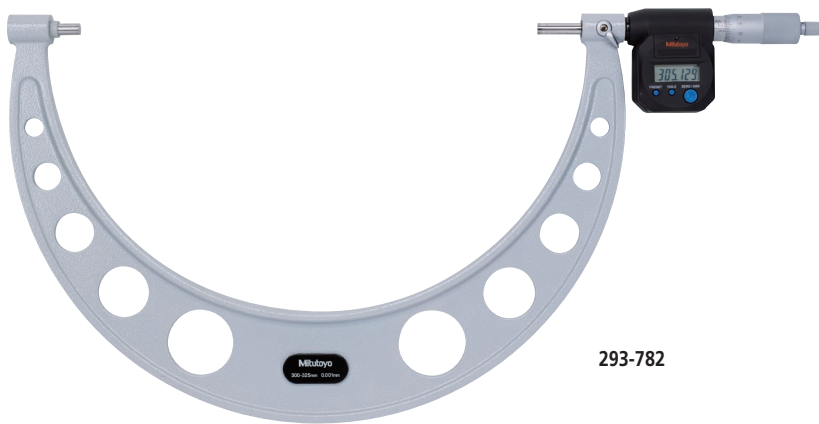
Dimensions



Micrometers

SERIES 293 – Digimatic Micrometer

- Easily integrated into a statistical process control or networked measurement system.
- Constant-force device: ratchet stop.
- Interface Input Tools are available that enable the conversion of measurement data to keyboard signals that are then directly input to cells in off-the-shelf spreadsheet software such as Excel.
- Measuring faces: Carbide.



293-782

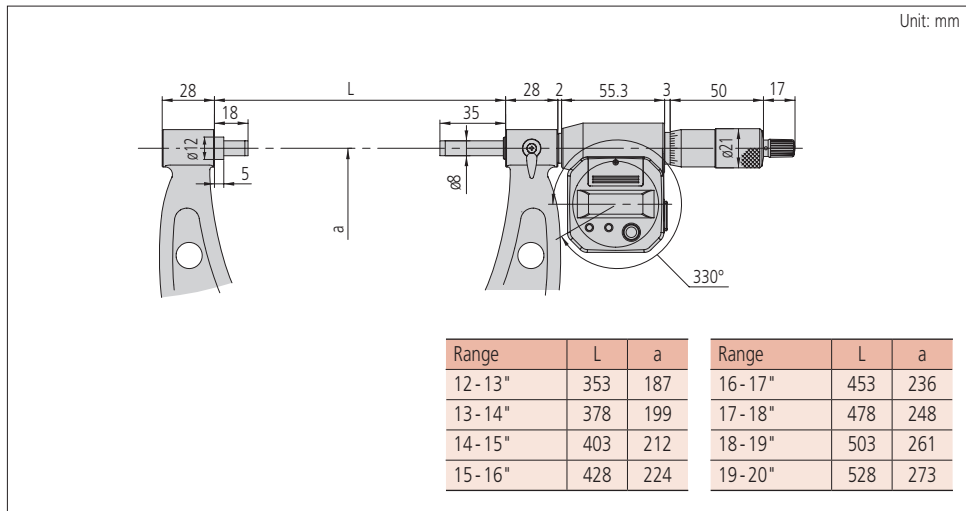
Specifications

Inch/Metric

Code No.	Range	Accuracy*1	Flatness	Parallelism	Price
293-782	12 - 13" (304.8 - 330.2 mm)	±.0003" (±6 μm)	.000024" (0.6 μm)	.0002" (5 μm)	£690.00
293-783	13 - 14" (330.2 - 355.6 mm)				£693.00
293-784	14 - 15" (355.6 - 381.0 mm)				£708.00
293-785	15 - 16" (381.0 - 406.4 mm)	±.00035" (±7 μm)		.00024" (6 μm)	£716.00
293-786	16 - 17" (406.4 - 431.8 mm)				£726.00
293-787	17 - 18" (431.8 - 457.2 mm)				£741.00
293-788	18 - 19" (457.2 - 482.6 mm)	±.0004" (±8 μm)	.00028" (7 μm)	£754.00	
293-789	19 - 20" (482.6 - 508.0 mm)			£759.00	

*1 Excluding quantizing error.

Dimensions



Technical Data

Resolution:	.0001" (0.001 mm)
Measuring force:	10 to 15N
Battery:	SR44 (2 pcs) 938882
Battery life:	Approx. 1.8 years under normal use

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.

Function lock:
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.

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.

Data output:
Models equipped with this function have an output port for transferring measurement data to a Statistical Process Control (SPC) system.

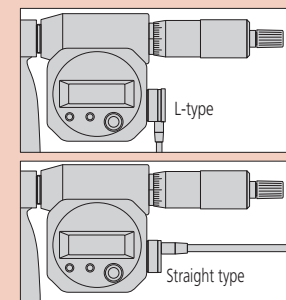
Error alarm:
In the unlikely event of a display overflow or calculation error, an error message is displayed and measurement stops. Measurement cannot continue until the error is corrected.

Also, if the battery voltage drops below a certain point, the battery indicator will turn on before measurement becomes impossible, warning the user that the battery needs to be replaced.

Optional Accessories

Code No.	Description	Price
04AZB512	L-type SPC data cable (1 m)	£75.00
04AZB513	L-type SPC data cable (2 m)	£80.00
959149	SPC data cable with pushbutton*2 (1 m)	£34.60
959150	SPC data cable with pushbutton*2 (2 m)	£39.40
02AZD790E	SPC data cable for U-WAVE-T (160 mm)	£60.10

*2 May interfere with operating the thimble.



Technical Data

Measuring force: 5 to 10N
 Battery: SR44 (1 pc) **938882**
 Battery life: Approx. 1.8 years under normal use

Functions

Zero setting:

A brief press on the ORIGIN button sets display to zero at the current spindle position (zero-setting), which allows easy comparison measurement.

Auto power ON/OFF:

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

SERIES 293 – Digimatic Micrometer

- Simple design, such as not incorporating data output, achieves low cost.
- Provided only with an origin-set button for easy origin setting.
- Increased operability thanks to easy-to-read LCD with 30% more character display area than previous model.
- Equipped with Ratchet Stop for constant measuring force.
- Measuring faces: Carbide.



293-821-30



293-832-30

Specifications

Metric

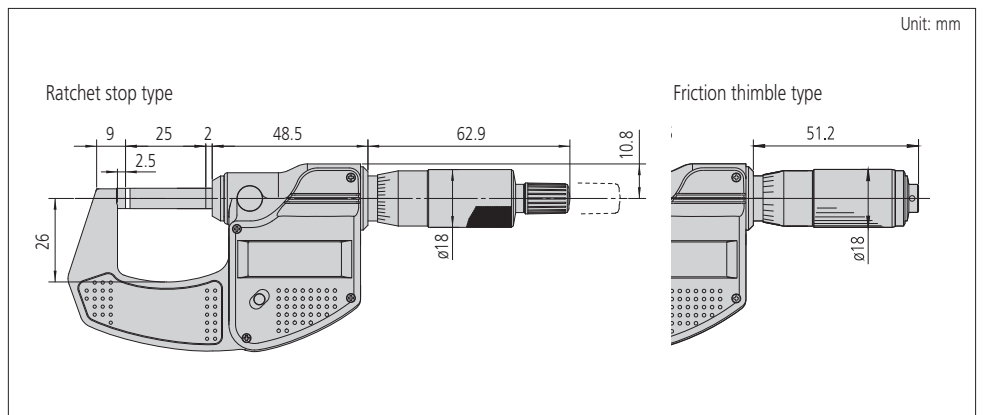
Code No.	Range	Resolution	Accuracy*	Constant-force device	Price
293-821-30	0-25 mm	0.001 mm	±2 μm	Ratchet stop	£125.00

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Constant-force device	Price
293-831-30	0-1" (0-25.4 mm)	.00005" (0.001 mm)	±.0001" (±2 μm)	Ratchet stop	£125.00
293-832-30				Friction thimble	£125.00

* Excluding quantizing error.

Dimensions



Micrometers

SERIES 293 – ABSOLUTE Digimatic Quickmike Micrometer

- The Quickmike provides a speedy spindle feed of 10 mm per thimble rotation, which enables widely differently sized features to be measured quickly.
- Set the origin only once. The absolute linear scale maintains the origin throughout the life of the battery, meaning no more zero setting (presetting) or overspeed error.
- Measuring faces: Carbide.
- Supplied with a Ratchet Thimble for constant measuring force.

ABSOLUTE IP54



293-676



293-677



293-678



293-679

Technical Data

Resolution:	.00005" (0.001 mm)
Accuracy:	Refer to the list of specifications
Measuring force:	5 to 15N
Battery:	SR44 (1 pc) 938882
Battery life:	Approx. 3 years under normal use
Max. response speed:	Without limit

Optional Accessories

Code No.	Description	Price
937387	SPC data cable (1 m)	£37.90
965013	SPC data cable (2 m)	£45.00
06ADV380E	USB Input Tool Direct USB-ITN-E (2 m)	£105.00
02AZD790E	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140E	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00

Specifications

Inch/Metric

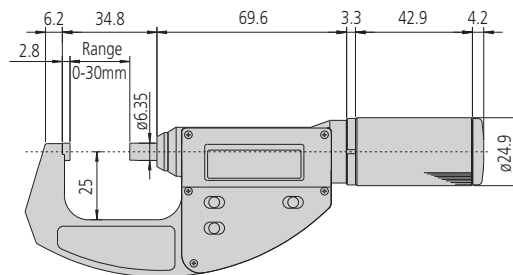
Code No.	Range	Accuracy*	Flatness	Parallelism	Mass	Price
293-676	0 - 1.2" (0 - 30.48 mm)	±.0001" (±2 μm)	±.000012" 0.3 μm)	.00008" (2 μm)	275 g	£284.00
293-677	1 - 2.2" (25.4 - 55.8 mm)				355 g	£402.00
293-678	2 - 3.2" (50.8 - 81.28 mm)	525 g			£432.00	
293-679	3 - 4.2" (76.2 - 106.68 mm)	±.00015" (±3 μm)		.00012" (3 μm)	625 g	£462.00

* Excluding quantizing error.

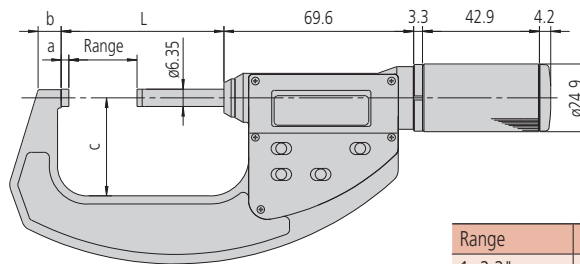
Dimensions

Unit: mm

Measuring range: 0 - 1.2"



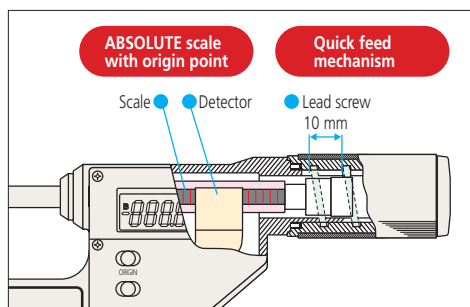
Measuring range: 1 - 2.2" and over



Range	L	a	b	c
1 - 2.2"	59.8	2.8	8.5	36
2 - 3.2"	84.8		10.3	47
3 - 4.2"	109.8		10.7	60

Non-rotating spindle

The non-rotating spindle enables even inexperienced operators to perform measurements repeatably and accurately.



Micrometers

SERIES 227 – ABSOLUTE Digimatic Adjustable Measuring Force Micrometer

- Digimatic micrometer dedicated to applications requiring a constant/low measuring force such as measuring wire, paper, and plastic/rubber parts.
- Ratchet mechanism in the thimble applies constant force to workpiece.
- Measuring force is adjustable (in steps) to suit various kinds of workpiece.
- High-accuracy measurement can be performed even by unskilled operators due to the repeatability of the automatically applied measuring force.
- Compact and easy to handle.
- Non-rotating spindle.
- Measuring faces: Carbide.

ABSOLUTE



227-211

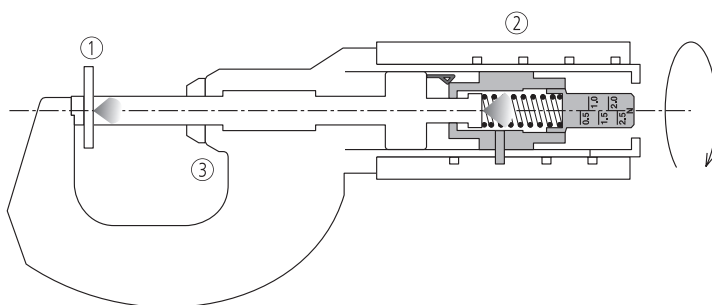
Specifications

Inch/Metric					
Code No.	227-211	227-213	227-215	227-216	227-217
Range	0 - .6" (0 - 15.24 mm)	.6 - .12" (15.24 - 30.48 mm)	0 - .4" (0 - 10.16 mm)	.4 - .8" (10.16 - 20.32 mm)	.8 - 1.2" (20.32 - 30.48 mm)
Measuring force range	0.5 - 2.5 N		2 - 10 N		
Resolution	.00005" (0.001 mm)				
Accuracy*	±.0001" (±2 μm)				
Measuring force	0.5, 1.0, 1.5, 2.0, 2.5 N		2, 4, 6, 8, 10 N		
Accuracy of the selected measuring force*1	± (0.1 + the selected measuring force/10) N		± (0.4 + the selected measuring force/10) N		
Repeatability of measuring force*1	Within 0.1 N		Within 0.4 N		
Mass	300 g	380 g	340 g	425 g	415 g
Price	£755.00	£932.00	£785.00	£828.00	£909.00

* Excluding quantizing error.

*1 These values are guaranteed when used in a horizontal orientation (within ±3 degrees).

Operation



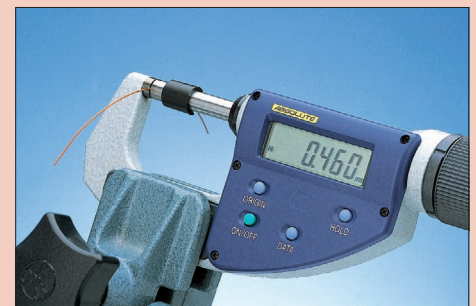
- ① Measuring force is generated by the action of trapping a workpiece between the spindle face and the anvil.
- ② The constant-force unit applies the specified measuring force.
- ③ When the preset measuring force is reached, the value on the LCD is automatically held and the hold symbol appears. (To cancel the hold, reverse the thimble more than 1/10 revolution and press the hold button.)

Technical Data

Flatness:	.000012" (0.3 μm)
Parallelism:	.00008" (2 μm)
Measurement posture:	Horizontal orientation only (recommended spindle inclination: within ±3°)
Battery:	SR44 (1 pc), 938882
Battery life:	Approx. 3 years under normal use (1 year for 227-213/6/7)

Functions

- Adjustable measuring force mechanism
- Hold
- Origin point setting
- ABS measurement system
- Low voltage alarm
- Data output
- Presetting (**227-213/6/7**)

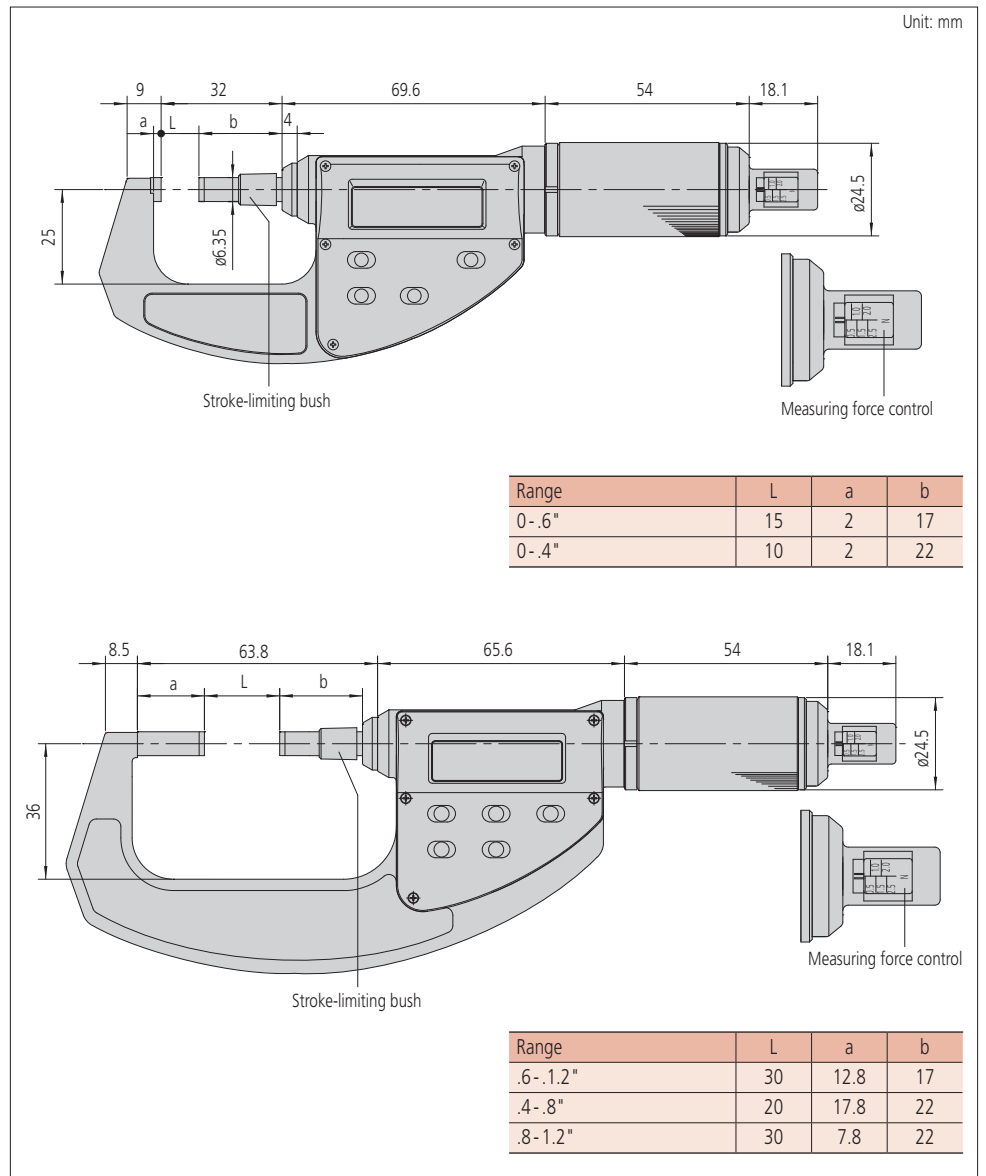


Optional Accessories

Code No.	Description	Price
937387	SPC data cable (1 m)	£37.90
965013	SPC data cable (2 m)	£45.00
06ADV380E	USB Input Tool Direct USB-ITN-E (2 m)	£105.00
02AZD790E	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140E	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00



Dimensions



Adjustable measuring force

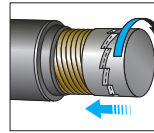
To preset the measuring force, adjust the measuring force setting scale on the thimble with the screwdriver supplied.

Micrometers

SERIES 102 – Ratchet Thimble Micrometer

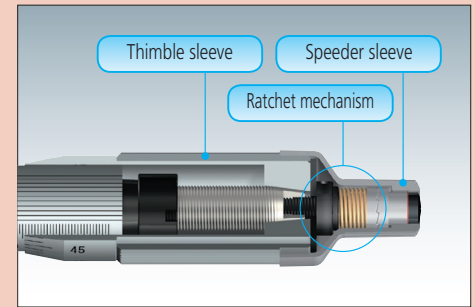
- More accurate in one-handed operation: inexperienced operators measure significantly more accurately with this micrometer.
- Heat-insulated frame.
- Ratchet function works both from the thimble and the speeder.

- Rotating the thimble/speeder when the workpiece is between the anvil and spindle causes the ratchet mechanism to operate and apply a constant measuring force to the workpiece.
- Clearly audible ratchet operation for reassurance that measurement is being performed at constant, preset force.
- The speeder is always available for quick rotation of spindle.
- A simple mechanism, which requires neither parts maintenance nor special technique, is employed in the constant-force device.
- Measuring faces: Carbide.



Technical Data

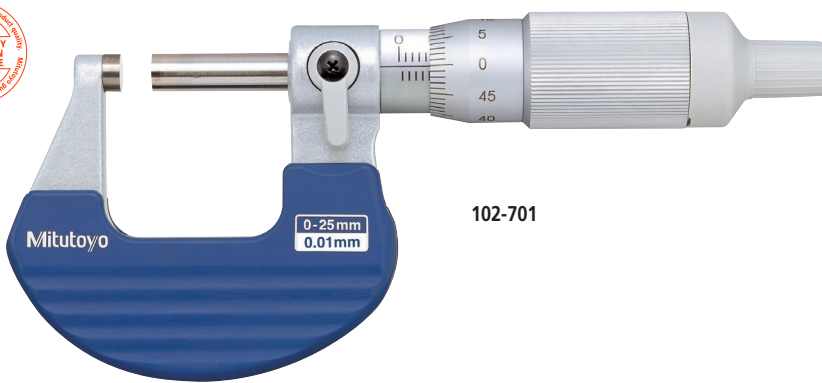
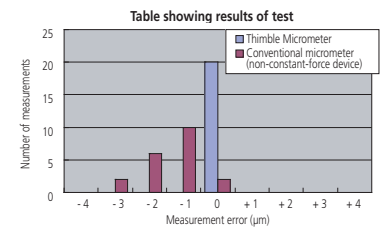
Flatness: 0.6 μm / .000024"
 Parallelism: 2 μm / .00008"
 Measuring force: 5-10N



Internal structure.

Greatly improved accuracy and repeatability

Measurement results of one-handed operation
 A beginner performed a test by measuring a workpiece 20 times using a conventional micrometer and a Ratchet Thimble Micrometer.



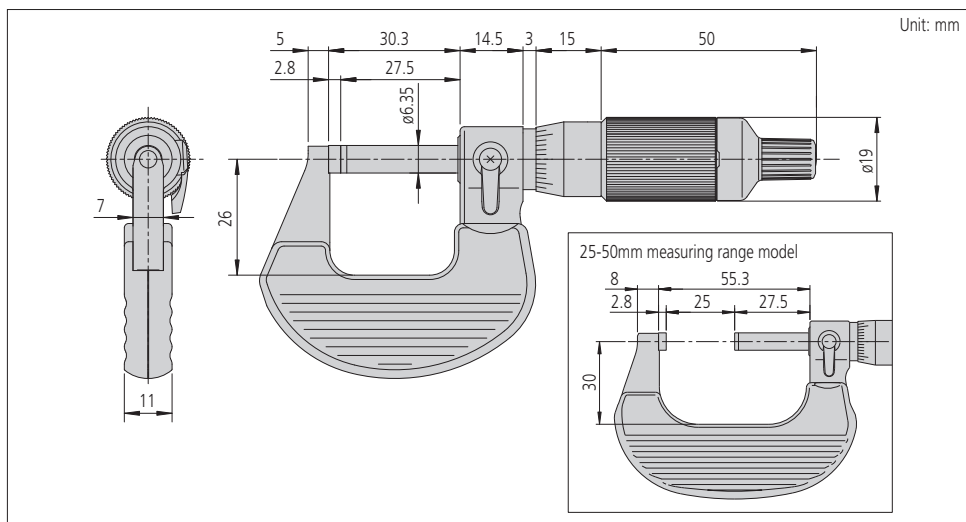
102-701

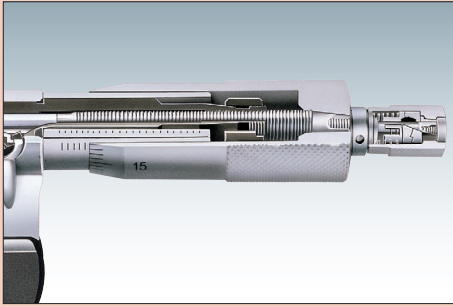
Specifications

Metric					
Code No.	Range	Graduation	Accuracy	Mass	Price
102-701	0 - 25 mm	0.01 mm	±2 μm	180 g	£62.10
102-707		0.001 mm			£69.30
102-702	25 - 50 mm	0.01 mm		270 g	£71.00
102-708		0.001 mm		£99.00	

Inch					
Code No.	Range	Graduation	Accuracy	Mass	Price
102-717	0 - 1"	.0001"	±.0001"	180 g	£69.30
102-718	1 - 2"	.0001"		270 g	£99.00

Dimensions





Ratchet stop type.

SERIES 102 – Economy Micrometer

- Cut-away frame (behind anvil) for measuring in hard-to-reach places.
- Heat-insulated frame.
- Measuring faces: Carbide.

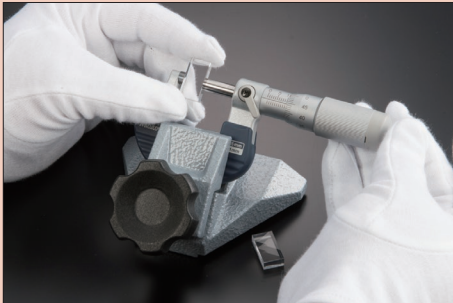


102-301

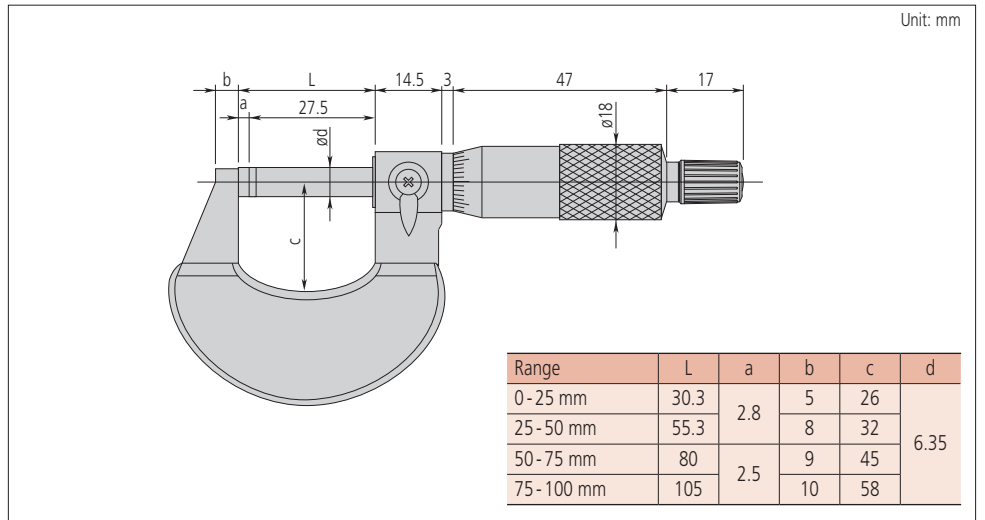
0 - 25 mm 0.01 mm
Mitutoyo

Specifications

Metric							
Code No.	Range	Graduation	Accuracy	Flatness	Parallelism	Constant-force device	Price
102-301	0 - 25 mm	0.01 mm	±2 μm	0.6 μm	2 μm	Ratchet stop	£62.10
102-311		0.001 mm	±1 μm	0.3 μm	1 μm		£112.00
102-302	25 - 50 mm	0.01 mm	±2 μm	0.6 μm	2 μm		£71.00
102-312		0.001 mm	±1 μm	0.3 μm	1 μm		£120.00
102-303	50 - 75 mm	0.01 mm	±2 μm	0.6 μm	2 μm		£91.50
102-304	75 - 100 mm		±3 μm		3 μm		£103.00



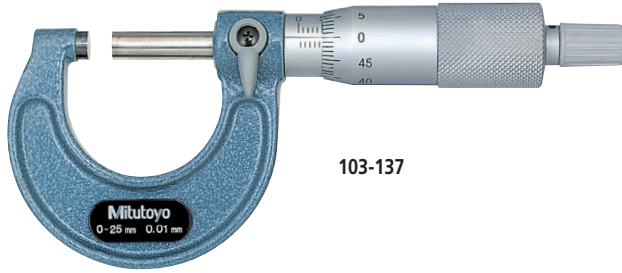
Dimensions



Micrometers

SERIES 103 – Economy Micrometer

- Baked-enamel-finished frame.
- Equipped with Ratchet Stop for constant measuring force.
- Measuring faces: Carbide.
- Setting standard included on models measuring above 25 mm/1".



103-137

Specifications

Metric				
Code No.	Range	Graduation	Accuracy	Price
With ratchet stop				
103-137	0 - 25 mm	0.01 mm	±2 μm	£46.50
103-129		0.001 mm		£53.40
103-138	25 - 50 mm	0.01 mm		£62.40
103-130		0.001 mm		£69.30
103-139-10	50 - 75 mm			£82.20
103-140-10	75 - 100 mm			£92.20
103-141-10	100 - 125 mm			£101.00
103-142-10	125 - 150 mm			£113.00
103-143-10	150 - 175 mm			£123.00
103-144-10	175 - 200 mm			£141.00
103-145-10	200 - 225 mm		£153.00	
103-146-10	225 - 250 mm		£157.00	
103-147-10	250 - 275 mm		£166.00	
103-148-10	275 - 300 mm		£182.00	
103-149	300 - 325 mm		£226.00	
103-150	325 - 350 mm		£238.00	
103-151	350 - 375 mm		£251.00	
103-152	375 - 400 mm		£272.00	
103-153	400 - 425 mm		£279.00	
103-154	425 - 450 mm		£288.00	
103-155	450 - 475 mm		£309.00	
103-156	475 - 500 mm		£320.00	
103-157	500 - 525 mm		£360.00	
103-158	525 - 550 mm		£380.00	
103-159	550 - 575 mm		£405.00	
103-160	575 - 600 mm		£430.00	
103-161	600 - 625 mm		£598.00	
103-162	625 - 650 mm		£621.00	
103-163	650 - 675 mm		£656.00	
103-164	675 - 700 mm		£679.00	
103-165	700 - 725 mm		£702.00	
103-166	725 - 750 mm		£713.00	
103-167	750 - 775 mm		£782.00	
103-168	775 - 800 mm		£805.00	
103-169	800 - 825 mm		£840.00	
103-170	825 - 850 mm		£863.00	
103-171	850 - 875 mm		£897.00	
103-172	875 - 900 mm		£920.00	
103-173	900 - 925 mm		£955.00	
103-174	925 - 950 mm		£989.00	
103-175	950 - 975 mm		£1030.00	
103-176	975 - 1000 mm		£1050.00	

Inch				
Code No.	Range	Graduation	Accuracy	Price
With ratchet stop				
103-177	0 - 1"	.001"	±.0001"	£46.50
103-131		.0001"		£53.40
103-178	1 - 2"	.001"		£62.40
103-132		.0001"		£69.30
103-179	2 - 3"			£82.20
103-180	3 - 4"			£92.20
103-181	4 - 5"			£101.00
103-182	5 - 6"			£113.00
103-183	6 - 7"			£123.00
103-184	7 - 8"			£141.00
103-185	8 - 9"		£153.00	
103-186	9 - 10"		£157.00	
103-187	10 - 11"		£166.00	
103-188	11 - 12"		£182.00	
103-189	12 - 13"		£226.00	
103-190	13 - 14"		£238.00	
103-191	14 - 15"		£251.00	
103-192	15 - 16"		£272.00	
103-193	16 - 17"		£279.00	
103-194	17 - 18"		£288.00	
103-195	18 - 19"		£309.00	
103-196	19 - 20"		£320.00	
103-197	20 - 21"		£360.00	
103-198	21 - 22"		£380.00	
103-199	22 - 23"		£405.00	
103-200	23 - 24"		£430.00	
103-201	24 - 25"		£598.00	
103-202	25 - 26"		£621.00	
103-203	26 - 27"		£656.00	
103-204	27 - 28"		£679.00	
103-205	28 - 29"		£702.00	
103-206	29 - 30"		£713.00	
103-207	30 - 31"		£782.00	
103-208	31 - 32"		£805.00	
103-209	32 - 33"		£840.00	
103-210	33 - 34"		£863.00	
103-211	34 - 35"		£897.00	
103-212	35 - 36"		£920.00	
103-213	36 - 37"		£955.00	
103-214	37 - 38"		£989.00	
103-215	38 - 39"		£1030.00	
103-216	39 - 40"		£1050.00	

With friction thimble				
Code No.	Range	Graduation	Accuracy	Price
103-135	0 - 1"	.001"*	±.0001"	£62.00
103-136	1 - 2"			£88.80

*.0001 reading is obtained with vernier.

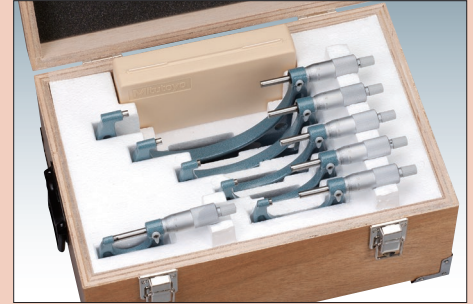
Technical Data

Flatness: 0.6 μm/.000024" for models up to 300 mm / 12", 1 μm / 0.0004" for models over 300 mm / 12"

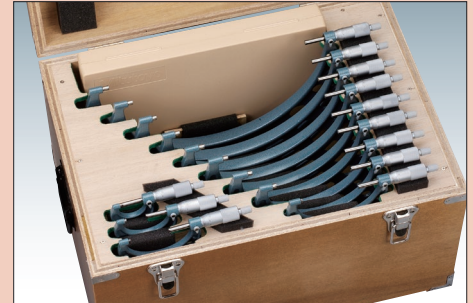
Parallelism*: (2+R/100) μm / [.00008+.00004 (R/4)]"

* R = max. range (mm/inch)

Note: Fractions rounded down



103-904-10



103-905-10



103-906

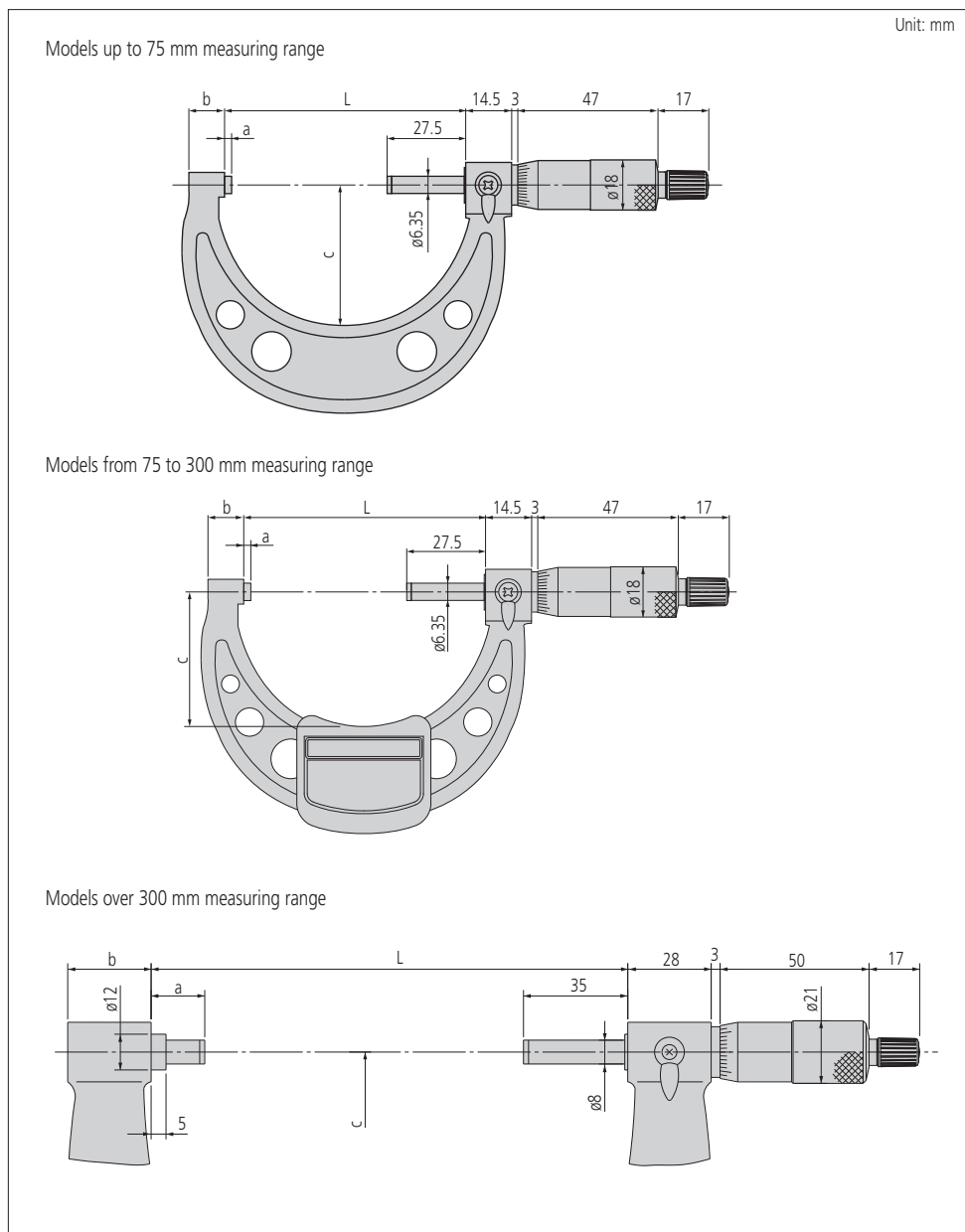
Set Specifications

Metric			
Code No.	Range	Models included	Price
103-927-10	0 - 75 mm (3 pcs./set)	103-137, 103-138, 103-139-10, 2 micrometer setting standards	£234.00
103-913-50	0 - 150 mm (6 pcs./set)	103-137, 103-138, 103-139-10, 103-140-10, 103-141-10, 103-142-10, 5 micrometer setting standards	£552.00
103-915-10	150 - 300 mm (6 pcs./set)	103-143-10, 103-144-10, 103-145-10, 103-146-10, 103-147-10, 103-148-10, 6 micrometer setting standards	£1130.00
103-914-50	0 - 300 mm (12 pcs./set)	All micrometers in 103-913-50 and 103-915-10 in one set, 11 micrometer setting standards	£1600.00

Inch			
Code No.	Range	Models included	Price
103-929	0 - 3" (3 pcs./set)	103-177, 103-178, 103-179, 2 micrometer setting standards	£234.00
103-904-10	0 - 6" (6 pcs./set)	103-177, 103-178, 103-179, 103-180, 103-181, 103-182, 5 micrometer setting standards	£552.00
103-906	6 - 12" (6 pcs./set)	103-183, 103-184, 103-185, 103-186, 103-187, 103-188, 6 micrometer setting standards	£1130.00
103-905-10	0 - 12" (12 pcs./set)	All micrometers in 103-904-10 and 103-906 in one set, 11 micrometer setting standards	£1600.00

Range	L	a	b	c	
0 - 25 mm	30	2.5	9	28	
25 - 50 mm	55		10	38	
50 - 75 mm	80		12	46	
75 - 100 mm	105	5.3	14	57	
100 - 125 mm	132.8		16.7	76	
125 - 150 mm	158.2		18.8	90	
150 - 175 mm	183.6	6.1	19.1	102	
175 - 200 mm	208.8	6.3	18.2	115	
200 - 225 mm	234.2	6.7	16.8	127	
225 - 250 mm	258	5.5	18	139	
250 - 275 mm	284	6.5	18	152	
275 - 300 mm	309			166	
300 - 325 mm	353			187	
325 - 350 mm	378	18	28	199	
350 - 375 mm	403			212	
375 - 400 mm	428			224	
400 - 425 mm	453			236	
425 - 450 mm	478			248	
450 - 475 mm	503			261	
475 - 500 mm	528	273			
500 - 525 mm	575	40	28	307	
525 - 550 mm		15		332	
550 - 575 mm	40	355			
575 - 600 mm	625	15		382	
600 - 625 mm	675	40		405	
625 - 650 mm		15		430	
650 - 675 mm	725	40		455	
675 - 700 mm		15		480	
700 - 725 mm	775	40		505	
725 - 750 mm		15		530	
750 - 775 mm	825	40		28	530
775 - 800 mm		15			530
800 - 825 mm	875	40	455		
825 - 850 mm		15	480		
850 - 875 mm	925	40	505		
875 - 900 mm		15	530		
900 - 925 mm	975	40	530		
925 - 950 mm		15	530		
950 - 975 mm	1025	40	530		
975 - 1000 mm		15	530		

Dimensions



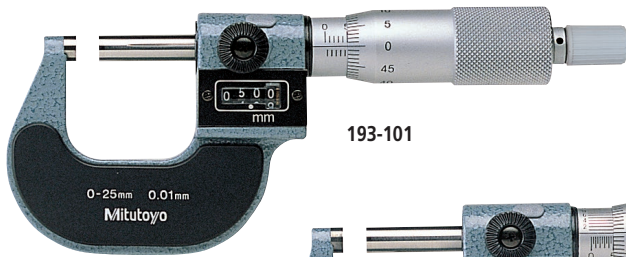
Micrometers

SERIES 193 – Mechanical Counter Micrometer

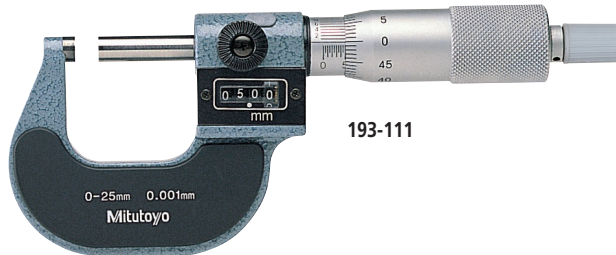
- Mechanical digit counter with 0.01 mm or .001" resolution for quick and error-free reading.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.

Technical Data

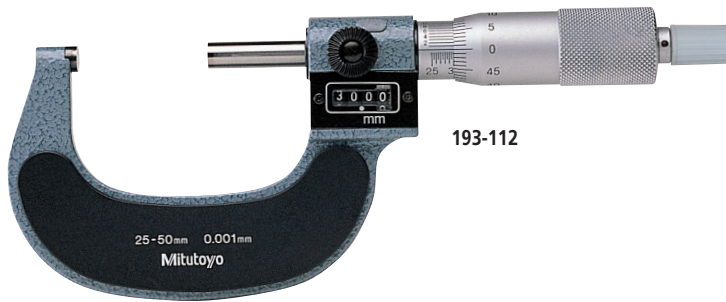
Counter reading: 0.01 mm or .001"
 Flatness: 0.6 μm (.000024")
 Parallelism*: (2+R/100) μm, [.00008+.00004 (R/4)]"
 * R = max. range (mm/inch).
 Note: Fractions rounded down.



193-101



193-111



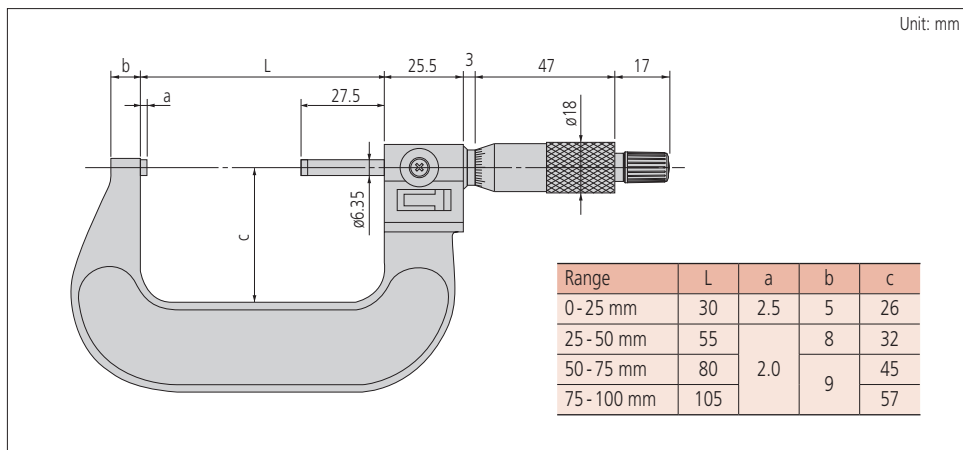
193-112

Specifications

Metric				
Code No.	Range	Graduation	Accuracy	Price
With ratchet stop				
193-101	0 - 25 mm	0.01 mm	±2 μm	£133.00
193-111		0.001 mm		£146.00
193-102	25 - 50 mm	0.01 mm		£160.00
193-112		0.001 mm		£170.00
193-103	50 - 75 mm	0.01 mm	£179.00	
193-113		0.001 mm	£183.00	
193-104	75 - 100 mm	0.01 mm	±3 μm	£196.00
193-114		0.001 mm	£199.00	

Inch				
Code No.	Range	Graduation	Accuracy	Price
With friction thimble				
193-211	0 - 1"	.0001"	±.0001"	£146.00
193-212	1 - 2"			£170.00
With ratchet stop				
193-213	2 - 3"	.0001"	±.0001"	£183.00
193-214	3 - 4"		±.00015"	£199.00

Dimensions



Technical Data

Battery: SR44 (1 pc) 938882

Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00

SERIES 406 – Digimatic Non-Rotating Spindle Micrometer

- Non-rotating spindle.
- Equipped with Ratchet Stop for constant measuring force.



406-352-30

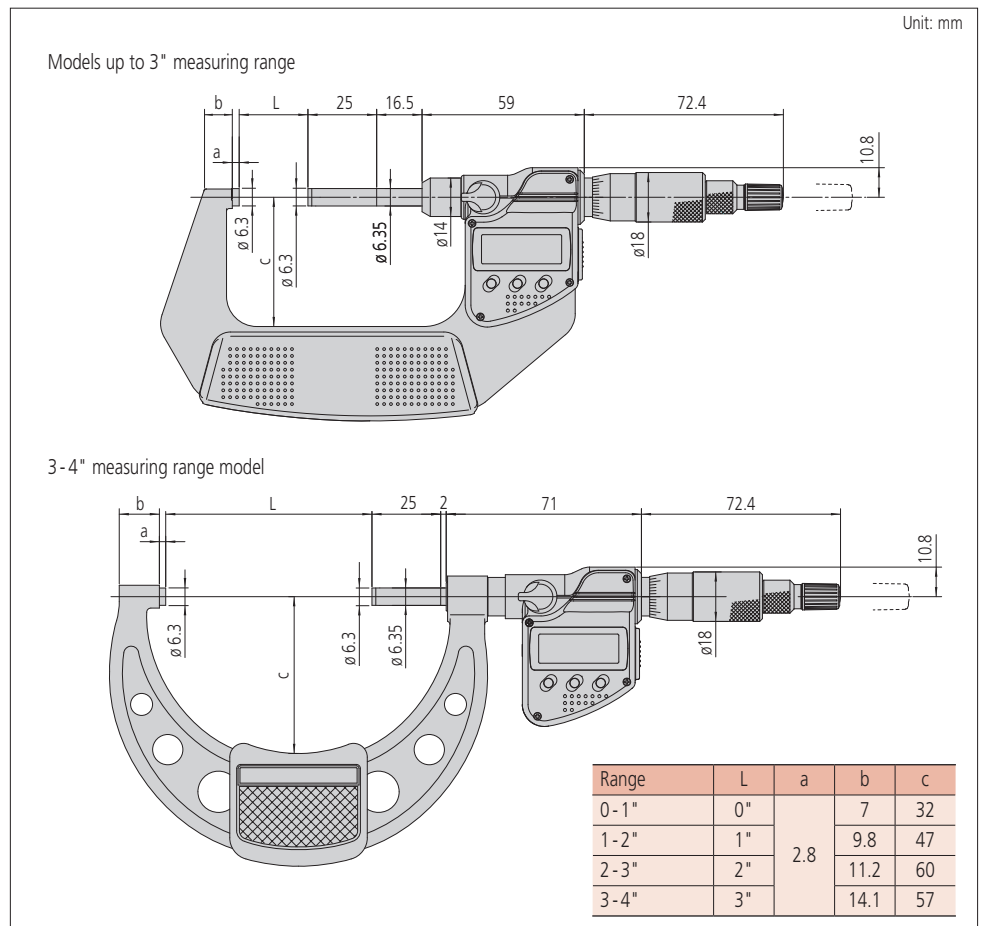
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Flatness	Parallelism	Price
406-350-30	0 - 1" (0 - 25.4 mm)	.00005" (0.001 mm)	±.00015" (±3 μm)	.000012" (0.3 μm)	.00012" (3 μm)	£635.00
406-351-30	1 - 2" (25.4 - 50.8 mm)					£690.00
406-352-30	2 - 3" (50.8 - 76.2 mm)					£718.00
406-353-30	3 - 4" (76.2 - 101.6 mm)					£751.00

* Excluding quantizing error.

Dimensions

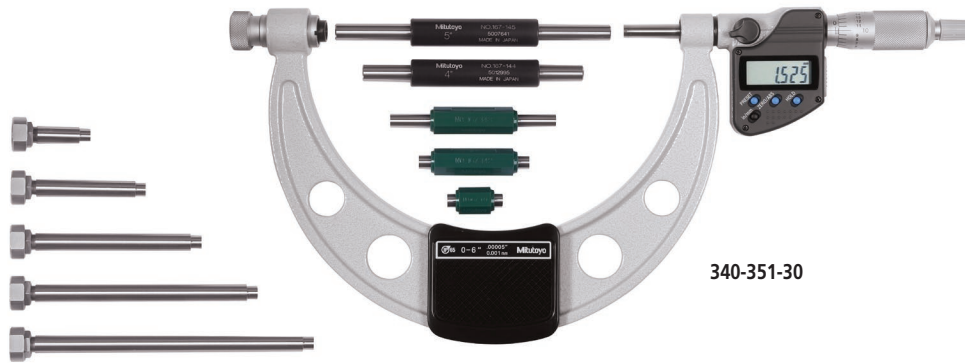


Micrometers

SERIES 340 – Digimatic Interchangeable Anvil Micrometer

- Wide measuring range with interchangeable anvils.
- Measuring face of the spindle is carbide tipped (standard model).
- IP65 water/dust protection.*1
- Equipped with Ratchet Stop for constant measuring force.

*1 Only models with a measuring range up to 300 mm.



340-351-30

Specifications

Inch/Metric

Code No.	Range	Resolution	Interchangeable anvils	Setting standards	Micrometer head stroke	Price
IP65 rated						
340-351-30	0 - 6" (0 - 152.4 mm)	.00005" (0.001 mm)	6 pcs.	5 pcs.	1" (25 mm)	£670.00
340-352-30	6 - 12" (152.4 - 304.8 mm)	.0001" (0.001 mm)		6 pcs.		£858.00
Unrated						
340-720	12 - 18" (304.8 - 457.2 mm)	.0001" (0.001 mm)	6 pcs.	6 pcs.	1" (25 mm)	£1110.00
340-721	18 - 24" (457.2 - 609.6 mm)					£1220.00
340-722	24 - 30" (609.6 - 762.0 mm)					£1370.00
340-723	30 - 36" (762.0 - 914.4 mm)					£1460.00

Technical Data

Flatness:	.000024" (0.6 μm) for models up to 12", .00004" (1.0 μm) for models over 12"
Parallelism:	.00008" (2 μm) for models up to 3", .00012" (3 μm) for models up to 6", ±[.00008" + .00004 (R/4)]* ² / (2+R/100) μm* for models over 6"
Accuracy* ³ :	±[.00016" + .00004(R/3)]* ² / ±(4+R/75) μm* ²
Battery:	SR44 (1 pc), 938882

Note: Fractions rounded down.

*² R = max. range (mm/inch).

*³ Excluding quantizing error.

Dimensions

See page B-23

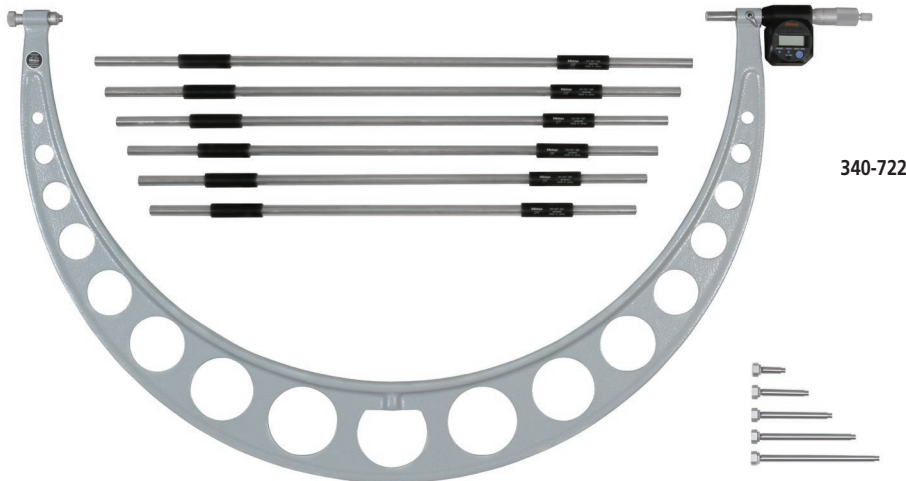
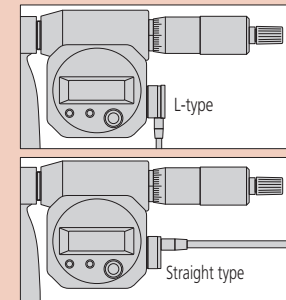
Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00

Connecting cables for 340-720 / -721 / -722 / -723

04AZB512	L-type SPC data cable (1 m)	£75.00
04AZB513	L-type SPC data cable (2 m)	£80.00
959149	SPC data cable with pushbutton (1 m)* ⁴	£34.60
959150	SPC data cable with pushbutton (2 m)* ⁴	£39.40

*⁴ May interfere with operating the thimble.



340-722



Technical Data

Flatness:	0.6 μm (.000024") for models up to 300 mm (12"), 1.0 μm (.00004") for models over 300 mm (12")
Parallelism:	2 μm (.00008") for models up to 75 mm (3"), 3 μm (.00012") for models up to 150 mm (6"), (2+R/100) μm * / \pm [.00008"+.00004 (R/4)]" * for models over 150 mm (6")
Accuracy:	\pm (4+R/75) μm * / \pm [.00016"+.00004(R/3)]" *

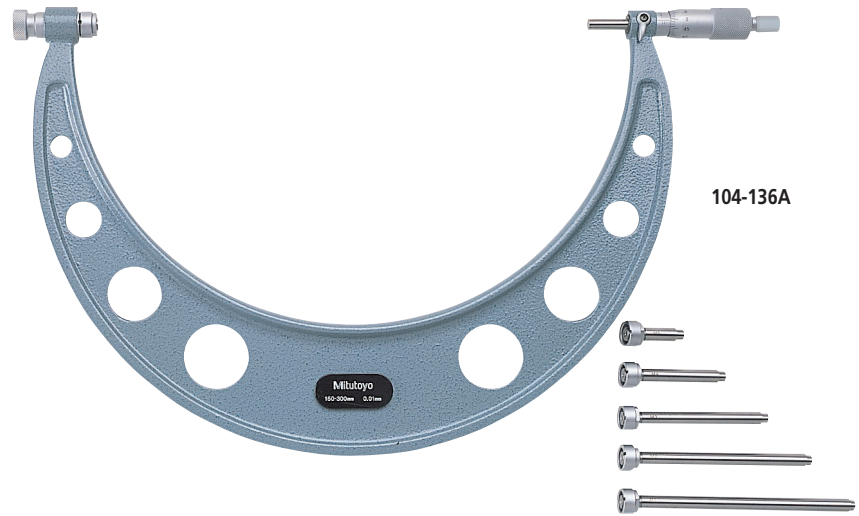
* R = max. range (mm/inch).
Note: Fractions rounded down.

Dimensions

See page B-23

SERIES 104 – Interchangeable Anvil Micrometer

- Wide measuring range with interchangeable anvils.
- Measuring face of the spindle is carbide tipped (standard model).
- Equipped with Ratchet Stop for constant measuring force.



Specifications

Metric						
Code No.	Range	Graduation	Interchangeable anvils	Setting standard	Micrometer head stroke	Price
104-139A	0 - 100 mm	0.01 mm	4 pcs.	3 pcs.	25 mm	£242.00
104-135A	0 - 150 mm		6 pcs.	5 pcs.		£357.00
104-161A	50 - 150 mm		4 pcs.	4 pcs.		£334.00
104-140A	100 - 200 mm		6 pcs.	6 pcs.		£322.00
104-136A	150 - 300 mm		4 pcs.	4 pcs.		£440.00
104-141A	200 - 300 mm		6 pcs.	6 pcs.		£390.00
104-142A	300 - 400 mm		4 pcs.	4 pcs.		£486.00
104-143A	400 - 500 mm		6 pcs.	6 pcs.		£565.00
104-144A	500 - 600 mm		4 pcs.	4 pcs.		£712.00
104-145A	600 - 700 mm		6 pcs.	6 pcs.		£788.00
104-146A	700 - 800 mm		4 pcs.	4 pcs.		£955.00
104-147A	800 - 900 mm		6 pcs.	6 pcs.		£1120.00
104-148A	900 - 1000 mm		4 pcs.	4 pcs.		£1290.00

Inch						
Code No.	Range	Graduation	Interchangeable anvils	Setting standard	Micrometer head stroke	Price
104-149	0 - 4"	.001"	4 pcs.	3 pcs.	1"	£242.00
104-137	0 - 6"		6 pcs.	5 pcs.		£357.00
104-162	2 - 6"		4 pcs.	4 pcs.		£334.00
104-150	4 - 8"		6 pcs.	6 pcs.		£322.00
104-138	6 - 12"		4 pcs.	4 pcs.		£440.00
104-151	8 - 12"		6 pcs.	6 pcs.		£390.00
104-152	12 - 16"		4 pcs.	4 pcs.		£486.00
104-201	12 - 18"		6 pcs.	6 pcs.		£647.00
104-153	16 - 20"		4 pcs.	4 pcs.		£565.00
104-202	18 - 24"		6 pcs.	6 pcs.		£771.00
104-154	20 - 24"		4 pcs.	4 pcs.		£712.00
104-155	24 - 28"		6 pcs.	6 pcs.		£788.00
104-203	24 - 30"		4 pcs.	4 pcs.		£817.00
104-156	28 - 32"		6 pcs.	6 pcs.		£955.00
104-204	30 - 36"		4 pcs.	4 pcs.		£1070.00
104-157	32 - 36"		6 pcs.	6 pcs.		£1120.00
104-158	36 - 40"		4 pcs.	4 pcs.		£1290.00
104-205	36 - 42"		6 pcs.	6 pcs.		£1340.00

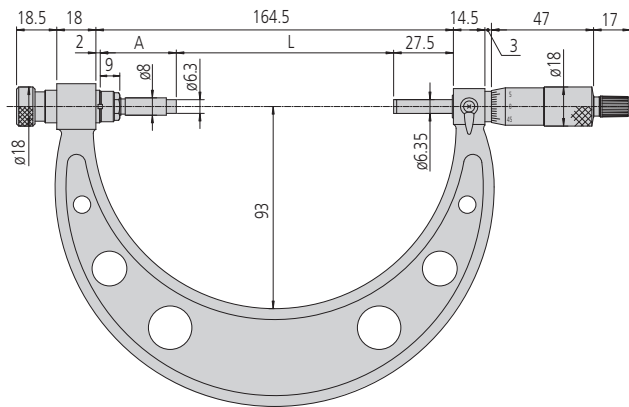
Micrometers

SERIES 340, 104 – Interchangeable Anvil Micrometer

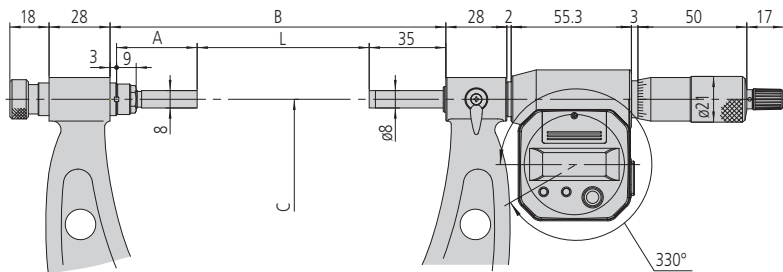
Dimensions

Unit: mm

104-135A



Models from 400 to 1000 mm measuring range



Interchangeable anvils

		L : Range (mm)					
Range	0 to 150 mm models	0 - 25	25 - 50	50 - 75	75 - 100	100 - 125	125 - 150
	150 to 300 mm models	150 - 175	175 - 200	200 - 225	225 - 250	250 - 275	275 - 300
	Code No.	303950	303951	303952	303953	303954	303955
	A: Overall length (mm)	135	110	85	60	35	10
	Interchangeable anvil	M1	M2	M3	M4	M5	M6

		L : Range (mm)				B	C
Range	300 to 400 mm models	300 - 325	325 - 350	350 - 375	375 - 400	425	224
	400 to 500 mm models	400 - 425	425 - 450	450 - 475	475 - 500	525	273
	500 to 600 mm models	500 - 525	525 - 550	550 - 575	575 - 600	625	332
	600 to 700 mm models	600 - 625	625 - 650	650 - 675	675 - 700	725	382
	700 to 800 mm models	700 - 725	725 - 750	750 - 775	775 - 800	825	430
	800 to 900 mm models	800 - 825	825 - 850	850 - 875	875 - 900	925	480
	900 to 1000 mm models	900 - 925	925 - 950	950 - 975	975 - 1000	1025	530
	Code No.	304001	304002	304003	304004		
	A: Overall length (mm)	87	62	37	12		
	Interchangeable anvil	M3	M4	M5	M6		

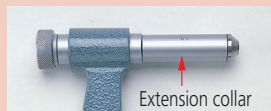
Technical Data

Flatness: 1.3 μm
 Parallelism*: (2+R/100) μm
 Accuracy*: $\pm(6+R/75)$ μm

* R = max. range (mm).

Note: Fractions rounded down.

Anvil extension collar



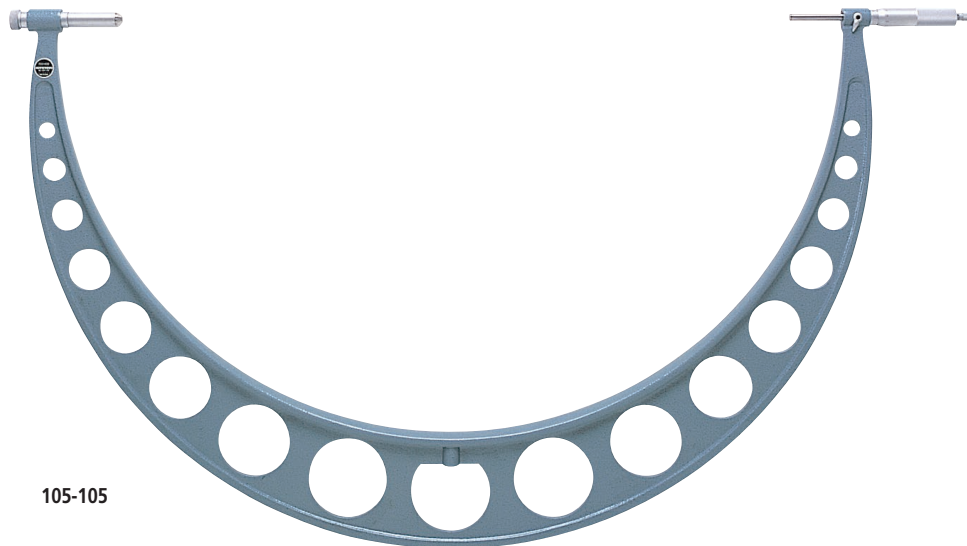
Measuring range 700 to 750 mm with **105-105**.



Measuring range 750 to 800 mm with **105-105**.

SERIES 105 – Anvil Extension Collar Micrometer

- Wide measuring range with anvil extension collars.
- 50 mm spindle stroke.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.



Specifications

Metric					
Code No.	Range	Graduation	Extension collars	Setting standard	Price
105-103	500 - 600 mm	0.01 mm	1 pc (50 mm)	2 pcs.	£854.00
105-104	600 - 700 mm				£888.00
105-105	700 - 800 mm				£932.00
105-106	800 - 900 mm				£1030.00
105-107	900 - 1000 mm				£1180.00

Micrometers

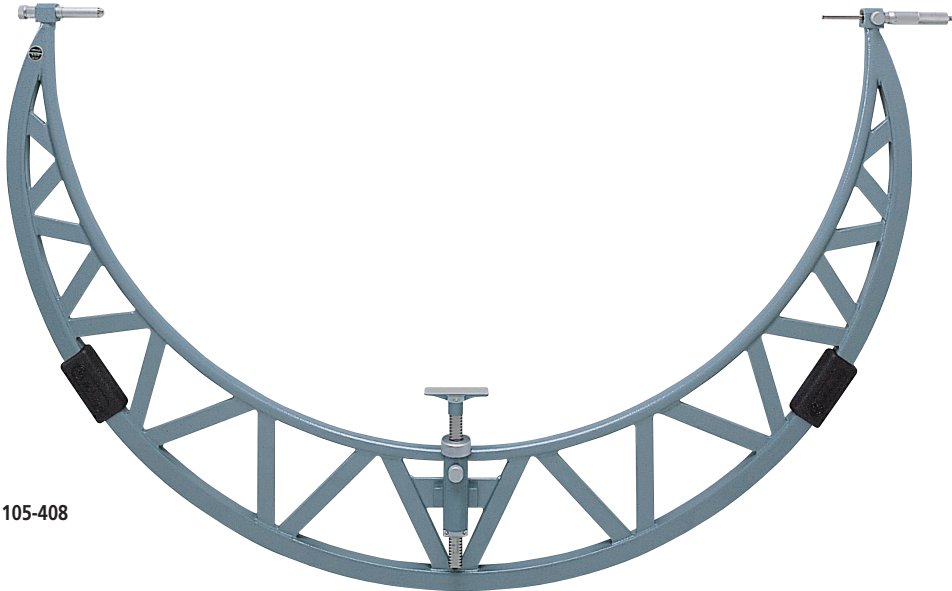
SERIES 105 – Anvil Extension Collar Micrometer

- Wide measuring range with anvil extension collars.
- 50 mm/2" spindle stroke.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.

Technical Data

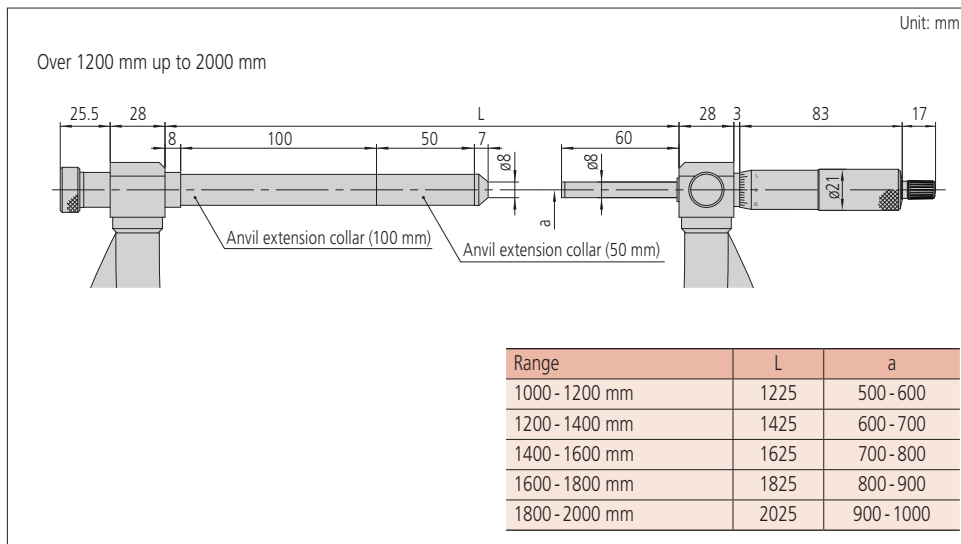
Flatness:	1.3 μm / .000052"
Parallelism*:	(2+R/100) μm / [.00008+.00004(R/4)]"
Accuracy*:	$\pm(6+R/75)$ μm / $\pm[.0003+.00005(R/3)]$ "

* R = max. range (mm/inch).
Note: Fractions rounded down.



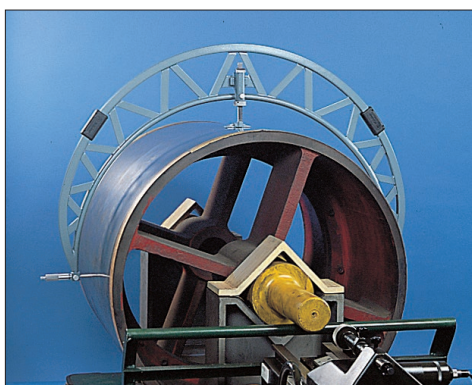
105-408

Dimensions



Specifications

Metric					
Code No.	Range	Graduation	Extension Collars	Setting Standards	Price
100 mm range models					
105-408	1000 - 1100 mm	0.01 mm	1 pc (50 mm)	2 pcs	£2180.00
105-409	1100 - 1200 mm				£2210.00
105-410	1200 - 1300 mm				£2260.00
105-411	1300 - 1400 mm				£2330.00
105-412	1400 - 1500 mm				£2370.00
105-413	1500 - 1600 mm				£2710.00
105-414	1600 - 1700 mm				£2880.00
105-415	1700 - 1800 mm				£3110.00
105-416	1800 - 1900 mm				£3440.00
105-417	1900 - 2000 mm				£3740.00
200 mm range models					
105-418	1000 - 1200 mm	0.01 mm	2 pcs (50 mm, 100 mm)	4 pcs	£2410.00
105-419	1200 - 1400 mm				£2990.00
105-420	1400 - 1600 mm				£3600.00
105-421	1600 - 1800 mm				£4110.00
105-422	1800 - 2000 mm				£4730.00
Inch					
Code No.	Range	Graduation	Extension Collars	Setting Standards	Price
105-428	40 - 44"	.001"	1 pc (2")	2 pcs	£2180.00
105-429	44 - 48"				£2210.00
105-430	48 - 52"				£2260.00
105-431	52 - 56"				£2330.00
105-432	56 - 60"				£2370.00
105-433	60 - 64"				£2710.00
105-434	64 - 68"				£2880.00
105-435	68 - 72"				£3110.00
105-436	72 - 76"				£3440.00
105-437	76 - 80"				£3740.00



Micrometers

SERIES 343 – Digimatic Caliper Anvil Micrometer

- Effective for measuring workpiece features where access is difficult.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.



343-350-30

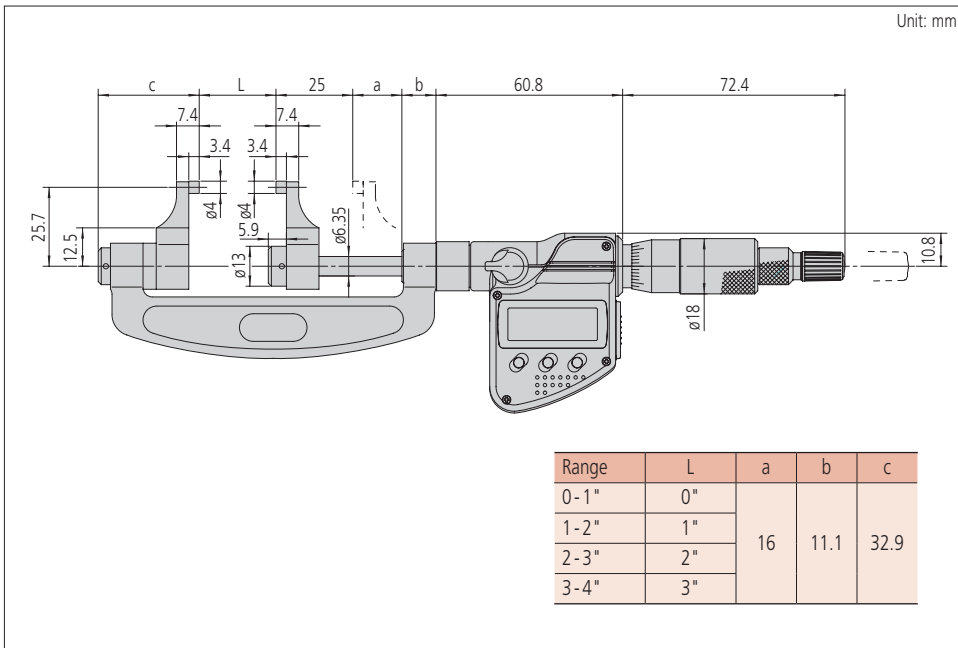
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Price
343-350-30	0-1" (0-25.4 mm)	.00005" (0.001 mm)	±.00025" (±5 μm)	£493.00
343-351-30	1-2" (25.4-50.8 mm)		±.0003" (±6 μm)	£592.00
343-352-30	2-3" (50.8-76.2 mm)		±.00035" (±7 μm)	£619.00
343-353-30	3-4" (76.2-101.6 mm)		±.0004" (±8 μm)	£656.00

* Excluding quantizing error.

Dimensions



Technical Data

Flatness: 0.000012" (3 μm)
 Parallelism*: [.00012+.00004(R/3)]", (3+R/75) μm

Battery: SR44 (2 pcs) **938882**

* R = max. range (mm/inch).

Note: Fractions rounded down.

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.

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.

Data output:

Models equipped with this function have an output port for transferring measurement data to a Statistical Process Control (SPC) system.

Error alarm:

In the unlikely event of a display overflow or calculation error, an error message is displayed and measurement stops. Measurement cannot continue until the error is corrected. Also, if the battery voltage drops below a certain point, the battery indicator will turn on before measurement becomes impossible, warning the user that the battery needs to be replaced.

Optional Accessories

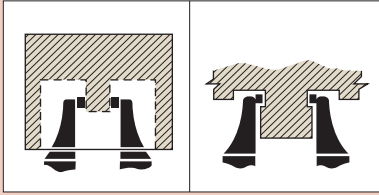
Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



Technical Data

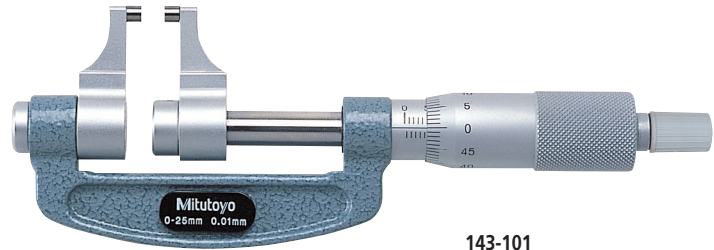
Flatness:	0.3 μm / .000012"
Parallelism*:	(3+R/75) μm / [.00012+.00004(R/3)]"

* R = max. range (mm/inch).
Note: Fractions rounded down.



SERIES 143 – Caliper Anvil Micrometer

- Effective for measuring workpiece features where access is difficult.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.



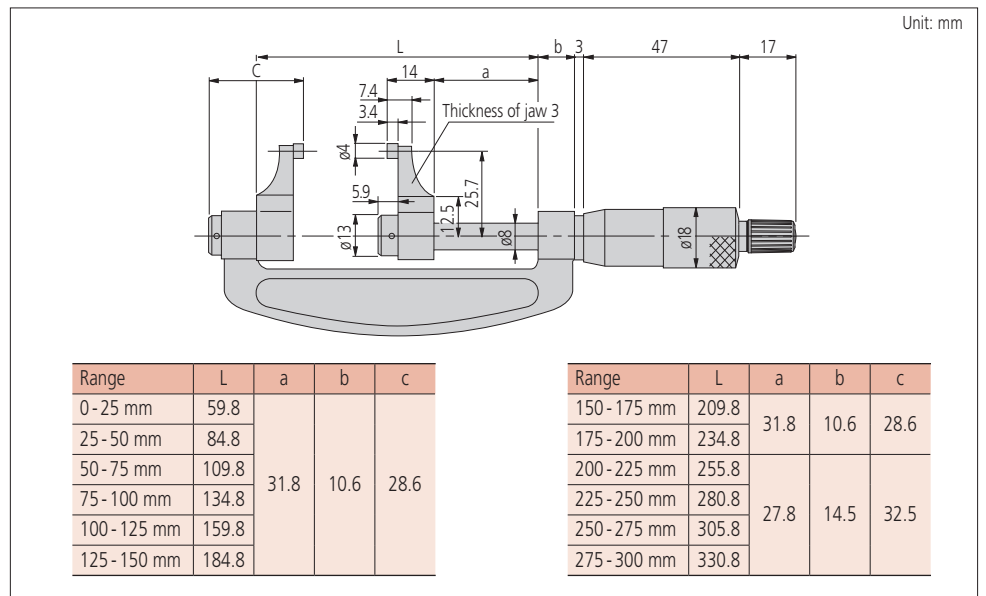
143-101

Specifications

Metric				
Code No.	Range	Graduation	Accuracy	Price
143-101	0 - 25 mm	0.01 mm	$\pm 5 \mu\text{m}$	£244.00
143-102	25 - 50 mm		$\pm 6 \mu\text{m}$	£261.00
143-103	50 - 75 mm		$\pm 7 \mu\text{m}$	£266.00
143-104	75 - 100 mm		$\pm 8 \mu\text{m}$	£278.00
143-105	100 - 125 mm		$\pm 9 \mu\text{m}$	£324.00
143-106	125 - 150 mm		$\pm 9 \mu\text{m}$	£356.00
143-107	150 - 175 mm		$\pm 10 \mu\text{m}$	£379.00
143-108	175 - 200 mm		$\pm 10 \mu\text{m}$	£409.00
143-109	200 - 225 mm		$\pm 11 \mu\text{m}$	£421.00
143-110	225 - 250 mm		$\pm 11 \mu\text{m}$	£432.00
143-111	250 - 275 mm		$\pm 12 \mu\text{m}$	£478.00
143-112	275 - 300 mm		$\pm 12 \mu\text{m}$	£509.00

Inch				
Code No.	Range	Graduation	Accuracy	Price
143-121	0 - 1"	.001"	$\pm .00025$ "	£244.00
143-122	1 - 2"		$\pm .0002$ "	£261.00
143-123	2 - 3"		$\pm .00035$ "	£266.00

Dimensions



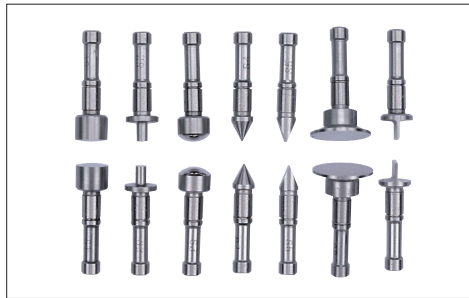
Micrometers

SERIES 116 – Interchangeable Anvil Universal Micrometer

- Non-rotating spindle type which accepts seven forms of optional interchangeable contact points (flat, spline, spherical, point, knife-edge, disc, and blade) for a wide range of applications.
- Equipped with Ratchet Stop for constant measuring force.
- Optional interchangeable contact points for screw thread measurement (matching V and cone) are also available.



116-101



Interchangeable contact points (optional).

Specifications

Metric

Code No.	Range	Graduation	Accuracy	Price
116-101	0 - 25 mm	0.01 mm	±4 μm	£255.00
116-102	25 - 50 mm			£335.00

Inch

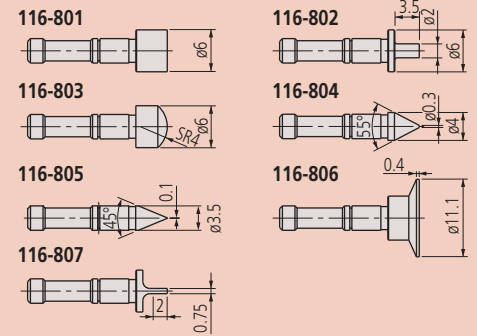
Code No.	Range	Graduation	Accuracy	Price
116-105	0 - 1"	.001"	±.0002"	£255.00
116-106	1 - 2"			£335.00

Note: 116-102 is provided with a plain setting standard (167-101) and a 60°-thread setting standard (167-261) for adjusting the minimum range point according to the application.

Technical Data

Spindle feed error: 3 μm / .00015"

Optional Accessories



Interchangeable contact points (pair)

Code No.	Description	Price
116-801	Flat	£52.00
116-802	Spline	£52.00
116-803	Spherical	£52.00
116-804	Point	£52.00
116-805	Knife-edge	£52.00
116-806	Disc	£52.00
116-807	Blade	£52.00

Interchangeable contact points set

Code No.	Description	Price
116-800	Consists of 126-801 to 126-807	£311.00

Thread-measuring interchangeable contact points (pair)

Code No.	Metric	UNF	Price
116-831	0.4 - 0.5 mm	64 - 48 TPI	£52.00
116-832	0.6 - 0.9 mm	44 - 28 TPI	£52.00
116-833	1 - 1.75 mm	24 - 14 TPI	£52.00
116-834	2 - 3 mm	13 - 9 TPI	£52.00
116-835	3.5 - 5 mm	8 - 5 TPI	£52.00
116-836	5.5 - 7 mm	4.5 - 3.5 TPI	£52.00

Thread-measuring interchangeable contact points set

Code No.	Description	Price
116-830	Consists of 116-831 to 116-836	£311.00



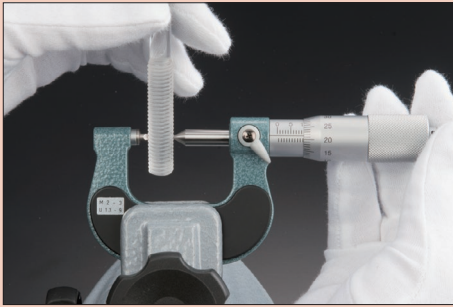
Technical Data

Accuracy*: $\pm(2+R/75) \mu\text{m}$

Spindle feed error: $3 \mu\text{m}$

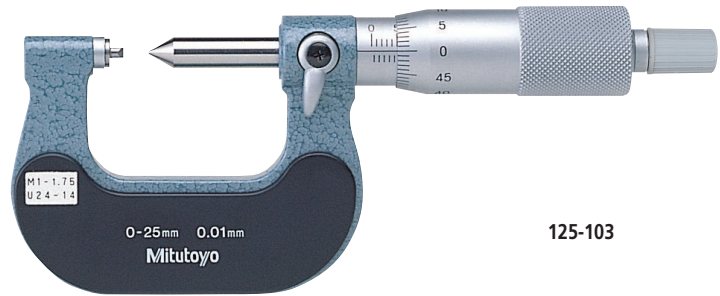
* R = max. range (mm/inch).

Note: Fractions rounded up.



SERIES 125 – Screw Thread Micrometer

- Fixed anvil type to suit 60° threads.
- Directly indicates screw pitch diameter (no need for calculation).
- Equipped with Ratchet Stop for constant measuring force.



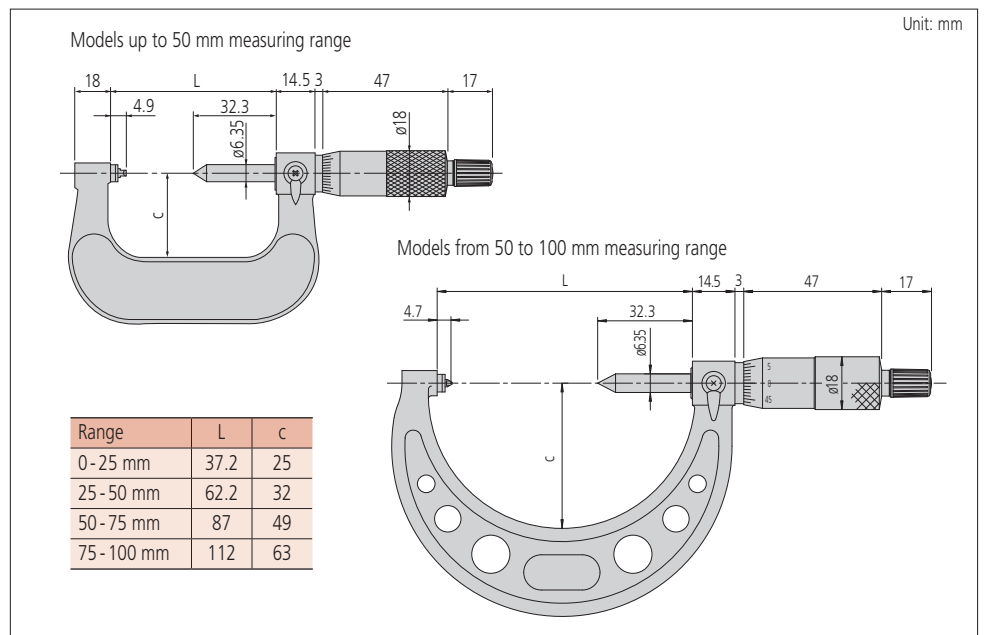
Specifications

Metric

Code No.	Thread to be measured (Metric/Unified)	Range	Graduation	Price
125-101	0.4-0.5 mm/64-48 TPI	0-25 mm	0.01 mm	£159.00
125-102	0.6-0.9 mm/44-28 TPI			£159.00
125-103	1-1.75 mm/24-14 TPI			£159.00
125-104	2-3 mm/13-9 TPI			£159.00
125-105	3.5-5 mm/8-5 TPI			£159.00
125-106	0.4-0.5 mm/64-48 TPI	25-50 mm		£221.00
125-107	0.6-0.9 mm/44-28 TPI			£221.00
125-108	1-1.75 mm/24-14 TPI			£221.00
125-109	2-3 mm/13-9 TPI			£221.00
125-110	3.5-5 mm/8-5 TPI			£221.00
125-111	0.6-0.9 mm/44-28 TPI	50-75 mm		£253.00
125-112	1-1.75 mm/24-14 TPI			£253.00
125-113	2-3 mm/13-9 TPI			£253.00
125-114	3.5-5 mm/8-5 TPI			£253.00
125-115	5.5-7 mm/4.5-3.5 TPI			£253.00
125-116	0.6-0.9 mm/44-28 TPI	75-100 mm		£265.00
125-117	1-1.75 mm/24-14 TPI			£265.00
125-118	2-3 mm/13-9 TPI			£265.00
125-119	3.5-5 mm/8-5 TPI			£265.00
125-120	5.5-7 mm/4.5-3.5 TPI			£265.00

Note: A setting standard is supplied with each model (except for 0-25 mm measuring range). The setting standard is for metric threads (unified) 60°.

Dimensions



Micrometers

SERIES 326 – Digimatic Interchangeable Anvil Screw Thread Micrometer

- Anvils and spindle tips are interchangeable in matching pairs to enable measurement of Metric/Unified or Whitworth threads.
- Direct reading of screw pitch diameter (no need for calculation).
- Equipped with Ratchet Stop for constant measuring force.
- Interchangeable anvils/spindle tips are optional.



326-351-30



Interchangeable anvils / spindle tips (optional)

Specifications

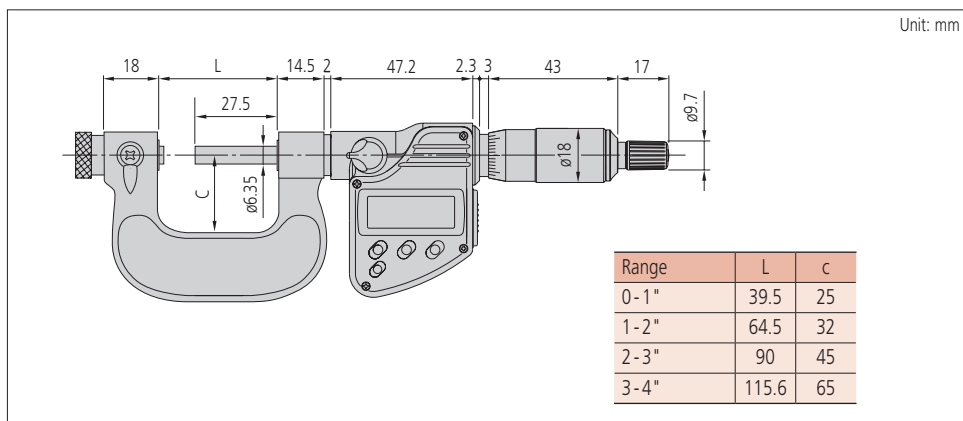
Inch/Metric

Code No.	Range	Resolution	Accuracy*	Price
326-351-30	0 - 1" (0 - 25.4 mm)	.00005" (0.001 mm)	±.0002" (±4 μm)	£558.00
326-352-30	1 - 2" (25.4 - 50.8 mm)			£571.00
326-353-30	2 - 3" (50.8 - 76.2 mm)			£593.00
326-354-30	3 - 4" (76.2 - 101.6 mm)			£618.00

* Excluding quantizing error.

Note: A matching setting standard is supplied with each model (except for 0-25 mm measuring range). The setting standard is for metric threads (unified) 60°.

Dimensions



Technical Data

Spindle feed error: .00015" (3 μm)
 Battery: SR44 (2 pcs) **938882**

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.

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.

Data output:
 Models equipped with this function have an output port for transferring measurement data to a Statistical Process Control (SPC) system.

Error alarm:
 In the unlikely event of a display overflow or calculation error, an error message is displayed and measurement stops. Measurement cannot continue until the error is corrected. Also, if the battery voltage drops below a certain point, the battery indicator will turn on before measurement becomes impossible, warning the user that the battery needs to be replaced.

Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00

Interchangeable anvil/spindle tip sets refer to page B-32.



Technical Data

Spindle feed error: $3 \mu\text{m} / .00015''$

Interchangeable Anvils/Spindle Tips



For Metric/Unified threads (pair)

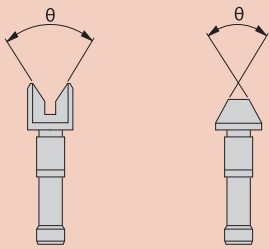
Code No.	Metric	UNF	Price
126-801	0.4 - 0.5 mm	64 - 48	£46.70
126-802	0.6 - 0.9 mm	44 - 28	£46.70
126-803	1 - 1.75 mm	24 - 14	£46.70
126-804	2 - 3 mm	13 - 9	£46.70
126-805	3.5 - 5 mm	8 - 5	£46.70
126-806	5.5 - 7 mm	4.5 - 3.5	£46.70

For Whitworth threads (pair)

Code No.	TPI	Price
126-811	60 - 48	£46.70
126-812	48 - 40	£46.70
126-813	40 - 32	£46.70
126-814	32 - 24	£46.70
126-815	24 - 18	£46.70
126-816	18 - 14	£46.70
126-817	14 - 10	£46.70
126-818	10 - 7	£46.70
126-819	7 - 4.5	£46.70
126-820	4.5 - 3.5	£46.70

Sets

Code No.	Description	Price
126-800	Consists of 126-801 to 126-806	£311.00
126-810	Consists of 126-811 to 126-820	£516.00

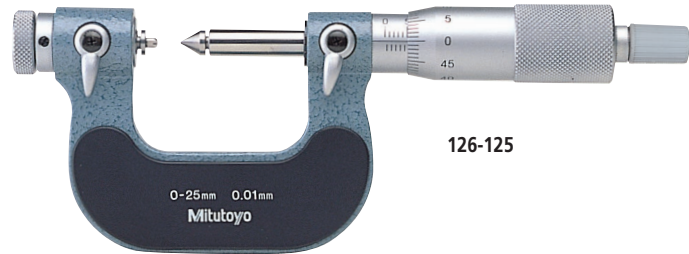


Allowable error in the vee/cone angles

Type	Metric (Unified)	Whitworth (Unified)	Half angle error
Pitch (mm), Nominal designation of threads per inch		W1	$\pm 30'$
	M1 (U1)	W2	$\pm 30'$
		W3	$\pm 20'$
	M2 (U2)	W4	$\pm 20'$
		W5	$\pm 15'$
	M3 (U3)	W6	$\pm 15'$
		W7	$\pm 10'$
	M4 (U4)	W8	$\pm 10'$
		W9	$\pm 10'$
	M5 (U5)	W10	$\pm 10'$
			$\pm 10'$

SERIES 126 – Interchangeable Anvil Screw Thread Micrometer

- Anvils and spindle tips are interchangeable in matching pairs to enable measurement of Metric/Unified or Whitworth threads.
- Direct reading of screw pitch diameter (no need for calculation).
- Equipped with Ratchet Stop for constant measuring force.
- Interchangeable anvils/spindle tips are optional.



Specifications

Metric				
Code No.	Range	Graduation	Accuracy	Price
126-125	0 - 25 mm	0.01 mm	$\pm 4 \mu\text{m}$	£219.00
126-126	25 - 50 mm			£275.00
126-127	50 - 75 mm			£283.00
126-128	75 - 100 mm		$\pm 5 \mu\text{m}$	£293.00
126-129	100 - 125 mm			£339.00
126-130	125 - 150 mm			£404.00
126-131	150 - 175 mm		$\pm 6 \mu\text{m}$	£493.00
126-132	175 - 200 mm			£571.00
126-133	200 - 225 mm			£600.00
126-134	225 - 250 mm		$\pm 7 \mu\text{m}$	£602.00
126-135	250 - 275 mm			£708.00
126-136	275 - 300 mm			£723.00

Inch				
Code No.	Range	Graduation	Accuracy	Price
126-137	0 - 1"	.001"	$\pm .0002''$	£219.00
126-138	1 - 2"			£275.00
126-139	2 - 3"			£283.00
126-140	3 - 4"		$\pm .00025''$	£293.00
126-141	4 - 5"			£339.00
126-142	5 - 6"			£404.00
126-143	6 - 7"		$\pm .0003''$	£493.00

Note: A matching setting standard is supplied with each model (except for 0 - 25 mm measuring range). The setting standard is for metric threads (unified) 60°.

Dimensions

Unit: mm					
Range	L	c	Range	L	c
0 - 25 mm	39.5	25	150 - 175 mm	190.5	105
25 - 50 mm	64.5	32	175 - 200 mm	215.5	120
50 - 75 mm	90	45	200 - 225 mm	240.5	130
75 - 100 mm	115.6	65	225 - 250 mm	265.5	147
100 - 125 mm	140.6	79	250 - 275 mm	290.5	165
125 - 150 mm	165.6	93	275 - 300 mm	315.5	171

Micrometers

SERIES 313 – Three-Wire Units

- Enables measurement of the pitch diameter (effective diameter) of screw threads with a standard micrometer using the *three-wire method*.



952141

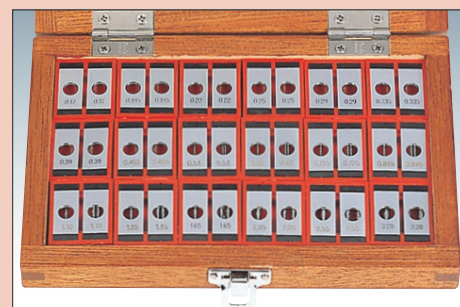
Specifications

Code No.	No. of units in set	Wire diameter range (mm)	Support spindle (mm)	Price
Three-Wire Unit set				
313-101	18	0.170 - 3.200	ø6.35	£2820.00

Code No.	Wire diameter (mm)	Thread type			Price
		Metric (mm)	Unified (threads per inch)	Whitworth (threads per inch)	
One pair, support spindle ø6.35 mm (ø.25")					
952131	0.170	0.2, 0.25, 0.3	80	—	£160.00
952132	0.195	0.35	72	—	£160.00
952133	0.220	0.4	64	—	£160.00
952134	0.250	0.45	56	60	£160.00
952135	0.290	0.5	48	48	£160.00
952136	0.335	0.6	44, 40	40	£160.00
952137	0.390	0.7	36	36	£160.00
952138	0.455	0.75, 0.8	32	32	£160.00
952139	0.530	0.9	28	28, 26	£160.00
952140	0.620	1.0	24	24, 22	£160.00
952141	0.725	1.25	20	20, 19, 18	£160.00
952142	0.895	1.5	18, 16	16	£160.00
952143	1.100	1.75, 2.0	14, 13, 12	14, 12	£160.00
952144	1.350	2.5	11, 10	11, 10	£160.00
952145	1.650	3.0	9, 8	9, 8	£160.00
952146	2.050	3.5	7	7	£160.00
952147	2.550	4, 4.5	6	6	£160.00
952148	3.200	5, 5.5, 6	5, 4.5	5, 4.5	£160.00

Technical Data

Roundness:	0.5 µm or less
Cylindricity:	1 µm or less
Hardness:	63 to 66 HRC
Accuracy:	±2 µm



313-101



SERIES 169 – Paper Thickness Micrometer

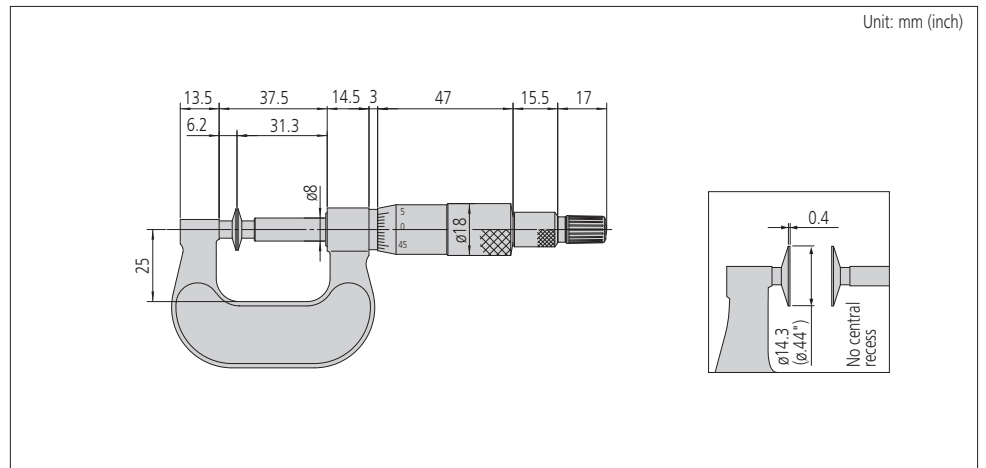
- Ideal where a greater contact area is advantageous such as when measuring soft and thin workpieces such as paper, felt, rubber, cardboard, fabrics and similar materials.
- Non-rotating spindle ensures no twisting action is applied to the material being measured.
- Equipped with Ratchet Stop for constant measuring force ($8 \pm 0.8N$).



Specifications

Metric						
Code No.	Range	Graduation	Accuracy	Flatness	Parallelism	Price
169-101	0-25 mm	0.01 mm	$\pm 4 \mu m$	1 μm	3 μm	£196.00
Inch						
Code No.	Range	Graduation	Accuracy	Flatness	Parallelism	Price
169-103	0-1"	.001"	$\pm .0002$ "	.00004"	.00012"	£196.00

Dimensions



Micrometers

SERIES 323 – Digimatic Disc Micrometer

- Can be used for making root tangent measurements on spur gears and helical gears.
- Equipped with Ratchet Stop for constant measuring force.
- Supplied with a setting standard (except for 0 - 25 mm / 0 - 1" measuring range).



323-350-30

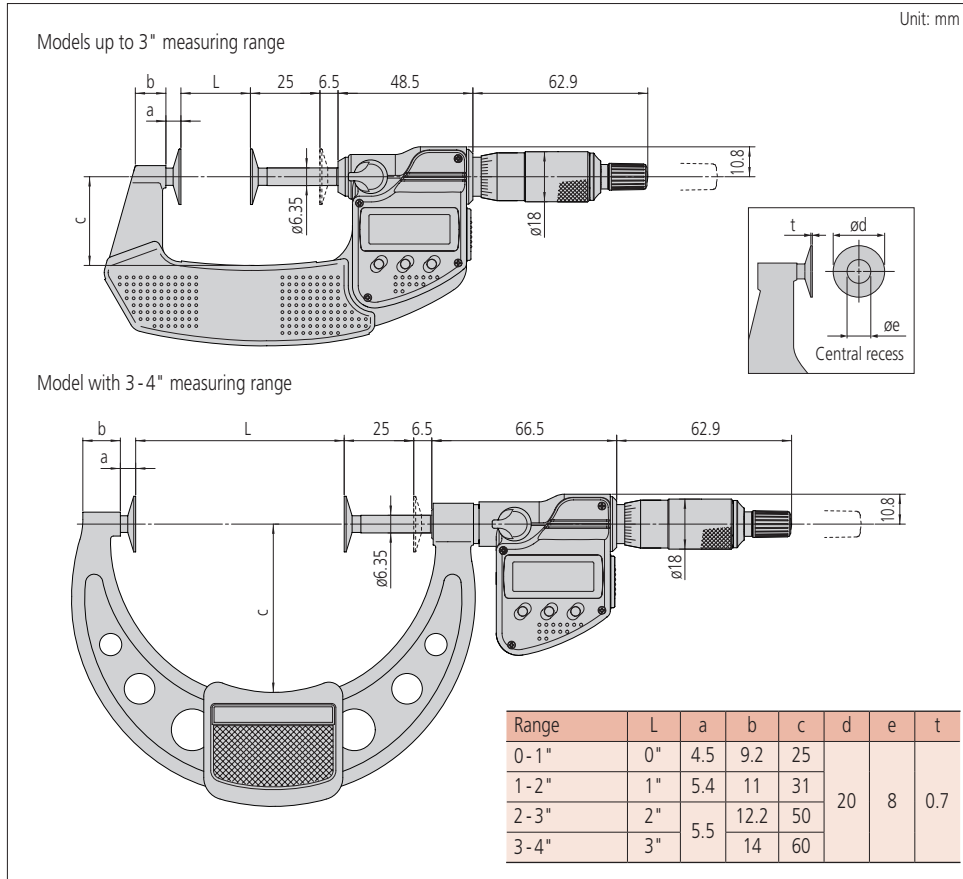
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Anvil	Measurable module	Price
323-350-30	0 - 1" (0 - 25.4 mm)	.00005" (0.001 mm)	±.0002" (± 4 μm)	ø.787" (ø20 mm)	0.5 - 6	£417.00
323-351-30	1 - 2" (25.4 - 50.8 mm)					£454.00
323-352-30	2 - 3" (50.8 - 76.2 mm)		£508.00			
323-353-30	3 - 4" (76.2 - 101.6 mm)		±.0003" (± 6 μm)			£537.00

* Excluding quantizing error.

Dimensions

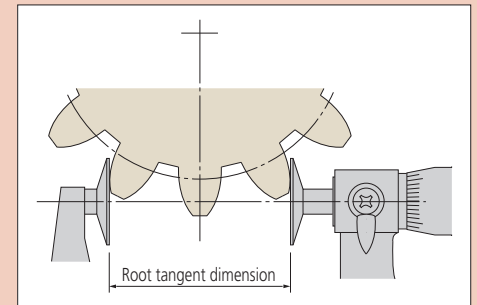


Technical Data

Flatness:	.00004" (1 μm)
Parallelism:	.0002" (4 μm) for models up to 2", .0003" (6 μm) for models up to 4"
Battery:	SR44 (2 pcs) 938882

Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



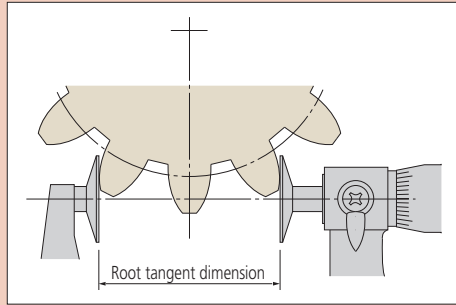
Root tangent (En).



Technical Data

Flatness:	1 μm / .00004" for models up to 100 mm / 4", 1.6 μm / .00063" for models over 100 mm / 4"
Parallelism:	4 μm / .0002" for models up to 50 mm / 2", 6 μm / .0003" for models up to 100 mm / 4"

* R = max. range (mm).
Note: Fractions rounded up.



Root tangent (En).

SERIES 123 – Disc Micrometer

- Can be used for making root tangent measurements on spur gears and helical gears.
- Equipped with Ratchet Stop for constant measuring force.
- Supplied with a setting standard (except for 0-25 mm/0-1" measuring range).



Specifications

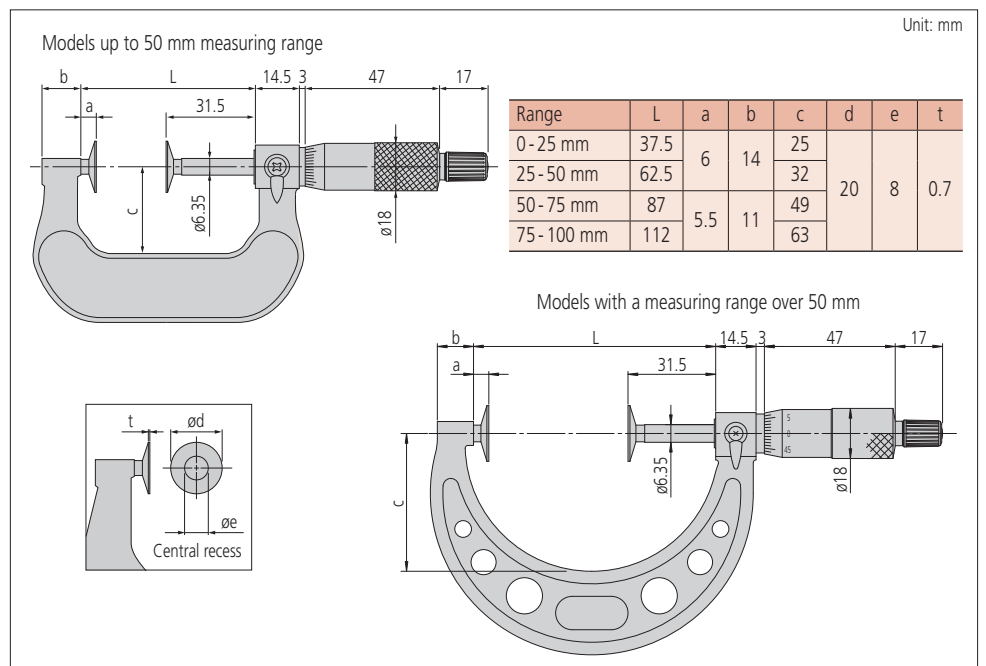
Metric

Code No.	Range	Graduation	Accuracy	Anvil	Measurable module	Price
123-101	0-25 mm	0.01 mm	$\pm 4 \mu\text{m}$	$\varnothing 20 \text{ mm}$	0.5-6	£191.00
123-102	25-50 mm					£215.00
123-103	50-75 mm		$\pm 6 \mu\text{m}$			£235.00
123-104	75-100 mm					£249.00

Inch

Code No.	Range	Graduation	Accuracy	Anvil	Measurable module	Price
123-125	0-1"	.001"	$\pm .0002"$	$\varnothing .787"$	0.5-6	£191.00
123-126	1-2"					£215.00
123-127	2-3"		$\pm .0003"$			£235.00
123-128	3-4"					£249.00

Dimensions



Micrometers

SERIES 324 – Digimatic Interchangeable Anvil Gear Tooth Micrometer

- Intended for making *over-pin diameter* measurements on gears using precision ball anvils/spindle tips.
- Interchangeable steel (or carbide) ball anvils/spindle tips for various gear modules (0.5 - 5.25) are optional.
- Equipped with Ratchet Stop for constant measuring force.



324-351-30

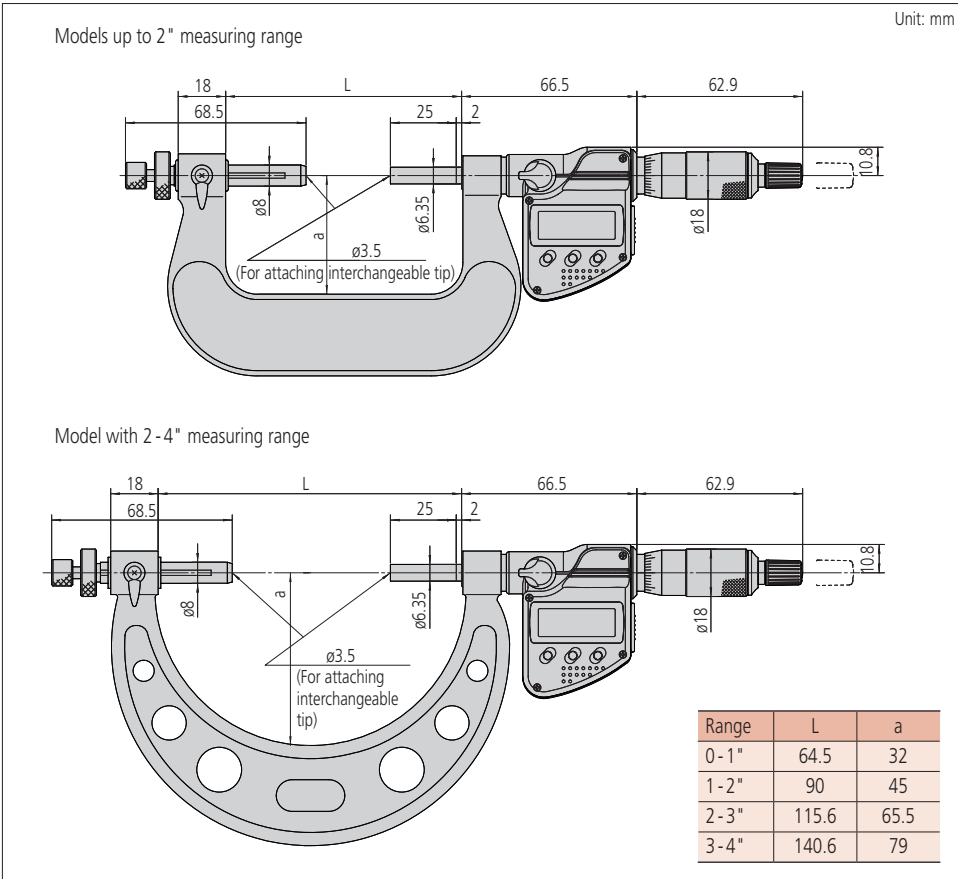
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Price
324-351-30	0 - 1" (0 - 25.4 mm)	.00005" (0.001 mm)	±.0002" (± 4 μm)	£563.00
324-352-30	1 - 2" (25.4 - 50.8 mm)			£610.00
324-353-30	2 - 3" (50.8 - 76.2 mm)			£644.00
324-354-30	3 - 4" (76.2 - 101.6 mm)			£688.00

* Excluding quantizing error.

Dimensions



Technical Data

Battery: SR44 (2 pcs) 938882

Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00

Interchangeable anvil/spindle tip sets refer to page B-38.



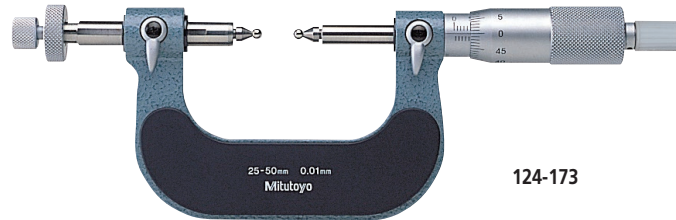
Interchangeable Anvils/Spindle Tips

Code No.	Diameter* (mm)	Gear module	Dia. pitch	Price
124-801	ø0.8	0.5-0.55	50	£74.20
124-802	ø1.0	0.6-0.65	45	£74.20
124-803	ø1.191 ($\frac{9}{64}$ ")	0.7-0.8	35-30	£74.20
124-821	ø1.5	0.9-1	28-26	£74.20
124-804	ø1.588 ($\frac{1}{16}$ ")	0.9-1	28-26	£74.20
124-805	ø2.0	1.25	22	£74.20
124-806	ø2.381 ($\frac{9}{32}$ ")	1.5	17	£74.20
124-822	ø2.5	1.5	17	£74.20
124-807	ø3.0	1.75	15	£74.20
124-808	ø3.175 ($\frac{1}{8}$ ")	—	14	£74.20
124-823	ø3.5	2	13	£74.20
124-809	ø3.969 ($\frac{5}{32}$ ")	2	13	£74.20
124-810	ø4.0	2.25	11	£74.20
124-824	ø4.5	2.5	10	£74.20
124-811	ø4.763 ($\frac{3}{16}$ ")	2.5	10	£74.20
124-812	ø5.0	2.75	9	£74.20
124-813	ø5.556 ($\frac{7}{32}$ ")	3.0-3.25	8	£74.20
124-814	ø6.0	3.5	7	£74.20
124-815	ø6.35 ($\frac{1}{4}$ ")	3.75	7	£74.20
124-816	ø7.0	4.0	6.5	£74.20
124-817	ø7.144 ($\frac{9}{32}$ ")	4.25	6	£74.20
124-818	ø7.938 ($\frac{5}{16}$ ")	4.5	5.5	£74.20
124-819	ø8.0	4.75	5.5	£74.20
124-820	ø8.731 ($\frac{11}{32}$ ")	0.5-5.25	5	£74.20

* ø2 mm or less /carbide-tipped type.

SERIES 124 – Interchangeable Anvil Gear Tooth Micrometer

- Intended for making *over-pin diameter* measurements on gears using precision ball anvils/spindle tips.
- Interchangeable steel (or carbide) ball anvils/spindle tips for various gear modules (0.5 - 5.25) are optional.
- Equipped with Ratchet Stop for constant measuring force.

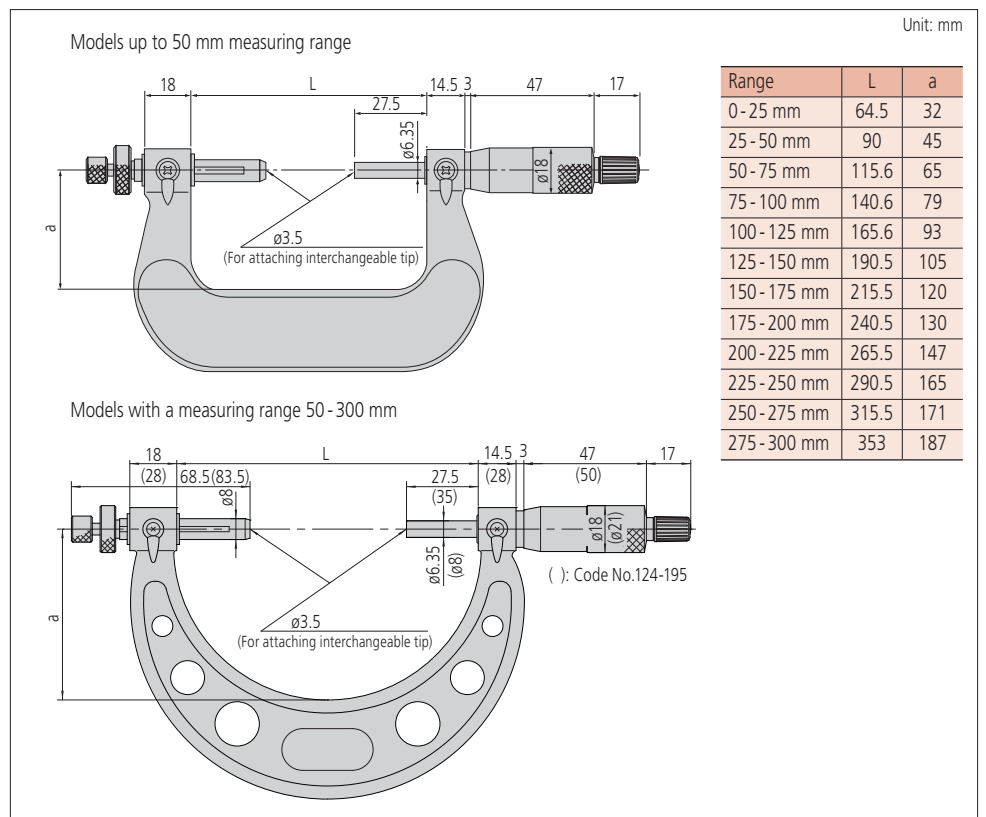


124-173

Specifications

Metric				
Code No.	Range	Graduation	Accuracy	Price
124-173	0 - 25 mm	0.01 mm	±4 μm	£220.00
124-174	25 - 50 mm			£233.00
124-175	50 - 75 mm			£245.00
124-176	75 - 100 mm		±5 μm	£265.00
124-177	100 - 125 mm			£286.00
124-178	125 - 150 mm			£317.00
124-179	150 - 175 mm		±6 μm	£363.00
124-180	175 - 200 mm			£376.00
124-181	200 - 225 mm			£425.00
124-182	225 - 250 mm		±7 μm	£473.00
124-183	250 - 275 mm	£509.00		
124-195	275 - 300 mm	£546.00		

Dimensions



Micrometers

SERIES 369 – Digimatic Non-Rotating Spindle Disc Micrometer

- Can be used for making root tangent measurements on spur gears and helical gears.
- Measurable range of gear pitch: 0.5 to 6 module.
- Equipped with Ratchet Stop for constant measuring force.
- Supplied with a setting standard (except for 0-25 mm/0-1" measuring range).



369-350-30

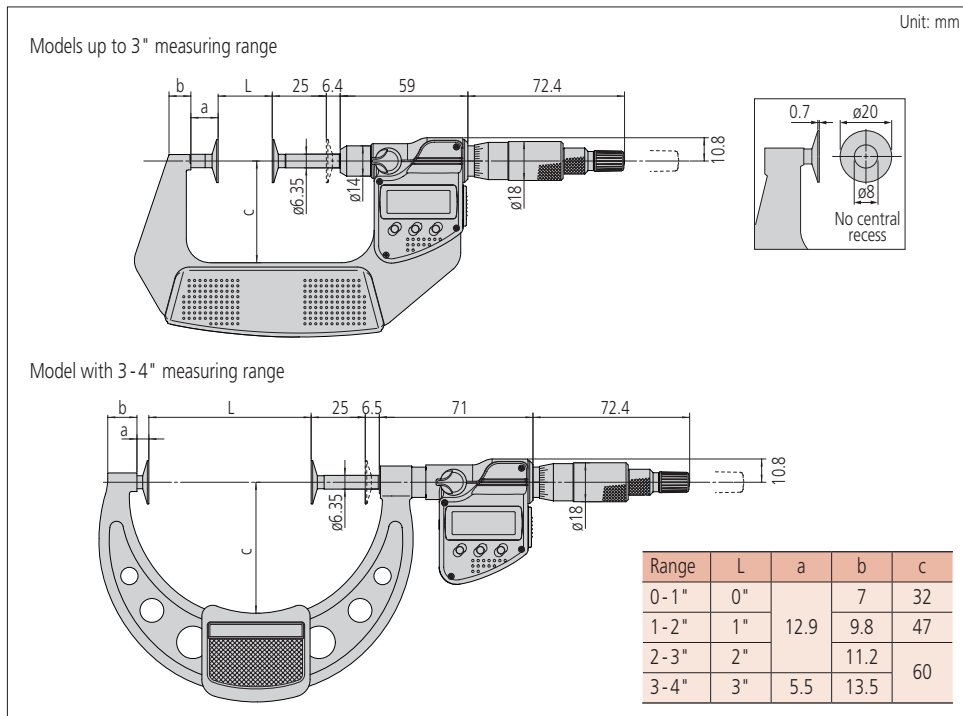
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Anvil	Flatness	Parallelism	Price
369-350-30	0-1" (0-25.4 mm)	.00005" (0.001 mm)	±.0002" (±4 μm)	ø20	.00004" (1 μm)	.0002" (4 μm)	£519.00
369-351-30	1-2" (25.4-50.8 mm)					.0002" (4 μm)	£693.00
369-352-30	2-3" (50.8-76.2 mm)		±.0003" (±6 μm)			.0003" (6 μm)	£724.00
369-353-30	3-4" (76.2-101.6 mm)					.0003" (6 μm)	£748.00

* Excluding quantizing error.

Dimensions



Technical Data

Battery: SR44 (2 pcs) 938882

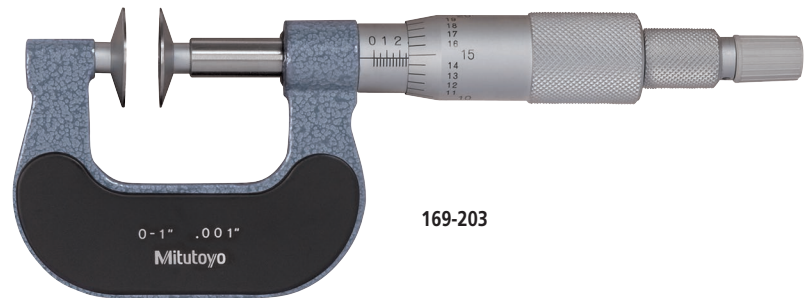
Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



SERIES 369 – Non-Rotating Spindle Disc Micrometer

- Can be used for making root tangent measurements on spur gears and helical gears.
- Measurable range of gear pitch: 0.5 to 6 module.
- Equipped with Ratchet Stop for constant measuring force.
- Supplied with a setting standard (except for 0-25 mm/0-1" measuring range).

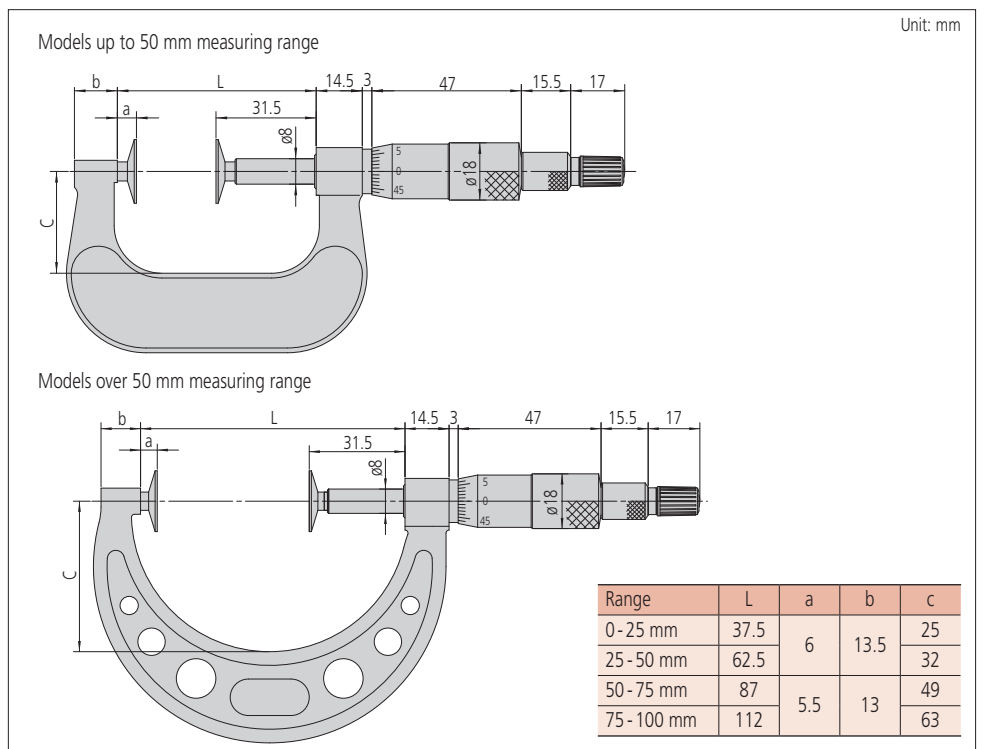


Specifications

Metric							
Code No.	Range	Graduation	Accuracy	Anvil	Flatness	Parallelism	Price
169-201	0-25 mm	0.01 mm	±4 μm	ø20	1 μm	4 μm	£207.00
169-202	25-50 mm						£234.00
169-205	50-75 mm		±6 μm			6 μm	£253.00
169-207	75-100 mm					£276.00	

Inch							
Code No.	Range	Graduation	Accuracy	Anvil	Flatness	Parallelism	Price
169-203	0-1"	.001"	±.0002"	ø20	.00004"	.00016"	£207.00
169-204	1-2"						£234.00
169-206	2-3"		±.0003"			.00024"	£253.00
169-208	3-4"					£276.00	

Dimensions



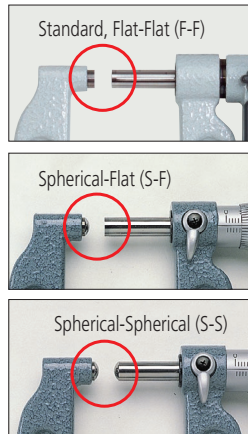
Micrometers

SERIES 389 – Digimatic Sheet Metal Micrometer

- The large throat depth makes this micrometer ideal for measuring the thickness of sheet metal at a considerable distance from the edge.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.
- Profile of measuring faces: Flat-Flat, Spherical-Flat and Spherical-Spherical.



389-351-30



Specifications

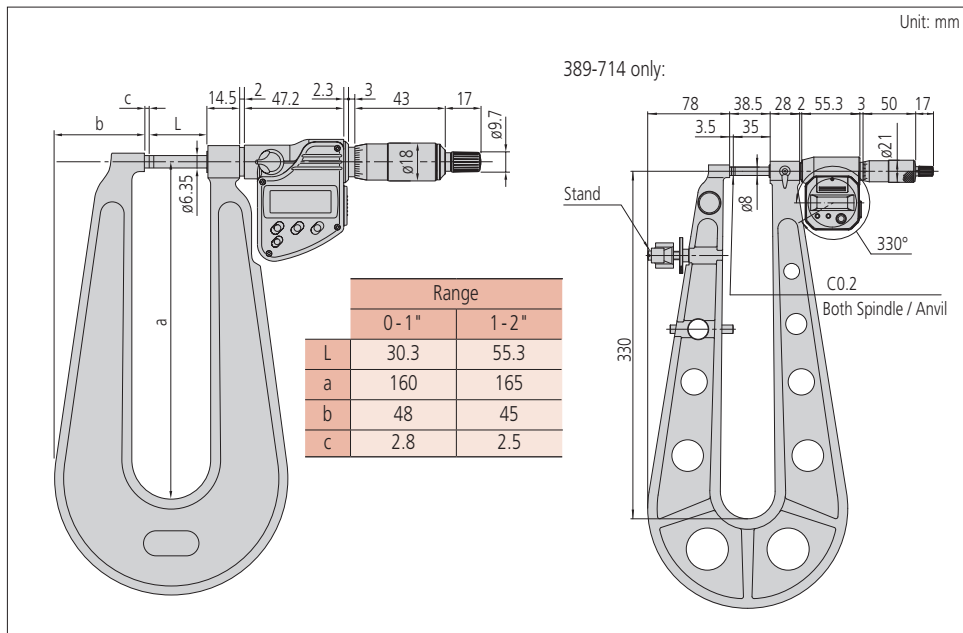
Inch/Metric

Code No.	Range	Resolution	Accuracy* ¹	Throat depth* ²	Measuring surfaces	Price
389-351-30	0 - 1" (0 - 25.4 mm)	.00005" (0.001 mm)	±.0002" (±4 μm)	6" (150 mm)	F-F	£457.00
S-F					£470.00	
S-S					£470.00	
389-714	1 - 2" (25.4 - 50.8 mm)	.00005" (0.001 mm)	±.00025" (±5 μm)	12" (300 mm)	F-F	£903.00
S-F					£511.00	
S-S					£523.00	

*¹ Excluding quantizing error.

*² Models with a 300 mm (12") throat are equipped with a stand for convenience of measurement in the horizontal orientation.

Dimensions



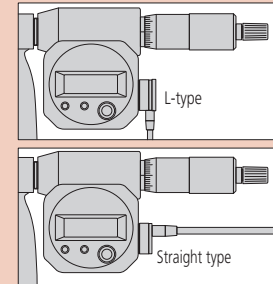
Technical Data

Flatness:	.000024" (0.6 μm) for models up to 6" (150 mm) throat, .00004" (1.0 μm) for models with 12" (300 mm) throat
Parallelism:	.00012" (3 μm)
Quantizing error:	Excluding ±1 count
Battery:	SR44 (1 pc), 938882 (2 pcs: 389-714)

Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00
For 389-714		
04AZB512	L-type SPC data cable (1 m)	£75.00
04AZB513	L-type SPC data cable (2 m)	£80.00
959149	SPC data cable with pushbutton (1 m)* ³	£34.60
959150	SPC data cable with pushbutton (2 m)* ³	£39.40

*³ May interfere with operating the thimble.

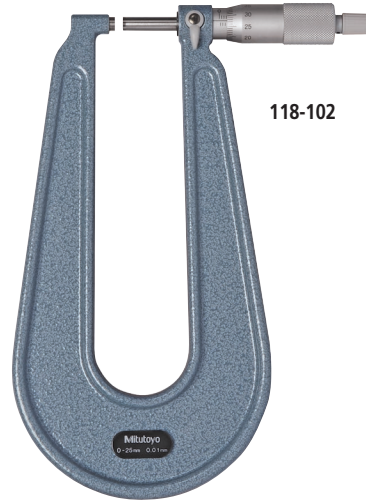


Technical Data

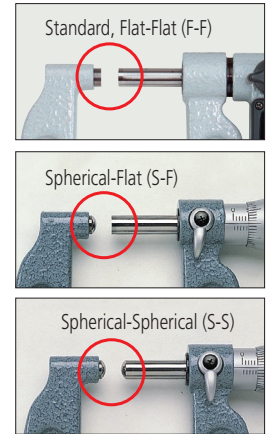
Flatness:	0.6 μm / .000024" for models up to 150 mm / 6" throat, 1.0 μm / .00004" for models with 300 mm / 12" throat
Parallelism:	3 μm / .00012"

SERIES 389 – Sheet Metal Micrometer

- The large throat depth makes this micrometer ideal for measuring the thickness of sheet metal at a considerable distance from the edge.
- Measuring faces: Carbide.
- Profile of measuring faces: Flat-Flat, Spherical-Flat and Spherical-Spherical.
- Equipped with Ratchet Stop for constant measuring force.



118-102



Specifications

Metric

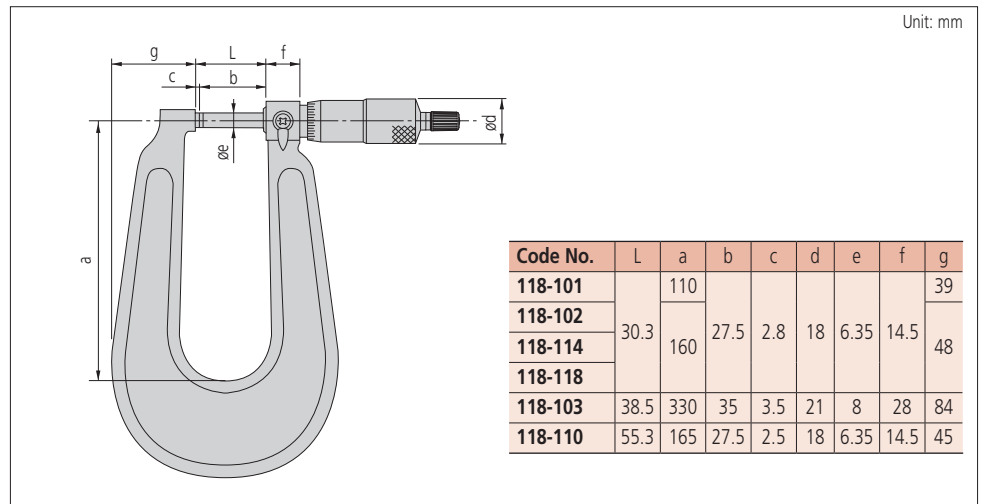
Code No.	Range	Graduation	Accuracy	Throat depth*	Measuring surfaces	Price
118-101	0 - 25 mm	0.01 mm	$\pm 4 \mu\text{m}$	100 mm	F-F	£144.00
118-102					F-F	£153.00
118-114				S-F	£175.00	
118-118				S-S	£196.00	
118-103	25 - 50 mm	0.01 mm	$\pm 5 \mu\text{m}$	300 mm	F-F	£252.00
118-110				150 mm	F-F	£196.00
118-126				150 mm	S-S	£210.00

Inch

Code No.	Range	Graduation	Accuracy	Throat depth*	Measuring surfaces	Price
118-129	0 - 1"	.0001"	$\pm .0002$ "	6"	F-F	£153.00
118-116					S-F	£175.00
118-120					S-S	£196.00
118-107	1 - 2"	.001"	$\pm .00025$ "	12"	F-F	£252.00
118-112						$\pm .0002$ "

* Models with a 300 mm (12") throat are equipped with a stand for convenience of measurement in the horizontal orientation.

Dimensions



Micrometers

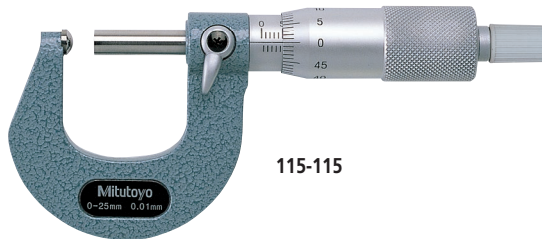
SERIES 395,115 – Tube Micrometers

- Designed to measure workpieces with concave-convex surfaces such as the wall thickness of tubes and pipes.
- Measuring faces: Carbide (**115-101**: only the spindle is carbide tipped).
- 395 series: IP65 digital spherical-flat anvil type micrometer.
- Equipped with Ratchet Stop for constant measuring force.

IP65



395-351-30



115-115

Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	D	Price
Digimatic					
395-351-30	0 - 1" (0 - 25.4 mm)	.00005" (0.001 mm)	±.0001" (±2 μm)	ø.59" (ø15 mm)	£391.00
395-352-30	1 - 2" (25.4 - 50.8 mm)			ø.75" (ø19 mm)	£426.00
395-353-30	2 - 3" (50.8 - 76.2 mm)		±.00015" (±3 μm)	ø.75" (ø19 mm)	£472.00
395-354-30	3 - 4" (76.2 - 101.6 mm)			ø.75" (ø19 mm)	£455.00

Metric

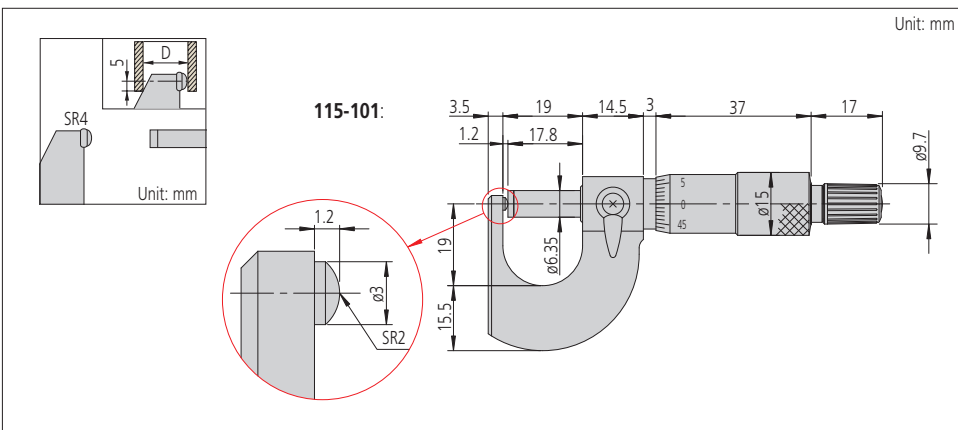
Code No.	Range	Graduation	Accuracy	D	Price
115-101	0 - 15 mm	0.01 mm	±3 μm	ø5.5 mm	£144.00
115-115	0 - 25 mm			ø10 mm	£91.10
115-116	25 - 50 mm			ø11 mm	£92.90
115-117	50 - 75 mm			ø17 mm	£94.90
115-118	75 - 100 mm		±4 μm	ø18 mm	£113.00

Inch

Code No.	Range	Graduation	Accuracy	D	Price
115-153	0 - 1"	.0001"	±.00015"	ø.40"	£91.10

* Excluding quantizing error.

Dimensions



Technical Data

Flatness:	.000024" / 0.6 μm: 115 series .000012" (0.3 μm): 395 series
Battery:	SR44 (1 pc), 938882 : 395 series

Optional Accessories (for 395 series only)

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



Technical Data

Battery: SR44 (1 pc), **938882**: 395 series

Optional Accessories (for 395 series only)

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



SERIES 395,115 – Spherical Anvil and Spindle Tube Micrometers

- Designed to measure workpieces with concave-concave surfaces such as the race-wall thickness of anti-friction bearings.
- Measuring faces: Carbide (**115-201**: only the spindle is carbide tipped).
- 395 series: Digimatic type IP65 rated with spherical anvil and spindle.
- Equipped with Ratchet Stop for constant measuring force.



395-371-30



115-215

Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	D	Price
Digimatic					
395-371-30	0-1" (0-25.4 mm)	.00005" (0.001 mm)	±.0001" (±2 μm)	ø.59" (ø15 mm)	£391.00
395-372-30	1-2" (25.4-50.8 mm)			ø.75" (ø19 mm)	£426.00
395-373-30	2-3" (50.8-76.2 mm)		±.00015" (±3 μm)	ø.79" (ø20 mm)	£472.00
395-374-30	3-4" (76.2-101.6 mm)				£495.00

Metric

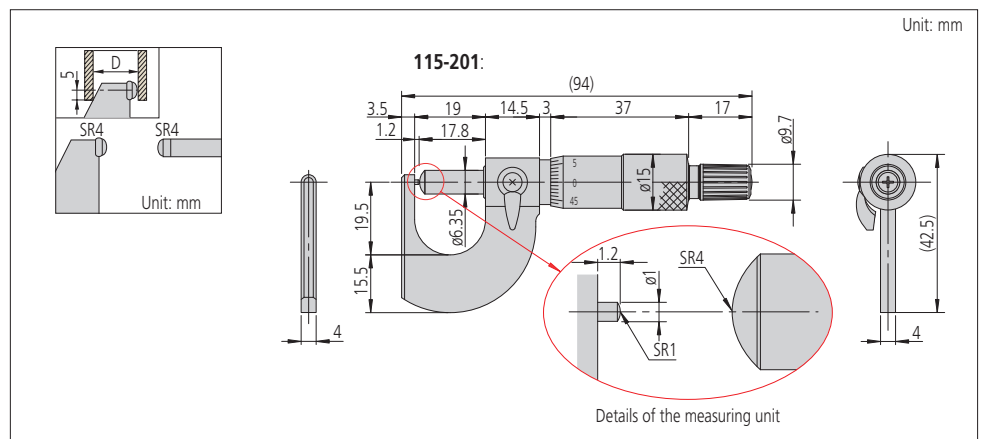
Code No.	Range	Graduation	Accuracy	D	Price
115-201	0-15 mm	0.01 mm	±3 μm	ø5.5 mm	£118.00
115-215	0-25 mm			ø10 mm	£97.20
115-216	25-50 mm			ø11 mm	£99.10
115-217	50-75 mm			ø17 mm	£110.00
115-218	75-100 mm		±4 μm	ø18 mm	£121.00

Inch

Code No.	Range	Graduation	Accuracy	D	Price
115-253	0-1"	.0001"	±.00015"	ø.40"	£97.20
115-242	1-2"	.001"		ø.44"	£99.10
115-243	2-3"			ø.67"	£110.00

* Excluding quantizing error.

Dimensions



Micrometers

SERIES 395,115 – Cylindrical/Spherical Anvil Tube Micrometers

- Spindle face: Carbide.
- 395 series: Digimatic type IP65 rated with a choice of spherical or cylindrical anvils.
- Equipped with Ratchet Stop for constant measuring force.



395-363-30



115-315

Specifications

Inch/Metric

Code No.	Range	Resolution	Remarks	Price
Digimatic				
395-362-30	0 - 1" (0 - 25.4 mm)	.00005" (0.001 mm)	BMB2	£381.00
395-363-30			BMB3	£437.00
395-364-30			BMB4	£437.00

Metric

Code No.	Range	Graduation	Remarks	Price
115-302	0 - 25 mm	0.01 mm	BMB1	£94.50
115-308			BMB2	£110.00
115-303	25 - 50 mm	0.01 mm	BMB1	£103.00
115-315	0 - 25 mm		BMB3	£109.00
115-316		BMB4	£109.00	

Inch

Code No.	Range	Graduation	Remarks	Price
115-305	0 - 1"	.001"	BMB1	£94.50
115-313		.0001"	BMB3	£109.00
115-314		BMB4	£109.00	

* Excluding quantizing error.

Dimensions

Unit: mm

D: Minimum insertable inside diameter
L: Distance to spindle centre

Anvil	D	L
BMB1	2	4
BMB2	3.6	4
BMB3	4.8	12
BMB4	8.2	22

Technical Data

Accuracy: $\pm (2 + L/75) \mu\text{m}$ (L= measured length)
 Battery: SR44 (1 pc), **938882**: 395 series

Optional Accessories (for 395 series only)

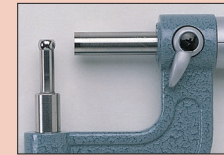
Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



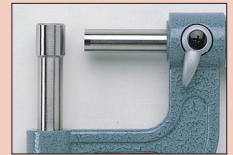
BMB1



BMB2



BMB3



BMB4



Technical Data

Flatness: .000012" (0.3 μm)
 Parallelism*: [.00008+.00004(R/4)]", (2+R/100) μm
 Battery: SR44 (1 pc), **938882**

Note: Fractions rounded down.
 * R = max. range (mm/inch).

Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



SERIES 331 – Digimatic Spline Micrometer

- The anvil and spindle are of small diameter for measuring splined shafts, slots, and keyways.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.



331-351-30

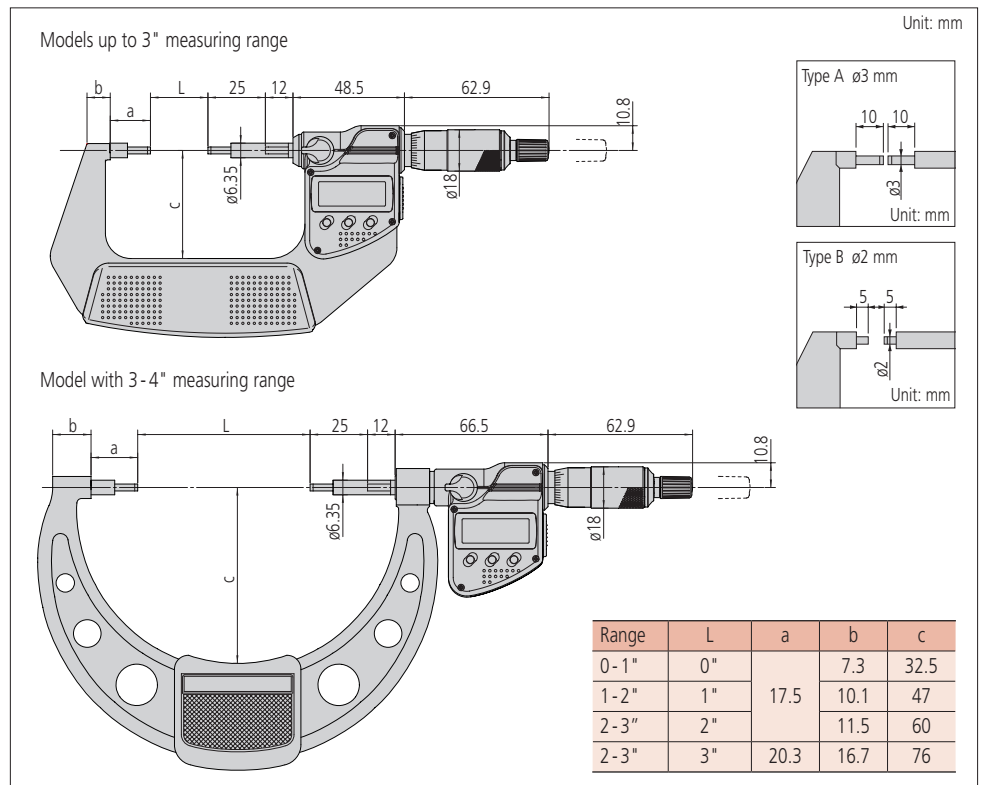
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Remarks	Price
331-351-30	0 - 1" (0 - 25.4 mm)	.00005" (0.001 mm)	±.0001" (±2 μm)	Type A	£393.00
331-352-30	1 - 2" (25.4 - 50.8 mm)				£443.00
331-353-30	2 - 3" (50.8 - 76.2 mm)				£454.00
331-354-30	3 - 4" (76.2 - 101.6 mm)		±.00015" (±3 μm)	£518.00	
331-361-30	0 - 1" (0 - 25.4 mm)		±.0001" (±2 μm)	Type B	£495.00
331-362-30	1 - 2" (25.4 - 50.8 mm)				£552.00
331-363-30	2 - 3" (50.8 - 76.2 mm)	£587.00			
331-364-30	3 - 4" (76.2 - 101.6 mm)	±.00015" (±3 μm)			£610.00

* Excluding quantizing error.

Dimensions



Micrometers

SERIES 111 – Spline Micrometer

- The anvil and spindle are of small diameter for measuring splined shafts, slots, and keyways.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.

Technical Data

Flatness: 0.3 μm / .000012"
 Parallelism*: (2+R/100) μm , [.00008+.00004(R/4)]"
 Note: Fractions rounded down.
 * R = max. range (mm/inch).



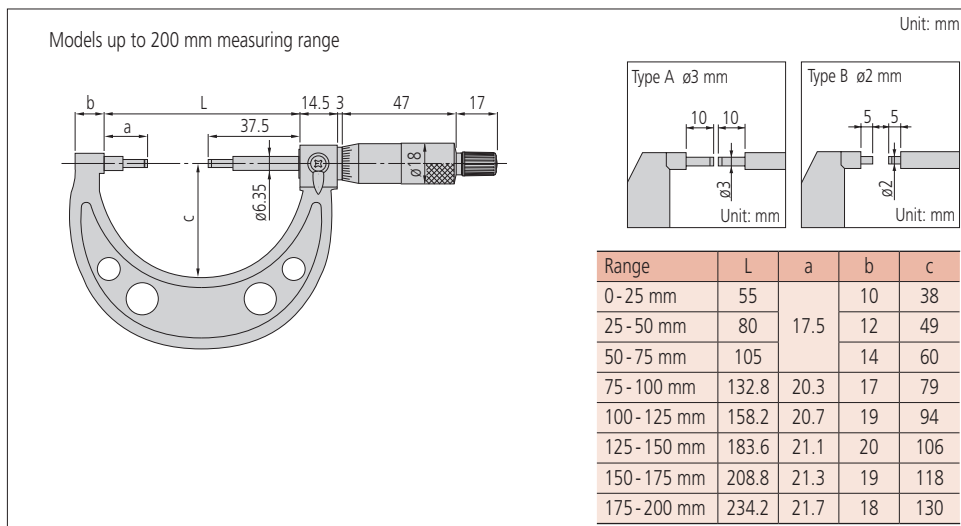
111-115

Specifications

Metric					
Code No.	Range	Graduation	Accuracy	Remarks	Price
111-215	0 - 25 mm	0.01 mm	$\pm 3 \mu\text{m}$	Type B	£150.00
111-115	0 - 25 mm			Type A	£142.00
111-116	25 - 50 mm				£165.00
111-117	50 - 75 mm				£184.00
111-118	75 - 100 mm				£197.00
111-119	100 - 125 mm				£289.00
111-120	125 - 150 mm		$\pm 4 \mu\text{m}$		£302.00
111-121	150 - 175 mm			Type A	£336.00
111-122	175 - 200 mm				£359.00
111-123	200 - 225 mm				£391.00
111-124	225 - 250 mm				£426.00
111-125	250 - 275 mm				$\pm 6 \mu\text{m}$
111-126	275 - 300 mm		£506.00		

Inch					
Code No.	Range	Graduation	Accuracy	Remarks	Price
111-166	0 - 1"	.0001"	$\pm .00015"$	Type A	£142.00

Dimensions



Technical Data

Battery: SR44 (1 pc), 938882

Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



SERIES 342 – Digimatic Point Micrometer

- Pointed spindle and anvil for measuring the web thickness of drills, small grooves, keyways, and other hard-to-reach features.
- The measuring points (carbide tipped) have, approximately, a 0.3 mm radius.
- Equipped with Ratchet Stop for constant measuring force.



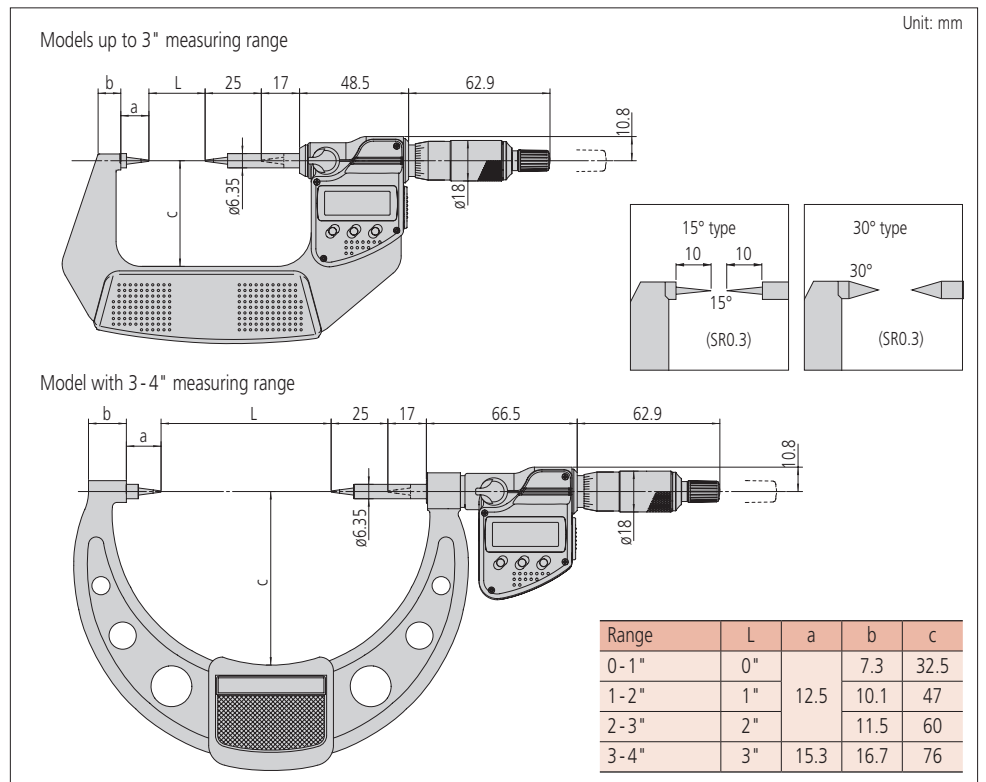
342-351-30

Specifications

Inch/Metric					
Code No.	Range	Resolution	Accuracy*	Point	Price
342-351-30	0-1" (0-25.4 mm)	.00005" (0.001 mm)	±.0001" (±2 μm)	15°	£367.00
342-352-30	1-2" (25.4-50.8 mm)				£411.00
342-353-30	2-3" (50.8-76.2 mm)				£440.00
342-354-30	3-4" (76.2-101.6 mm)		±.00015" (±3 μm)	30°	£589.00
342-361-30	0-1" (0-25.4 mm)		±.0001" (±2 μm)		£367.00
342-362-30	1-2" (25.4-50.8 mm)		£411.00		
342-363-30	2-3" (50.8-76.2 mm)		£440.00		
342-364-30	3-4" (76.2-101.6 mm)		±.00015" (±3 μm)	£589.00	

* Excluding quantizing error.

Dimensions



Micrometers

SERIES 112 – Point Micrometer

- Pointed spindle and anvil for measuring the web thickness of drills, small grooves, keyways, and other hard-to-reach features.
- The measuring points (carbide tipped) have, approximately, a 0.3 mm radius.
- Equipped with Ratchet Stop for constant measuring force.



112-225

Specifications

Metric

Code No.	Range	Graduation	Accuracy	Point	Price
112-153	0 - 25 mm	0.01 mm	±3 µm	15°	£120.00
112-154	25 - 50 mm				£148.00
112-155	50 - 75 mm				£207.00
112-156	75 - 100 mm				£253.00
112-201	0 - 25 mm		±3 µm	30°	£109.00
112-202	25 - 50 mm				£169.00
112-203	50 - 75 mm				£207.00
112-204	75 - 100 mm				£253.00

With carbide tip

112-165	0 - 25 mm	0.01 mm	±3 µm	15°	£209.00
112-166	25 - 50 mm				£238.00
112-167	50 - 75 mm				£253.00
112-168	75 - 100 mm				£334.00
112-213	0 - 25 mm		±3 µm	30°	£180.00
112-214	25 - 50 mm				£207.00
112-215	50 - 75 mm				£168.00
112-216	75 - 100 mm				£276.00

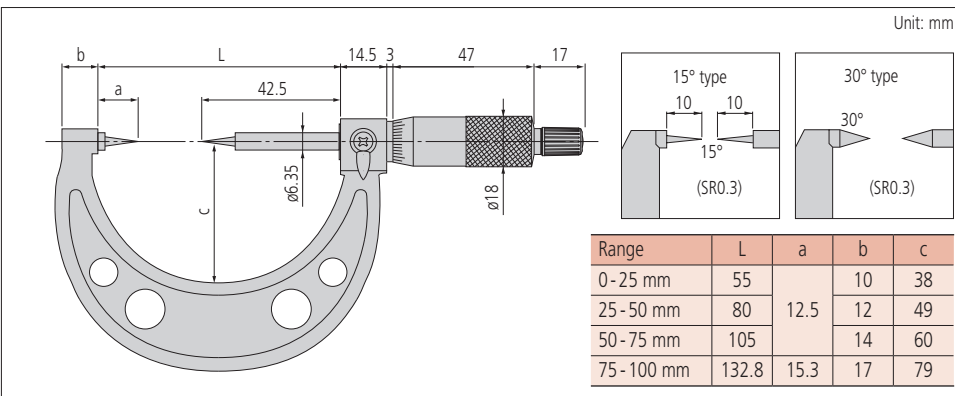
Inch

Code No.	Range	Graduation	Accuracy	Point	Price
112-177	0 - 1"	.001"	±.00015"	15°	£120.00
112-178	1 - 2"				£148.00
112-225	0 - 1"			30°	£109.00
112-226	1 - 2"				£169.00

With carbide tip

112-189	0 - 1"	.001"	±.00015"	15°	£225.00
112-190	1 - 2"				£238.00
112-191	2 - 3"				£288.00
112-237	0 - 1"			30°	£180.00
112-238	1 - 2"				£207.00

Dimensions

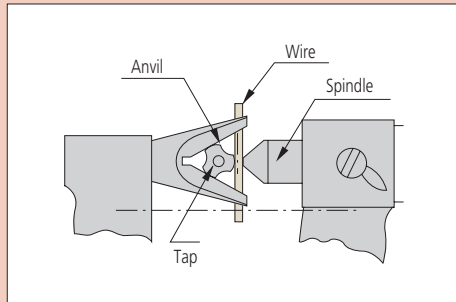


Technical Data

Battery: SR44 (1 pc), **938882**

Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



Pitch diameter measurement of tap by single-wire method.

SERIES 314 – Digimatic V-Anvil Micrometer

- Measures the outside diameter of cutting tools (such as taps, reamers, end mills) which have three flutes.
- Can measure pitch diameter of screw threads.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.



314-351-30

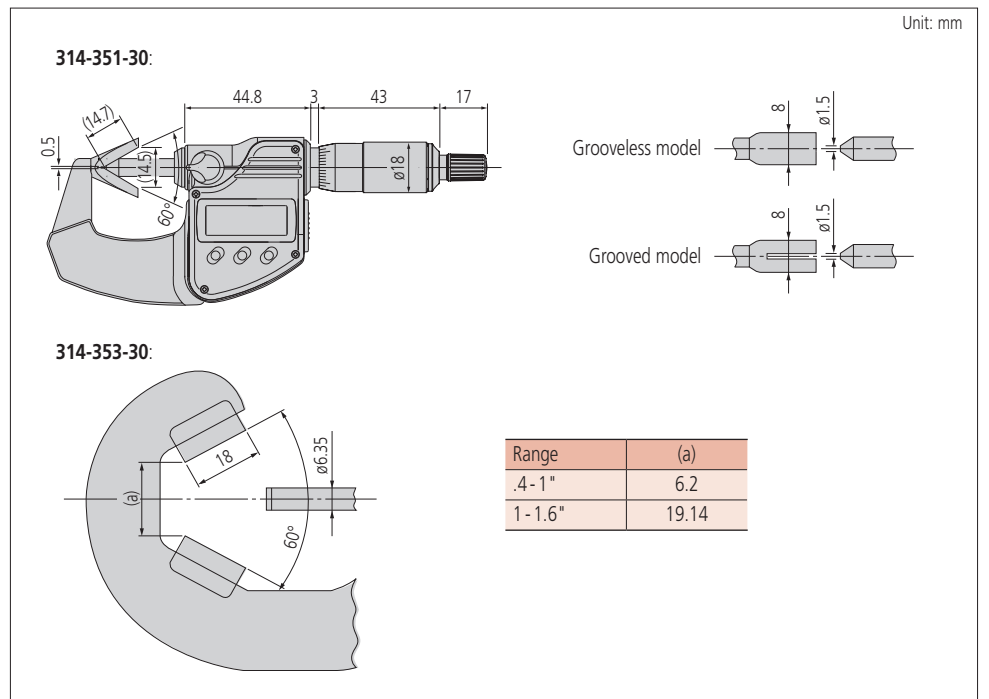
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Remarks	Anvil	Price
For 3-flute cutting tools						
314-351-30	.05 - .6" (1.27 - 15.24 mm)	.00005" (0.001 mm)	±.0002" (±4 μm)	Grooved	60°	£618.00
314-352-30	.4 - 1" (10.16 - 25.4 mm)					£688.00
314-353-30	1 - 1.6" (25.4 - 40.64 mm)		±.00025" (±5 μm)	—		£736.00
314-361-30	.05 - .6" (1.27 - 15.24 mm)		—	—		£618.00
314-362-30	.4 - 1" (10.16 - 25.4 mm)		±.0002" (±4 μm)	—		£688.00

* Excluding quantizing error.

Dimensions

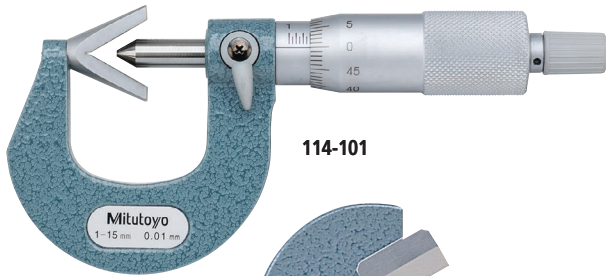


B

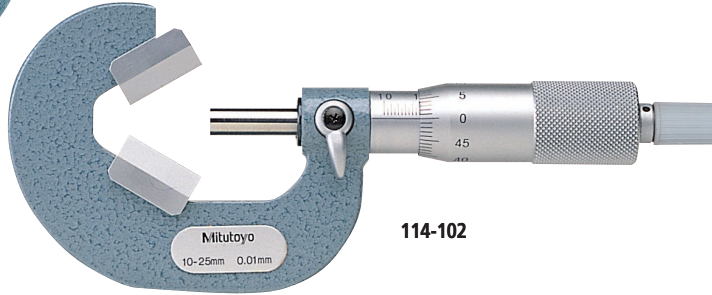
Micrometers

SERIES 114 – Three-Flute V-Anvil Micrometer

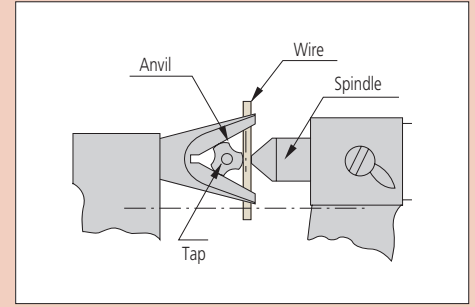
- Measures the outside diameter of cutting tools (such as taps, reamers, end mills) which have three flutes.
- Can measure pitch diameter of screw threads.
- Equipped with Ratchet Stop for constant measuring force.



114-101



114-102



Pitch diameter measurement of tap by single-wire method.

Specifications

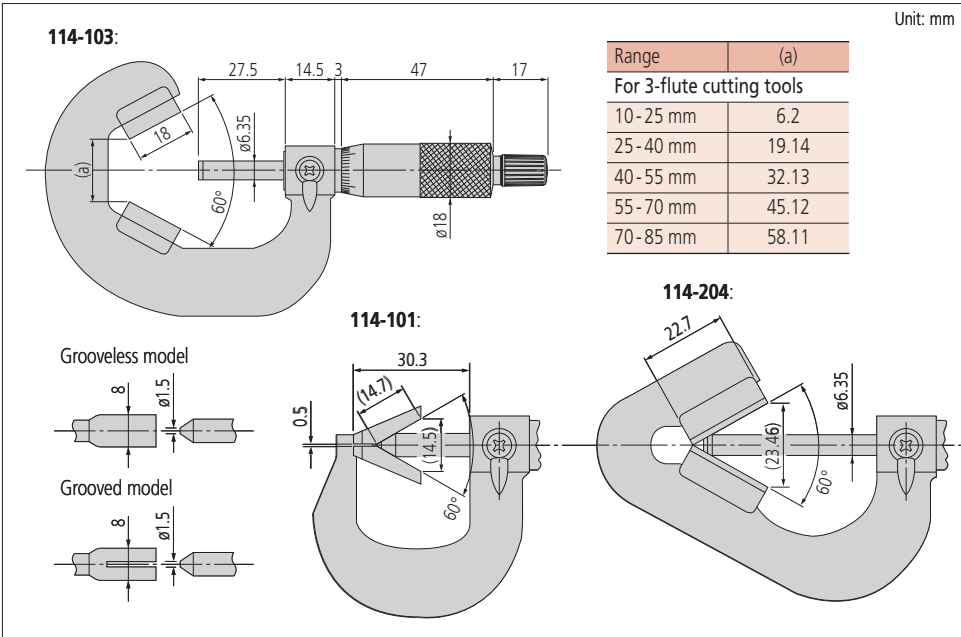
Metric

Code No.	Range	Graduation	Accuracy	Remarks	Anvil	Carbide tip	Price
114-204	2.3-25 mm	0.01 mm	±4 μm	—	60°	Anvil and spindle	£291.00
114-101	1-15 mm		±4 μm	Grooved		Spindle	£310.00
114-102	10-25 mm		—	—		Spindle	£318.00
114-103	25-40 mm		±5 μm	—		Spindle	£365.00
114-104	40-55 mm		±6 μm	—		Spindle	£410.00
114-105	55-70 mm		—	—		Spindle	£417.00
114-106	70-85 mm		±7 μm	—		Spindle	£482.00
114-161	1-15 mm		—	—		Spindle	£310.00
114-162	10-25 mm		±4 μm	—		Spindle	£360.00

Inch

Code No.	Range	Graduation	Accuracy	Remarks	Anvil	Carbide tip	Price
114-163	.05-6"	.0001"	±.0002"	—	60°	Spindle	£310.00
114-113	1-1.6"		±.00025"	—		Spindle	£365.00

Dimensions



SERIES 114 – Five-Flute V-Anvil Micrometer

- Measures the outside diameter of cutting tools (such as taps, reamers, end mills) which have five flutes.
- Can measure pitch diameter of screw threads.
- Equipped with Ratchet Stop for constant measuring force.



Specifications

Metric							
Code No.	Range	Graduation	Accuracy	Remarks	Anvil	Carbide tip	Price
114-137	2.3 - 25 mm	0.01 mm	±4 μm	—	108°	Anvil and spindle	£365.00
114-121	5 - 25 mm		±4 μm	w/groove		Spindle	£335.00
114-122	25 - 45 mm		±5 μm	—		Spindle	£432.00
114-123	45 - 65 mm		±6 μm	—		Spindle	£478.00
114-124	65 - 85 mm		±7 μm	—		Spindle	£597.00
114-165	5 - 25 mm		±4 μm	—		Spindle	£320.00
Inch							
Code No.	Range	Graduation	Accuracy	Remarks	Anvil	Carbide tip	Price
114-135	.09 - 1"	.0001"	±.0002"	—	108°	Spindle	£335.00

Micrometers

SERIES 422 – Digimatic Blade Micrometer

- The anvil and spindle are blade-shaped for measuring the groove diameter of shafts, keyways, and other hard-to-reach features.
- Equipped with Ratchet Stop for constant measuring force.
- Four types of blade shape are available (see diagrams below). Types C and D have carbide-tipped measuring faces.



422-330-30

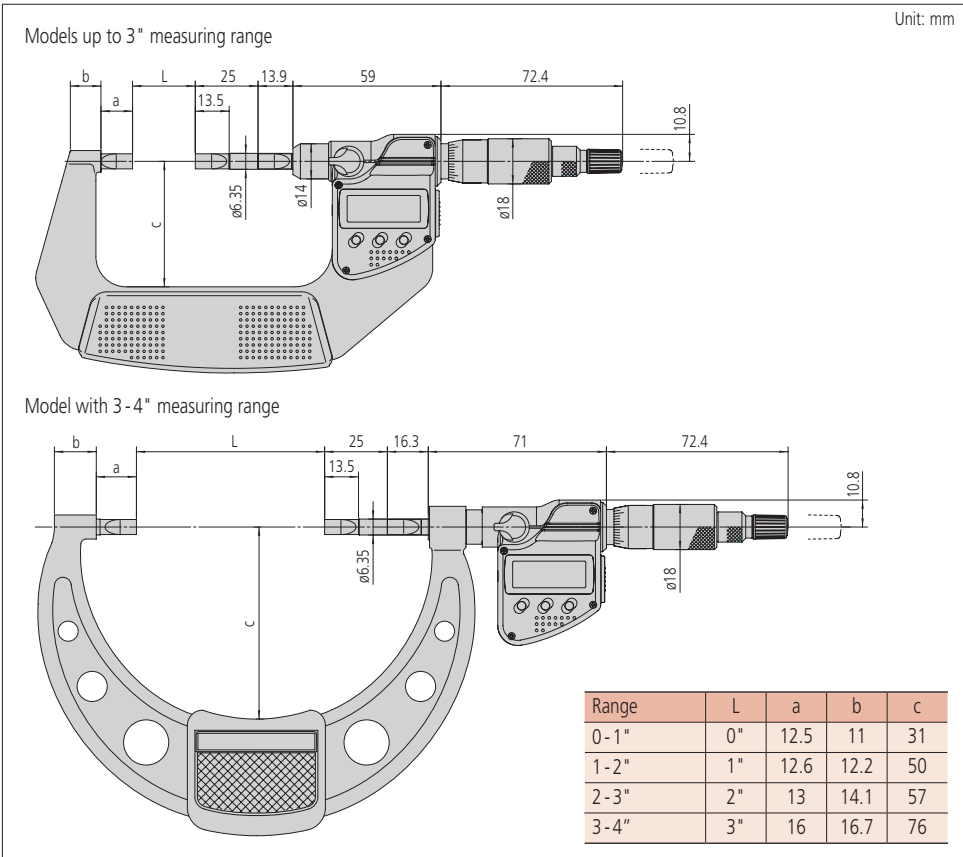
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Remarks	Price
422-330-30	0 - 1" (0 - 25.4 mm)	.00005" (0.001 mm)	±.00015" (±3 μm)	Type A	£679.00
422-331-30	1 - 2" (25.4 - 50.8 mm)				£725.00
422-332-30	2 - 3" (50.8 - 76.2 mm)				£759.00
422-333-30	3 - 4" (76.2 - 101.6 mm)		±.0002" (±4 μm)	£782.00	
422-360-30	0 - 1" (0 - 25.4 mm)		±.00015" (±3 μm)	Type B	£759.00
422-370-30				Type C	£787.00
422-371-30		Type D		£804.00	

* Excluding quantizing error.

Dimensions

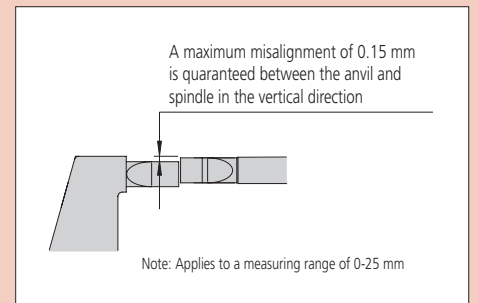
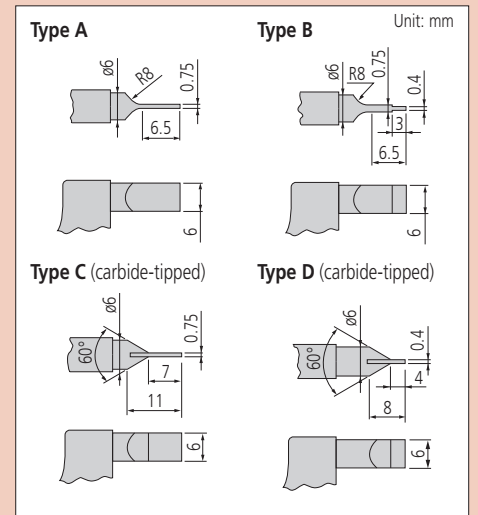


Technical Data

Parallelism: .00015" (3 μm) for models up to 3",
.0002" (4 μm) for models over 3"
Battery: SR44 (1 pc) 938882

Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



Technical Data

Parallelism: 3 μm / .00015" for models up to 75 mm / 3", (3+R/100) μm * for models over 75 mm, .0002" for 4" model

* R = max. range (mm).

Note: Fractions rounded up.



SERIES 122 – Blade Micrometer

- The anvil and spindle are blade-shaped for measuring the groove diameter of shafts, keyways, and other hard-to-reach features.
- Equipped with Ratchet Stop for constant measuring force.
- Four types of blade shape are available (see diagrams below). Types C and D have carbide-tipped measuring faces.



122-101

Specifications

Metric

Code No.	Range	Graduation	Accuracy	Remarks	Price	
122-101	0-25 mm	0.01 mm	$\pm 3 \mu\text{m}$	Type A	£183.00	
122-102	25-50 mm				£194.00	
122-103	50-75 mm				£226.00	
122-104	75-100 mm				£243.00	
122-105	100-125 mm				$\pm 4 \mu\text{m}$	£291.00
122-106	125-150 mm				£311.00	
122-107	150-175 mm		$\pm 5 \mu\text{m}$		£335.00	
122-108	175-200 mm		£363.00			
122-109	200-225 mm		£465.00			
122-110	225-250 mm		$\pm 6 \mu\text{m}$		£495.00	
122-115	250-275 mm		£583.00			
122-116	275-300 mm		£621.00			
122-111	0-25 mm	$\pm 3 \mu\text{m}$	Type B	£197.00		
122-112	25-50 mm			£201.00		

With carbide tip

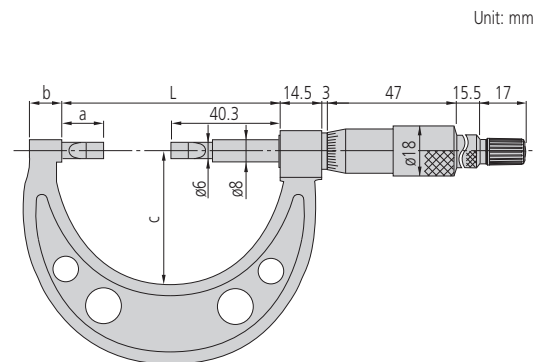
122-161	0-25 mm	0.01 mm	$\pm 3 \mu\text{m}$	Type C	£233.00
122-162	25-50 mm				£276.00
122-141	0-25 mm			Type D	£233.00
122-142	25-50 mm				£276.00

Inch

Code No.	Range	Graduation	Accuracy	Remarks	Price	
122-125	0-1"	.0001"	$\pm .00015"$	Type A	£183.00	
122-126	1-2"				£194.00	
122-127	2-3"				£226.00	
122-128	3-4"		$\pm .0002"$		£243.00	
122-135	0-1"		$\pm .00015"$		Type B	£197.00
122-151					Type D	£233.00

Dimensions

Range	L	a	b	c
0-25 mm	55.3	15	8	30
25-50 mm	80.3		12	49
50-75 mm	105.3		13	60
75-100 mm	132.8	17.5	17	79
100-125 mm	158.2	17.9	19	94
125-150 mm	183.6	18.3	20	106
150-175 mm	208.8	18.5	19	118
175-200 mm	234.2	18.9	18	130
200-225 mm	258	17.7		143
225-250 mm	284	18.7		156
250-275 mm	309		169	
275-300 mm	334		181	



Unit: mm

Micrometers

SERIES 147 – Can Seam Micrometers

- Measures the width, height and depth of can seams.



147-103

Specifications

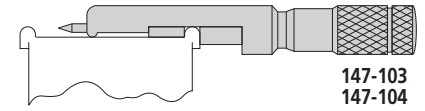
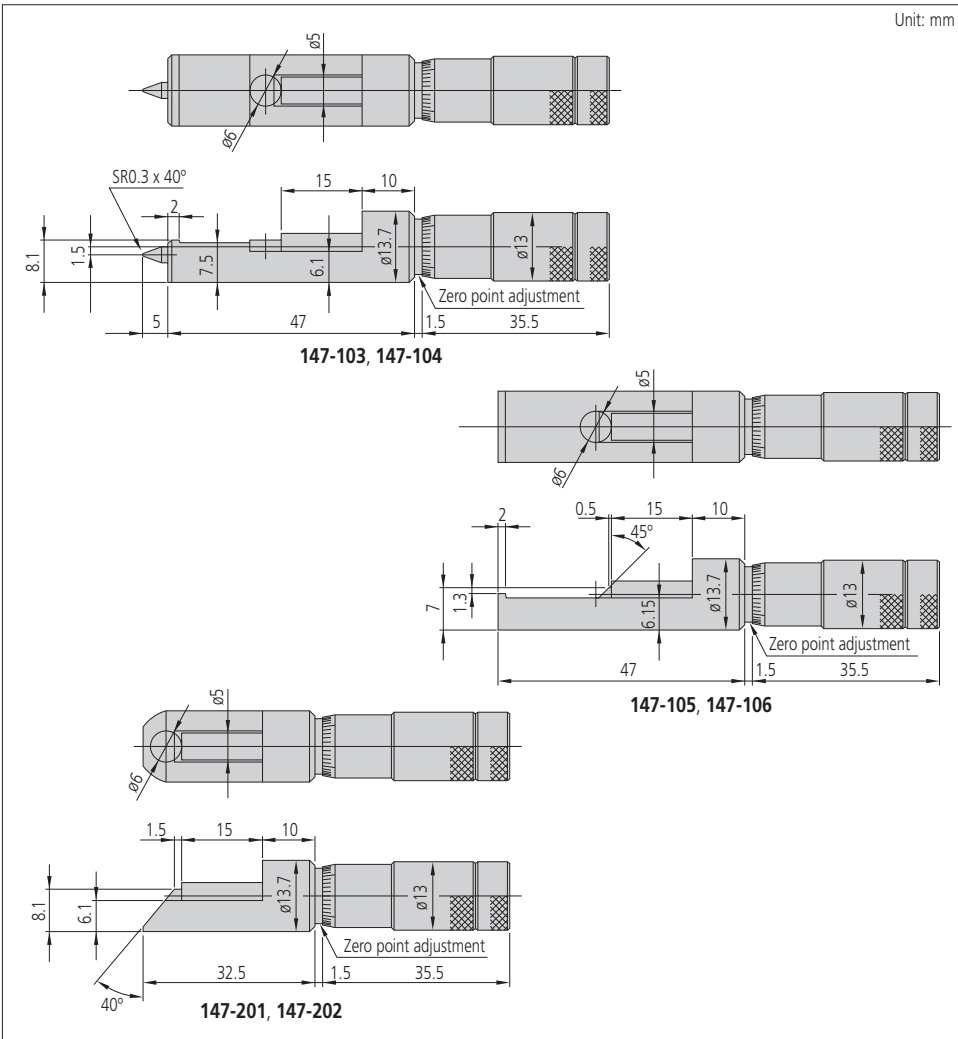
Metric

Code No.	Range	Graduation	Accuracy	Remarks	Price
147-103	0 - 13 mm	0.01 mm	±3 μm	For steel cans	£118.00
147-105				For aluminium cans	£122.00
147-202				For spray cans	£113.00

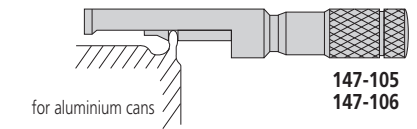
Inch

Code No.	Range	Graduation	Accuracy	Remarks	Price
147-104	0 - .5"	.001"	±.00015"	For steel cans	£118.00
147-106				For aluminium cans	£122.00
147-201				For spray cans	£113.00

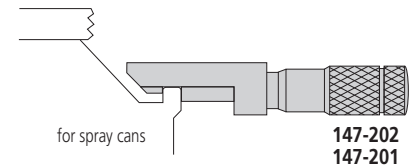
Dimensions



for steel cans
(for depth measurements up to 5 mm)



for aluminium cans

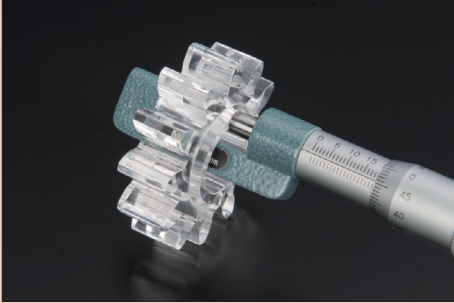


for spray cans

Technical Data

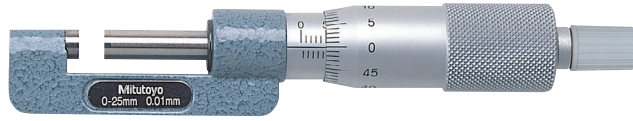
Flatness: $0.6 \mu\text{m} / .000024''$
 Parallelism: $(2+R/100) \mu\text{m}, [.00008+.00004(R/4)]''$

* R = max. range (mm/inch).
 Note: Fractions rounded up.



SERIES 147 – Hub Micrometer

- Measures hub thickness and shoulders inside a bore.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.



147-301

Specifications

Metric					Inch						
Code No.	Range	Graduation	Accuracy	Price	Code No.	Range	Graduation	Accuracy	Price		
147-301	0-25 mm	0.01 mm	$\pm 2 \mu\text{m}$	£161.00	147-351	0-1"	.001"	$\pm .0001''$	£161.00		
147-302	25-50 mm			£184.00	147-352	1-2"			£184.00		
147-303	50-75 mm			£219.00	147-353	2-3"			£219.00		
147-304	75-100 mm			$\pm 3 \mu\text{m}$	£253.00	147-354			3-4"	$\pm .00015''$	£253.00

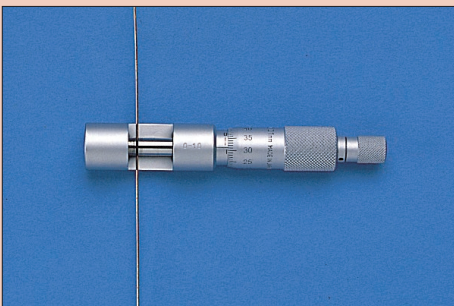
Dimensions

Unit: mm

Range	H	h1	h2	h3
0-25 mm	17.5	6	8.5	13.5
25-50 mm	20.5	6.5	11	14
50-75 mm				13
75-100 mm				

Technical Data

Flatness: $0.6 \mu\text{m} / .000024''$
 Parallelism: $1.3 \mu\text{m} / .00005''$



SERIES 147 – Wire Micrometer

- Designed for measuring wire thickness.
- Measurable wire diameter: 10 mm or less.
- Measuring faces: Carbide.
- Equipped with Ratchet Stop for constant measuring force.



147-401

Specifications

Metric					Inch				
Code No.	Range	Graduation	Accuracy	Price	Code No.	Range	Graduation	Accuracy	Price
147-401	0-10 mm	0.01 mm	$\pm 3 \mu\text{m}$	£165.00	147-402	0-4"	.0001"	$\pm .00015''$	£165.00

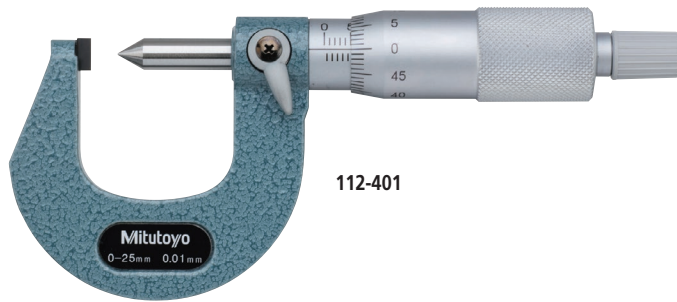
Dimensions

Unit: mm

Micrometers

SERIES 342, 112 – Crimp Height Micrometers

- Measures the height of crimp contacts.
- Equipped with Ratchet Stop for constant measuring force.
- 342 series: Digimatic type IP65 rated.



Technical Data

Battery: SR44 (1 pc), **938882**: 342 series

Optional Accessories (for 342 series only)

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



Specifications

Inch/Metric

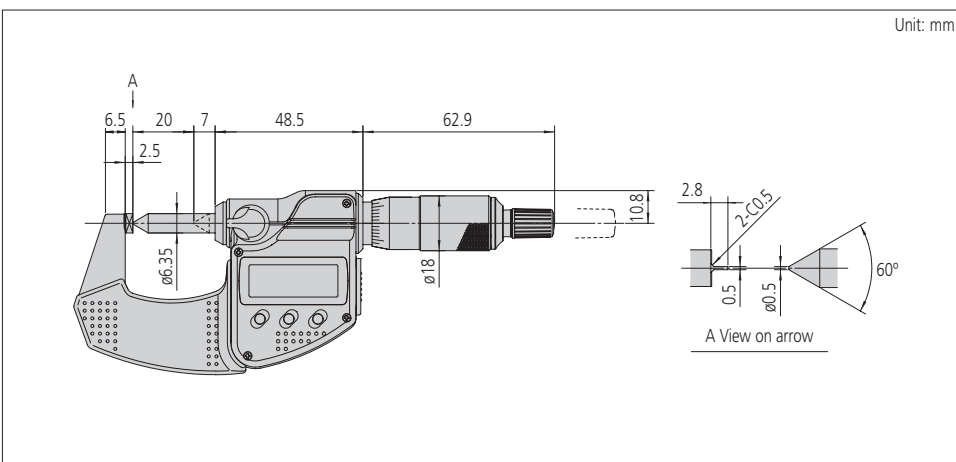
Code No.	Range	Resolution	Accuracy*	Price
342-371-30	0-.8" (0-20.32 mm)	0.001 mm (.00005")	±3 µm (±.00015")	£454.00

Metric

Code No.	Range	Graduation	Accuracy	Price
112-401	0-25 mm	0.01 mm	±3 µm	£168.00

* Excluding quantizing error.

Dimensions



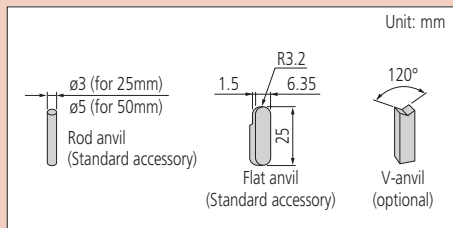
Technical Data

Flatness

Spindle face:	0.6 µm
Anvil face:	2 µm
Parallelism:	3 µm
Battery:	SR44 (1 pc), 938882 : 317 series

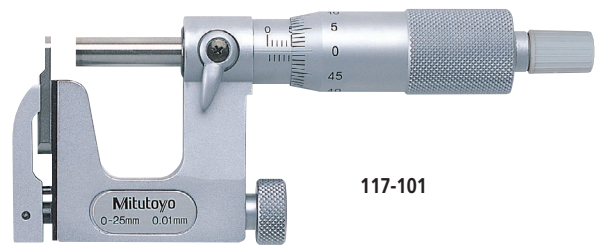
Optional Accessories

Code No.	Description	Price
201216	Flat anvil (standard accessory)	£16.50
201217	Rod anvil (standard accessory for 117-101)	£1.40
201379	Rod anvil (standard accessory for 117-102)	£1.50
201218	V-anvil	£11.00
950758	Base for 25 mm	£64.00
For 317 series only		
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00



SERIES 317, 117 – Uni-Mike Interchangeable Anvil Micrometers

- Measures tubing thickness, shoulder-edge distance, rivet head height, etc., with interchangeable anvils (flat anvil, rod anvil, V-anvil).
- IP65 water/dust protection (317 series).



Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Price
Digimatic				
317-351-30	0 - 1" (0-25.4 mm)	0.001 mm (.00005")	±4 µm (±.0002")	£364.00
317-352-30	1 - 2" (25.4 - 50.8 mm)			£493.00

Metric

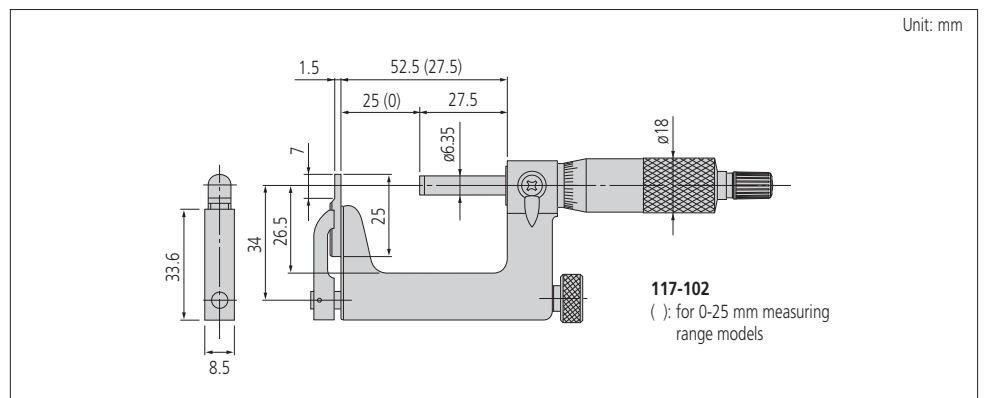
Code No.	Range	Graduation	Accuracy	Price
117-101	0 - 25 mm	0.01 mm	±4 µm	£140.00
117-102	25 - 50 mm			£178.00

Inch

Code No.	Range	Graduation	Accuracy	Price
117-107	0 - 1"	.0001"	±.0002"	£140.00
117-108	1 - 2"			£178.00

* Excluding quantizing error.

Dimensions

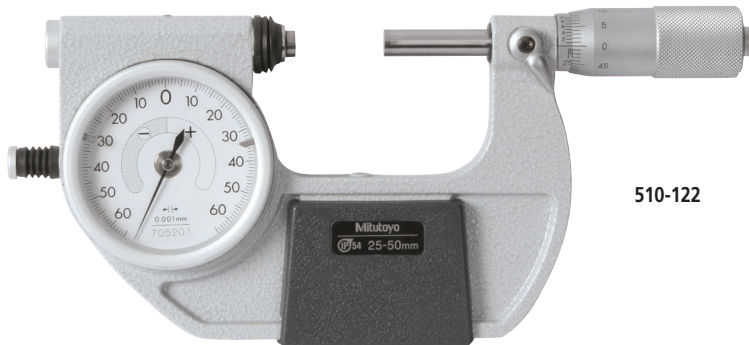


Micrometers

SERIES 510 – Indicating Micrometer

- Suited to the measurement of low-volume manufactured parts.
- Easy to use when operating one-handed due to retractable anvil.
- In the 25 mm measuring range, models are available that offer left or right positioning of the anvil-retraction button.
- Water resistant to protection level IP54.
- Greatly improved accuracy: indication error and graduation of 1 µm.
- Hard-coated crystal: enhanced oil and scratch resistance.
- Indicator scale is large and easy-to-read.
- Easily set zero position and adjustable limit markers for GO/±NG testing.
- Measuring faces: Carbide.

IP54



510-122

Specifications

Metric

Code No.	Range	Indicating range	Graduation	Dial graduation	Measuring force	Price
510-121	0 - 25 mm	±0.06 mm	0.001 mm	0.001 mm	5 - 10N	£603.00
510-122	25 - 50 mm					£677.00
510-123	50 - 75 mm					£784.00
510-124	75 - 100 mm					£866.00

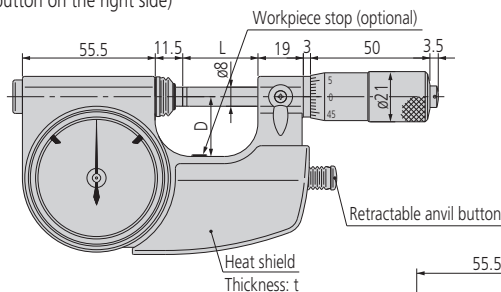
Inch

Code No.	Range	Indicating range	Graduation	Dial graduation	Measuring force	Price
510-131	0 - 1"	±.0023"	.0001"	.00005"	5 - 10N	£603.00
510-132	1 - 2"					£677.00
510-133	2 - 3"					£784.00
510-134	3 - 4"					£866.00

Dimensions

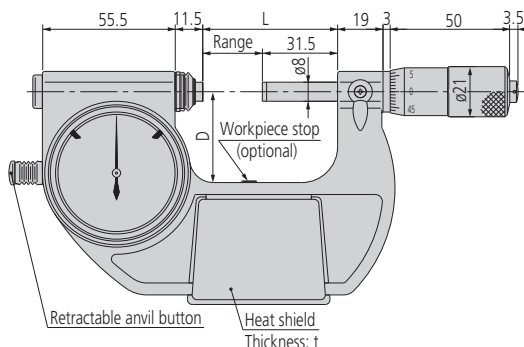
Up to 25 mm measuring range (anvil-retraction button on the right side)

Unit: mm



Range	D	L	t
0 - 25 mm	25	31.5	16.4
25 - 50 mm	38	56.5	16
50 - 75 mm	50	81.5	16
75 - 100 mm	63	106.5	16

Over 25 mm measuring range (anvil-retraction button on the left side)



Technical Data

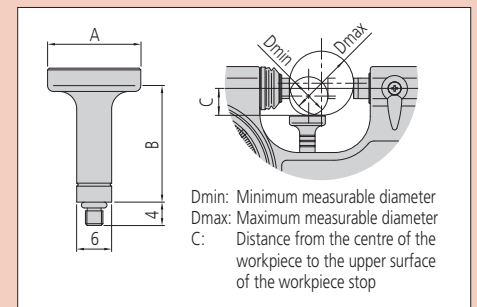
Flatness:	0.3 µm / .000012"
Parallelism:	0.6 µm / .000024" for models up to 50 mm / 2", 1 µm / .00004" for models over 50 mm / 2"
Accuracy:	±2 µm
Spindle feed error:	3 µm / .00015"
Repeatability:	0.4 µm / .00002"
Dial indication accuracy:	1 µm / .00005"



Workpiece Stop (optional)

Enables a more stable measurement. Three types are available to suit workpieces of different sizes.

Code No.	Description	A	B	Price
04AZA124	Workpiece stop A	ø16	23	£11.40
04AZA125	Workpiece stop B	ø14	20.5	£11.40
04AZA126	Workpiece stop C	ø14	15	£11.40



Code No. 510-121, 510-141, 510-131, 510-151

Description	Dmin	Dmax	C
Workpiece stop A	N/A	N/A	N/A
Workpiece stop B	4 mm	16 mm	5.0 mm
Workpiece stop C	15 mm	25 mm	10.5 mm

Code No. 510-122 and 510-132

Description	Dmin	Dmax	C
Workpiece stop A	25 mm	37 mm	15.5 mm
Workpiece stop B	30 mm	42 mm	18.0 mm
Workpiece stop C	41 mm	50 mm	23.5 mm

Code No. 510-123 and 510-133

Description	Dmin	Dmax	C
Workpiece stop A	50 mm	61 mm	27.5 mm
Workpiece stop B	54 mm	66 mm	30.0 mm
Workpiece stop C	65 mm	75 mm	35.5 mm

Code No. 510-124 and 510-134

Description	Dmin	Dmax	C
Workpiece stop A	75 mm	87 mm	40.5 mm
Workpiece stop B	80 mm	92 mm	43.0 mm
Workpiece stop C	91 mm	100 mm	48.2 mm

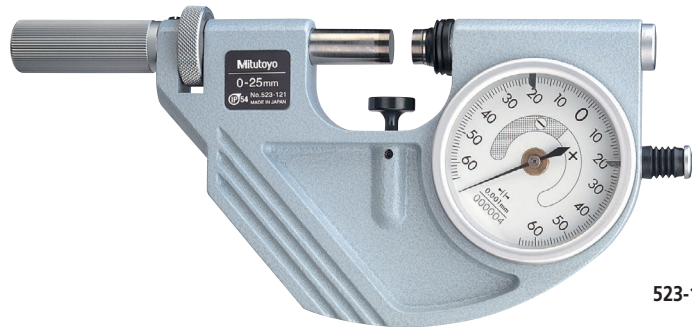
Technical Data

Indicator	
Indicating range:	$\pm 0.06 \text{ mm} / \pm .0023''$
Repeatability of indication:	$0.4 \text{ } \mu\text{m} / .00002''$
Dial indication accuracy:	$1 \text{ } \mu\text{m} / .00005''$
Flatness:	$0.3 \text{ } \mu\text{m} / .000012''$
Parallelism:	$0.6 \text{ } \mu\text{m} / .000024''$ for models up to 50 mm/2", $1 \text{ } \mu\text{m} / .00004''$ for models over 50 mm/2" measuring range



SERIES 523 – Dial Snap Meter

- Suited to the measurement of mass produced parts.
- Designed for measurement using a stand to enable a more stable measurement.
- Greatly improved accuracy: indication error and graduation of $1 \text{ } \mu\text{m}$.
- Water resistant to protection level IP54.
- Indicator scale is large and easy-to-read.
- Hard-coated crystal: enhanced oil and scratch resistance.
- Easily settable adjustable limit markers for GO/ \pm NG testing.
- Equipped with an elevating workpiece stop as standard.
- Measuring faces: Carbide.



523-121

Specifications

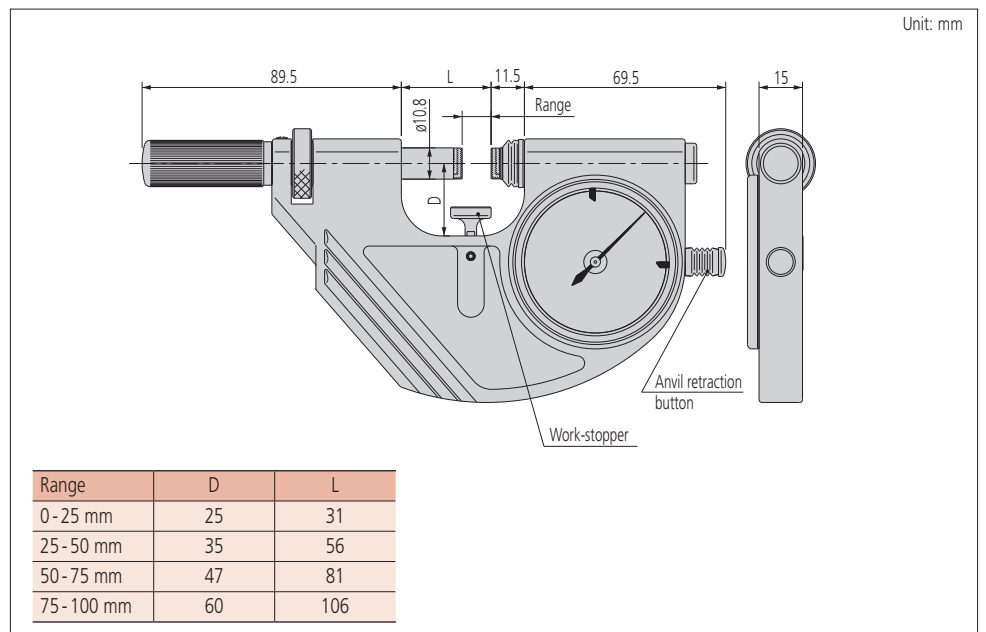
Metric

Code No.	Range	Dial graduation	Measuring force	Price
523-121	0 - 25 mm	0.001 mm	5 - 10N	£486.00
523-122	25 - 50 mm			£549.00
523-123	50 - 75 mm			£600.00
523-124	75 - 100 mm			£664.00

Inch

Code No.	Range	Dial graduation	Measuring force	Price
523-131	0 - 1"	.00005"	5 - 10N	£486.00
523-132	1 - 2"			£549.00
523-133	2 - 3"			£600.00
523-134	3 - 4"			£664.00

Dimensions



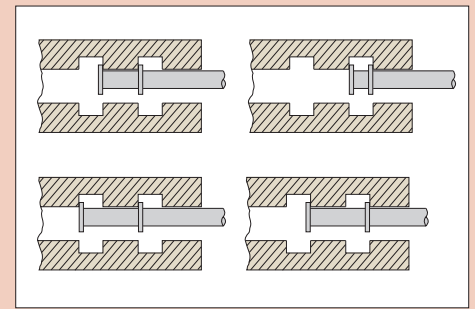
Micrometers

SERIES 146 – Groove Micrometer

- Flanged spindle and anvil for measuring width and location of grooves inside bores and tubes.
- Two-directional ratchet stop.

Technical Data

Parallelism: 10 μm / .0004"



146-121



146-122

Specifications

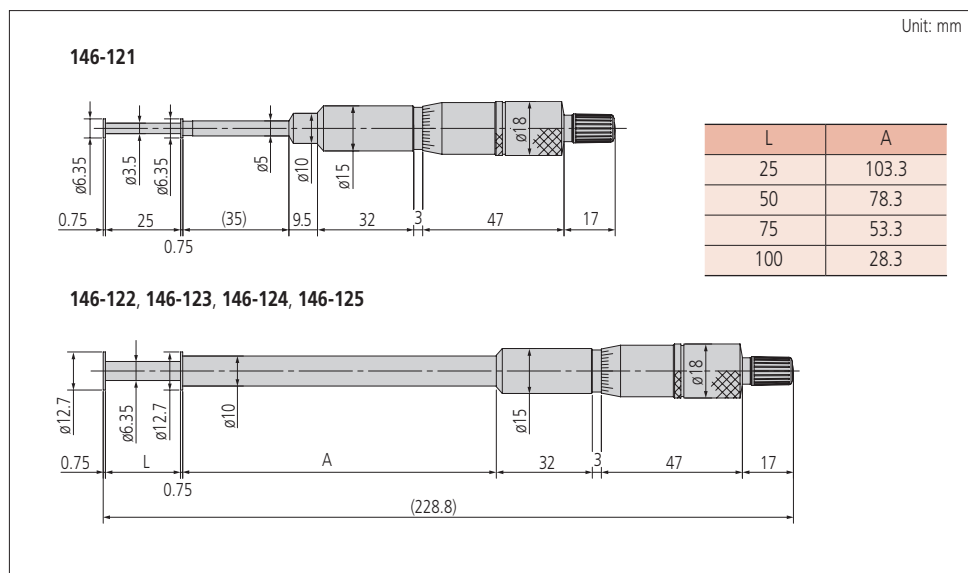
Metric

Code No.	Range outside	Range inside	Graduation	Accuracy	Flange	Price
146-121	0 - 25 mm	1.6 - 26.5 mm	0.01 mm	$\pm 10 \mu\text{m}$	$\phi 6.35$ mm	£198.00
146-122					$\phi 12.7$ mm	£233.00
146-123	25 - 50 mm	26.5 - 51.5 mm			$\phi 12.7$ mm	£243.00
146-124	50 - 75 mm	51.5 - 76.5 mm			£255.00	
146-125	75 - 100 mm	76.5 - 101.5 mm			£275.00	

Inch

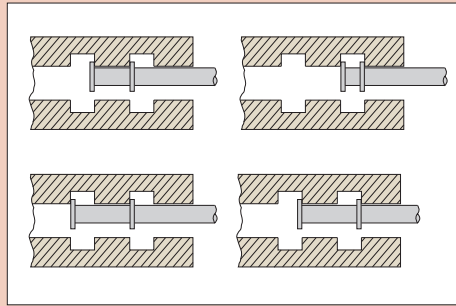
Code No.	Range outside	Range inside	Graduation	Accuracy	Flange	Price
146-131	0 - 1"	.055 - 1.05"	.0001"	$\pm .0004$ "	$\phi .25$ "	£198.00
146-132					$\phi .5$ "	£233.00
146-133	1 - 2"	1.05 - 2.05"			$\phi .5$ "	£243.00
146-134	2 - 3"	2.05 - 3.05"			£255.00	
146-135	3 - 4"	3.05 - 4.05"			£299.00	

Dimensions



Technical Data

Parallelism: 10 μm / .0004"



SERIES 146 – Non-Rotating Spindle Groove Micrometer

- Flanged spindle and anvil for measuring width and location of grooves inside bores and tubes.
- Two-directional ratchet stop.



146-221



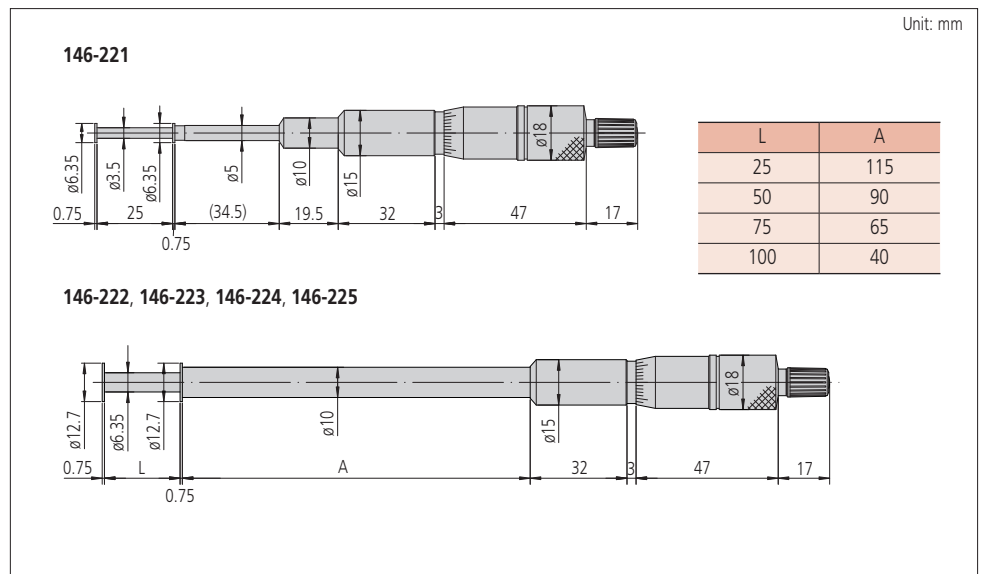
146-222

Specifications

Metric						
Code No.	Range outside	Range inside	Graduation	Accuracy	Flange	Price
146-221	0 - 25 mm	1.6 - 26.5 mm	0.01 mm	±10 μm	ø6.35 mm	£337.00
146-222						£381.00
146-223	25 - 50 mm	26.5 - 51.5 mm			ø12.7 mm	£414.00
146-224	50 - 75 mm	51.5 - 76.5 mm				£426.00
146-225	75 - 100 mm	76.5 - 101.5 mm				£437.00

Inch						
Code No.	Range outside	Range inside	Graduation	Accuracy	Flange	Price
146-231	0 - 1"	.055 - 1.05"	.0001"	±.0004"	ø.25"	£337.00
146-232						£381.00
146-233	1 - 2"	1.05 - 2.05"			ø.5"	£414.00
146-234	2 - 3"	2.05 - 3.05"				£426.00
146-235	3 - 4"	3.05 - 4.05"				£437.00

Dimensions



Micrometers

SERIES 700 – Quick-Mini

- Lightweight and palm-sized.
- Highly suitable for quick dimensional inspection of small, thin and delicate objects.
- Functions: origin setting and zero-setting.

Application examples:

- Measurement of small objects: pearls, jewels, shims for engine tappets and screws.
- Measurement of thin objects: printing paper, polyethylene bags, sheet materials, foods including noodles, lenses for glasses, media substrates, foils, thin plates and medical products including filter cloths.
- Measurement of fine lines and bars: fishing lines, dental reamers, pasta, drills for PCBs and hard wiring.

Technical Data

Battery: SR44 (1 pc) 938882



700-118-20



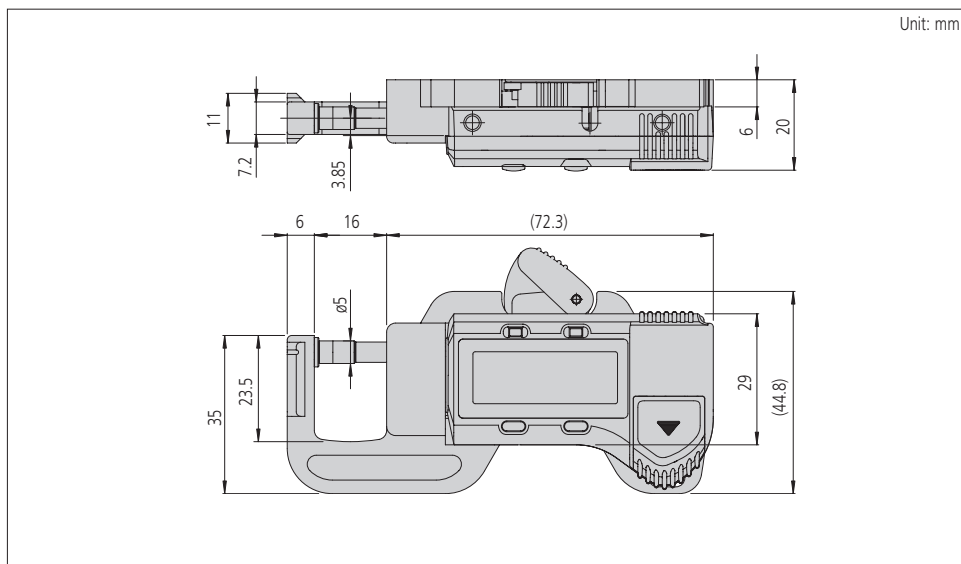
Specifications

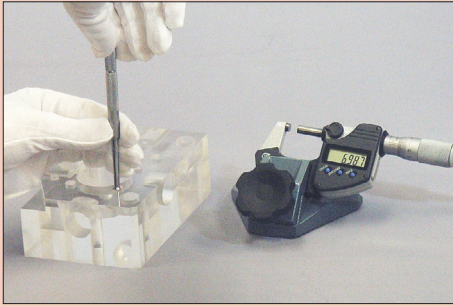
Inch/Metric

Code No.	Range	Resolution	Accuracy*	Price
700-118-20	0 - .5" (0 - 12.7 mm)	0.01 mm (.0005")	±0.02 mm (±.001")	£75.00

* Excluding quantizing error.

Dimensions





SERIES 154 – Small Hole Gauge Set

- Extra long for gauging deep and shallow holes, slots, and similar workpiece features.
- Two sprung leaves are fully expanded and locked inside a feature so that its size can be measured with an outside micrometer after extraction.



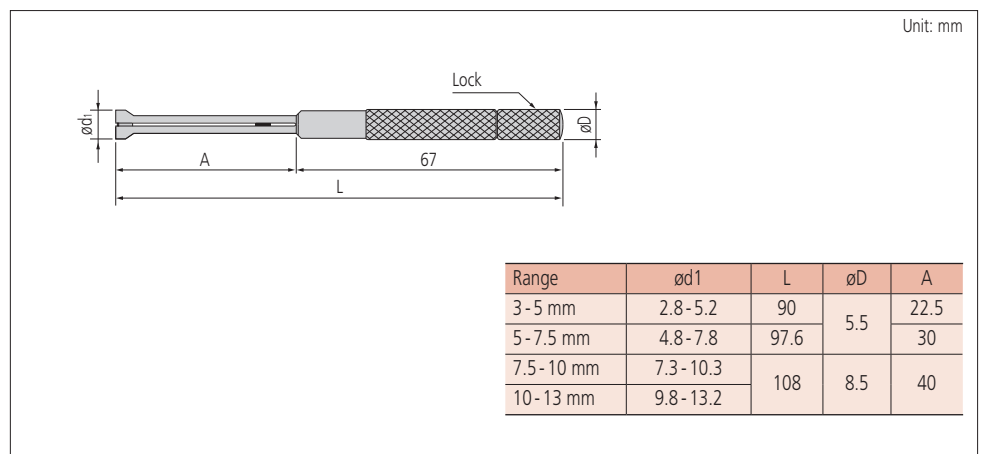
154-902

Specifications

Metric		
Code No.	Measuring range	Price
4-gauge set		
154-902	3 - 13 mm	£65.10
Gauges included		
154-101	3 - 5 mm	
154-102	5 - 7.5 mm	
154-103	7.5 - 10 mm	
154-104	10 - 13 mm	

Inch		
Code No.	Measuring range	Price
4-gauge set		
154-901	.125 - .5"	£65.10
Gauges included		
154-105	.125 - .2"	
154-106	.2 - .3"	
154-107	.3 - .4"	
154-108	.4 - .5"	

Dimensions



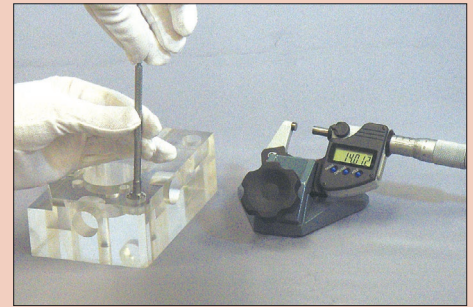
Micrometers

SERIES 155 – Telescoping Gauge Set

- A spring-loaded plunger expands within a bore (or groove) and is locked in place, allowing measurement of diameter (or width) with an outside micrometer after extraction.



155-905



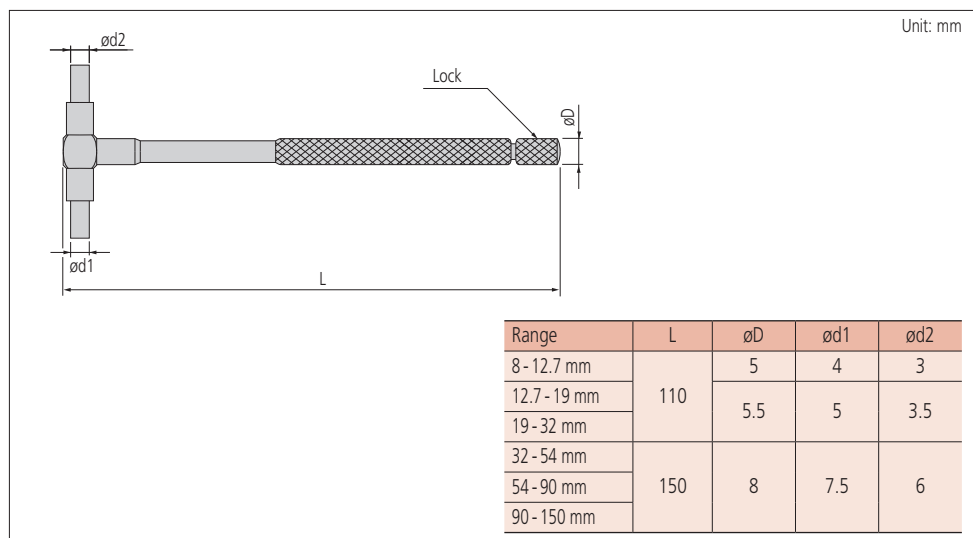
B

Specifications

Metric		
Code No.	Range	Price
6-gauge set		
155-905	8 - 150 mm	£157.00
Gauges included		
155-127	8 - 12.7 mm	£21.70
155-128	12.7 - 19 mm	£26.50
155-129	19 - 32 mm	£26.50
155-130	32 - 54 mm	£31.90
155-131	54 - 90 mm	£31.90
155-132	90 - 150 mm	£31.90

Inch		
Code No.	Range	Price
6-gauge set		
155-903	.313 - 6"	£157.00
Gauges included		
155-121	.313 - .5"	£21.70
155-122	.5 - .75"	£26.50
155-123	.75 - 1.25"	£26.50
155-124	1.25 - 2.125"	£31.90
155-125	2.125 - 3.5"	£31.90
155-126	3.5 - 6"	£31.90

Dimensions



Optional Accessories

SERIES 157 – Optical Parallels

- Designed to inspect parallelism and flatness of micrometer measuring faces.
- Each set consists of 4 sizes to enable testing parallelism at various angular positions of the micrometer spindle.



157-903

Specifications

Metric							
Code No.	Range of micrometer to be checked	Sizes of parallels included in set	Diameter	Flatness	Parallelism	Remarks	Price
157-903	0 - 25 mm	12.00, 12.12, 12.25, 12.37 mm	30 mm	0.1 μm	0.2 μm	For 25 mm	£372.00
157-904	25 - 50 mm	25.00, 25.12, 25.25, 13.37 mm				For 50 mm	£631.00

Inch							
Code No.	Range of micrometer to be checked	Sizes of parallels included in set	Diameter	Flatness	Parallelism	Remarks	Price
157-901	0 - 1"	.5000", .5062", .5125", .5187"	30 mm	0.1 μm	0.2 μm	For 1"	£372.00
157-902	1 - 2"	1.0000", 1.0062", 1.0125", 1.0187"				For 2"	£631.00

SERIES 158 – Optical Flats

- Used for inspecting the flatness of very flat and reflective surfaces. A typical application is testing the measuring faces of gauge blocks for signs of wear or damage.



158-118

Specifications

Metric				
Code No.	Thickness	Diameter	Flatness grade	Price
158-117	12 mm	45 mm	0.2 μm	£266.00
158-118			0.1 μm	£287.00
158-119	15 mm	60 mm	0.2 μm	£339.00
158-120			0.1 μm	£380.00

Inch				
Code No.	Thickness	Diameter	Flatness grade	Price
158-122	.5"	1.8"	.000004"	£287.00
158-124	.6"	2.4"		£380.00

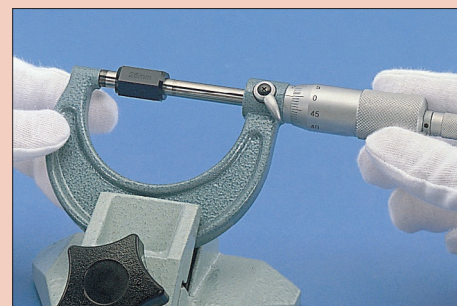
Optional Accessories

SERIES 167 – Setting Standards for Outside Micrometers

- Used for accurately setting outside micrometers at the start or end of the measuring range.

Technical Data

Flatness: 0.3 μm
 Parallelism: 2 μm



167-108



167-145

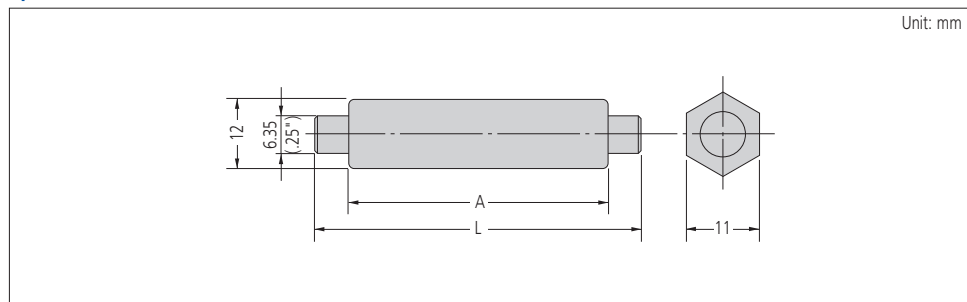


167-103



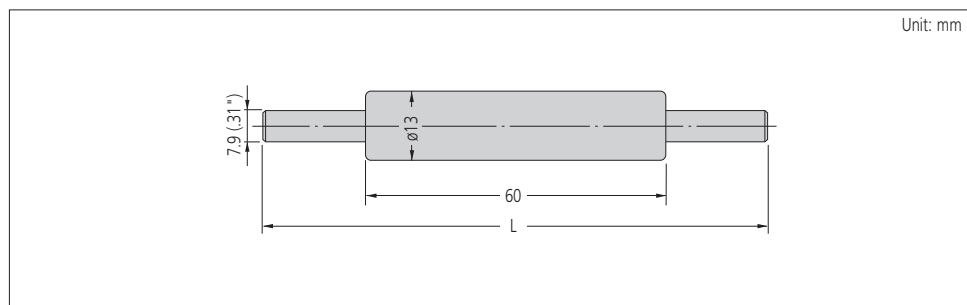
167-101

Specifications and Dimensions



Metric				
Code No.	Length (L)	Tolerance	A	Price
167-101	25 mm	$\pm 1.5 \mu\text{m}$	18	£12.50
167-102	50 mm	$\pm 2.0 \mu\text{m}$	40	£12.70
167-103	75 mm	$\pm 2.5 \mu\text{m}$		£15.30

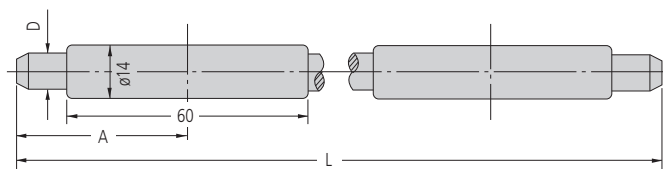
Inch				
Code No.	Length (L)	Tolerance	A	Price
167-141	1"	$\pm 0.0005"$	18	£12.50
167-142	2"	$\pm 0.001"$	40	£12.70
167-143	3"			£15.30



Metric			
Code No.	Length (L)	Tolerance	Price
167-104	100 mm	$\pm 3 \mu\text{m}$	£17.20
167-105	125 mm	$\pm 3.5 \mu\text{m}$	£19.30
167-106	150 mm	$\pm 4 \mu\text{m}$	£20.50
167-107	175 mm	$\pm 4.5 \mu\text{m}$	£23.00

Inch			
Code No.	Length (L)	Tolerance	Price
167-144	4"	$\pm 0.001"$	£17.20
167-145	5"	$\pm 0.0015"$	£19.30
167-146	6"		£20.50
167-147	7"		£23.00

Unit: mm



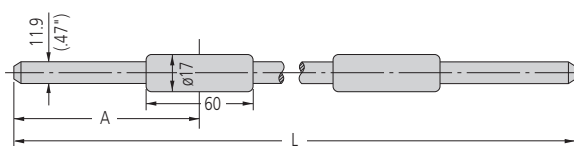
Metric

Code No.	Length (L)	Tolerance	A	Price
167-108	200 mm	±5.0 µm	47	£26.40
167-109	225 mm	±5.5 µm	47	£28.60
167-110	250 mm	±6.0 µm	52	£31.60
167-111	275 mm	±6.5 µm	57	£34.90
167-112	300 mm	±7 µm	64	£38.20
167-113	325 mm	±7.5 µm	69	£41.90
167-114	350 mm	±8 µm	74	£45.90
167-115	375 mm	±8.5 µm	80	£51.00
167-116	400 mm	±9 µm	85	£57.00
167-117	425 mm	±9.5 µm	90	£63.00
167-118	450 mm	±10 µm	95	£68.70
167-119	475 mm	±10.5 µm	101	£75.10

Inch

Code No.	Length (L)	Tolerance	A	Price
167-148	8"	±.00015"	47	£26.40
167-149	9"	±.0002"	47	£28.60
167-150	10"	±.0002"	52	£31.60
167-151	11"	±.0002"	57	£34.90
167-152	12"	±.00025"	64	£38.20
167-153	13"	±.00025"	69	£41.90
167-154	14"	±.00025"	74	£45.90
167-155	15"	±.00025"	80	£51.00
167-156	16"	±.00025"	85	£57.00
167-157	17"	±.00025"	90	£63.00
167-158	18"	±.00025"	95	£68.70
167-159	19"	±.0003"	101	£75.10

Unit: mm



Metric

Code No.	Length (L)	Tolerance	A	Price
167-120	500 mm	±11 µm	106	£80.90
167-121	525 mm	±11.5 µm	112	£87.00
167-122	550 mm	±12.0 µm	117	£93.70
167-123	575 mm	±12.5 µm	122	£99.40
167-124	600 mm	±13 µm	128	£106.00
167-125	625 mm	±13.5 µm	133	£112.00
167-126	650 mm	±14 µm	138	£119.00
167-127	675 mm	±14.5 µm	142	£126.00
167-128	700 mm	±15 µm	147	£134.00
167-129	725 mm	±15.5 µm	153	£142.00
167-130	750 mm	±16 µm	158	£151.00
167-131	775 mm	±16.5 µm	164	£159.00
167-132	800 mm	±17 µm	170	£168.00
167-133	825 mm	±17.5 µm	175	£178.00
167-134	850 mm	±18 µm	180	£189.00
167-135	875 mm	±18.5 µm	185	£197.00
167-136	900 mm	±19 µm	191	£207.00
167-137	925 mm	±19.5 µm	196	£219.00
167-138	950 mm	±20 µm	201	£228.00
167-139	975 mm	±20.5 µm	207	£237.00
167-140	1000 mm	±21 µm	211	£305.00

Available up to 2000 mm.

Inch

Code No.	Length (L)	Tolerance	A	Price
167-160	20"	±.0003"	106	£80.90
167-161	21"	±.0003"	112	£87.00
167-162	22"	±.0003"	117	£93.70
167-163	23"	±.0003"	122	£99.40
167-164	24"	±.0003"	128	£106.00
167-165	25"	±.00035"	133	£112.00
167-166	26"	±.00035"	138	£119.00
167-167	27"	±.00035"	142	£126.00
167-168	28"	±.00035"	147	£134.00
167-169	29"	±.00035"	153	£142.00
167-170	30"	±.00035"	158	£151.00
167-171	31"	±.00035"	164	£159.00
167-172	32"	±.00035"	170	£168.00
167-173	33"	±.00035"	175	£178.00
167-174	34"	±.00035"	180	£189.00
167-175	35"	±.00035"	185	£197.00
167-176	36"	±.00035"	191	£207.00
167-177	37"	±.0004"	196	£219.00
167-178	38"	±.0004"	201	£228.00
167-179	39"	±.0004"	207	£237.00
167-180	40"	±.0004"	211	£305.00

Available up to 79".

Optional Accessories

SERIES 167 – Setting Standards for Screw Thread Micrometers

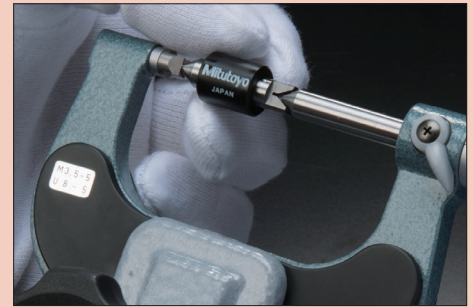
- Used for accurately setting screw thread micrometers at the start or end of the measuring range.



167-264



167-262



Specifications

Metric			
Code No.	Length	Accuracy	Price
Metric (unified) $\theta = 60^\circ$			
167-261	25 mm	$\pm 4 \mu\text{m}$	£34.50
167-262	50 mm	$\pm 5 \mu\text{m}$	£36.80
167-263	75 mm	$\pm 6 \mu\text{m}$	£42.60
167-264	100 mm	$\pm 7 \mu\text{m}$	£47.40
167-265	125 mm	$\pm 8 \mu\text{m}$	£55.10
167-266	150 mm	$\pm 9 \mu\text{m}$	£57.70
167-267	175 mm	$\pm 10 \mu\text{m}$	£58.90
167-268	200 mm	$\pm 11 \mu\text{m}$	£74.80
167-269	225 mm	$\pm 12 \mu\text{m}$	£78.20
167-270	250 mm	$\pm 13 \mu\text{m}$	£78.20
167-271	275 mm	$\pm 14 \mu\text{m}$	£81.70
Whitworth $\theta = 55^\circ$			
167-272	25 mm	$\pm 4 \mu\text{m}$	£34.50
167-273	50 mm	$\pm 5 \mu\text{m}$	£36.80
167-274	75 mm	$\pm 6 \mu\text{m}$	£42.60
167-275	100 mm	$\pm 7 \mu\text{m}$	£47.40
167-276	125 mm	$\pm 8 \mu\text{m}$	£55.10
167-277	150 mm	$\pm 9 \mu\text{m}$	£57.70
167-278	175 mm	$\pm 10 \mu\text{m}$	£58.90
167-279	200 mm	$\pm 11 \mu\text{m}$	£74.80
167-280	225 mm	$\pm 12 \mu\text{m}$	£78.20
167-281	250 mm	$\pm 13 \mu\text{m}$	£78.20
167-282	275 mm	$\pm 14 \mu\text{m}$	£81.70

Inch			
Code No.	Length	Accuracy	Price
Metric (unified) $\theta = 60^\circ$			
167-294	1"	$\pm 0.00015"$	£34.50
167-295	2"	$\pm 0.0002"$	£36.80
167-296	3"	$\pm 0.00025"$	£42.60
167-297	4"	$\pm 0.0003"$	£47.40
167-298	5"	$\pm 0.00035"$	£55.10
167-299	6"	$\pm 0.0004"$	£64.40
Whitworth $\theta = 55^\circ$			
167-283	1"	$\pm 0.00015"$	£34.50
167-284	2"	$\pm 0.0002"$	£36.80
167-285	3"	$\pm 0.00025"$	£42.60
167-286	4"	$\pm 0.0003"$	£47.40
167-287	5"	$\pm 0.00035"$	£55.10
167-288	6"	$\pm 0.0004"$	£64.40

SERIES 167 – Setting Standards for V-Anvil Micrometers

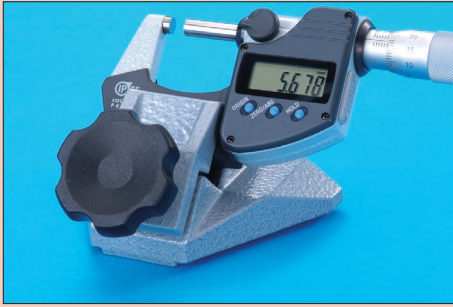
- Finely finished cylindrical standards of size designed for accurate setting of V-anvil micrometers.



Specifications

Metric				
Code No.	Diameter	Accuracy	Type	Price
167-327	5 mm	$\pm 2 \mu\text{m}$	Plug	£34.50
167-328	10 mm	$\pm 2 \mu\text{m}$	Plug	£39.10
167-329	25 mm	$\pm 2 \mu\text{m}$	Plug	£46.00
167-330	40 mm	$\pm 3 \mu\text{m}$	Ring	£101.20
167-331	55 mm	$\pm 3 \mu\text{m}$	Ring	£138.00
167-332	70 mm	$\pm 3 \mu\text{m}$	Ring	£174.80
167-333	85 mm	$\pm 3 \mu\text{m}$	Ring	£207.00

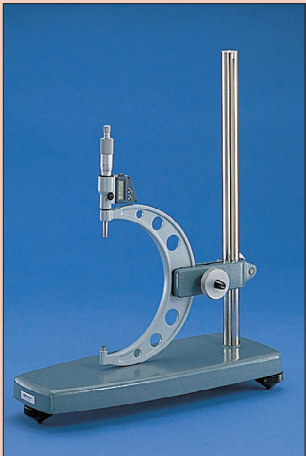
Inch				
Code No.	Diameter	Accuracy	Type	Price
167-337	.2"	$\pm 0.0001"$	Plug	£34.50
167-338	.4"	$\pm 0.0001"$	Plug	£39.10
167-339	1"	$\pm 0.0001"$	Plug	£58.70
167-340	1.6"	$\pm 0.00015"$	Ring	£101.20
167-341	2.2"	$\pm 0.00015"$	Ring	£138.00
167-342	2.8"	$\pm 0.00015"$	Ring	£174.80
167-343	3.4"	$\pm 0.00015"$	Ring	£207.00



156-105-10



156-101-10



156-102

SERIES 156 – Micrometer Stands

- Designed to allow benchtop use of hand micrometers or other gauges which have frames suitable for gripping by the clamp.



156-105-10



156-101-10



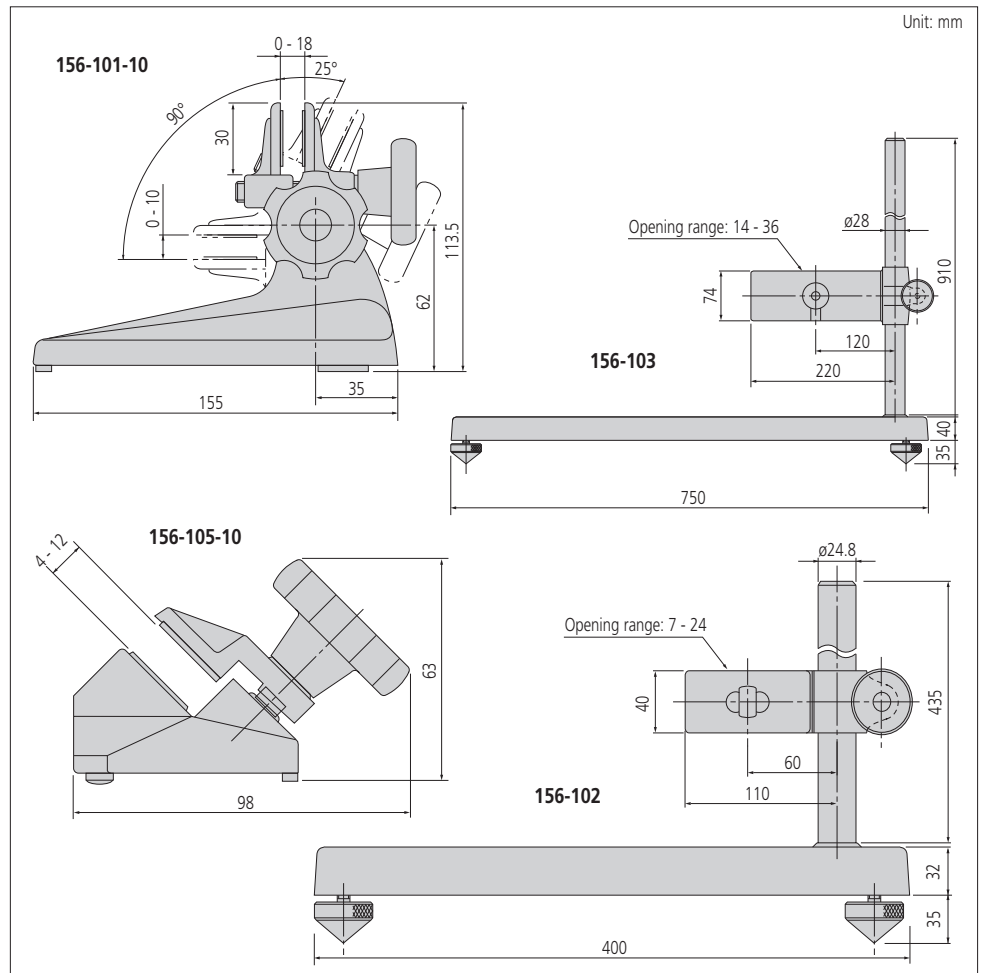
156-102

Specifications

Code No.	Micrometer ranges	Remarks	Price
156-101-10	Up to 100 mm (4")*	Adjustable angle type	£38.20
156-105-10	0 - 25 mm (0 - 1"), 25 - 50 mm (1 - 2")	Fixed angle type	£30.10
156-102	125 - 300 mm (5 - 12")	Vertical type	£318.00
156-103	300 - 1000 mm (12 - 40")		£740.00

* Items that cannot be mounted on these stands

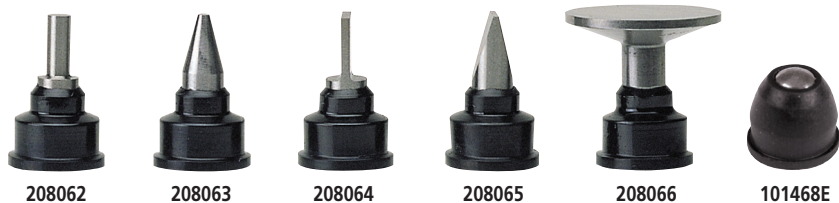
Dimensions



Optional Accessories

Spindle Attachment Tips

- Simple interchangeable tips attached to standard micrometer spindles enable measurement of contours otherwise unmeasurable (for 6.35 mm spindles only).
- Measuring range changes when a spindle attachment tip is mounted: the maximum measuring range is 10 mm or less (accuracy is not guaranteed).



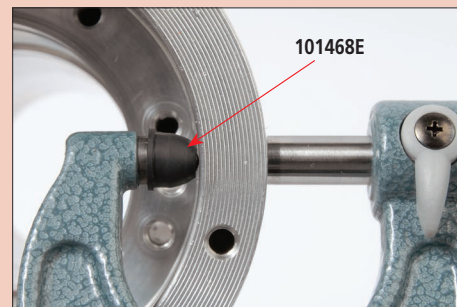
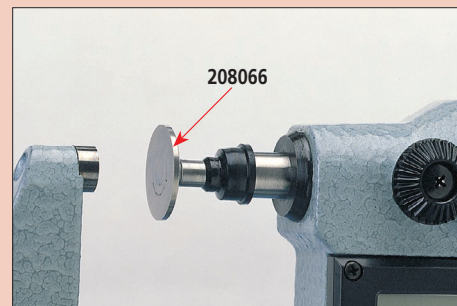
Specifications

Code No.	Tip type	Dimensions	Price
208062	Spline		£25.10
208063	Comparator		£25.10
208064	Blade		£25.10
208065	Knife edge		£25.10
208066	Disc		£29.00
101468M	Metric ball (5 mm)	—	£9.90
101468E	Inch ball (.2")		

Technical Data

Tip length*: 10 mm ±5 µm

* Excluding ball attachments



Micrometer Oil

- Special lubricant for micrometers.

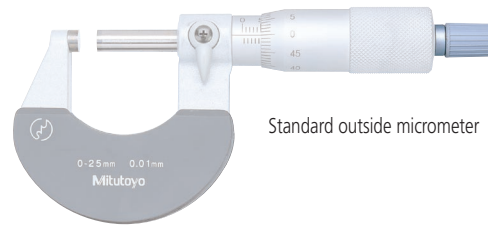


Specifications

Code No.	Item	Remarks	Price
207000	Micrometer oil	Quantity 30 ml	£17.40

Colour-Coded Ratchet and Speeder Covers

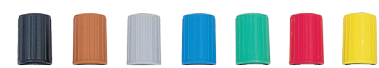
- Ratchet and speeder covers in a choice of seven colours for use in instrument identification control schemes: red, blue, yellow, green, brown, black and grey.



Ratchet



Speeder



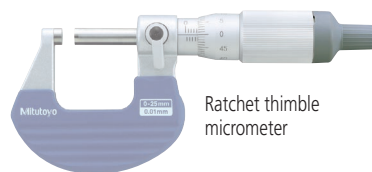
Ratchet Cover Specifications

Code No.	Colour	Material	Price
Analogue type: 0-300 mm			
04GZA239	Grey	Plastic	£4.60
985056	Black		£6.30
985061	Red		£6.30
985081	Blue		£6.30
985071	Yellow		£6.30
985076	Green		£6.30
985066	Brown		£6.30
950700	Grey	Steel	£4.90
Analogue type: 300-1000 mm			
04GZA243	Grey	Plastic	£5.60
Digimatic type: 0-300 mm			
04GZA241*	Grey	Plastic	£5.60

*Cannot be used for non-digital micrometers.

Speeder Cover Specifications

Code No.	Colour	Material	Price
04GAA260	Grey	Plastic	£1.00
301708	Black		£1.00
301709	Red		£1.00
301713	Blue		£1.00
301711	Yellow		£1.00
301712	Green		£1.00
301710	Brown		£1.00



Speeder



Speeder Cover Specifications

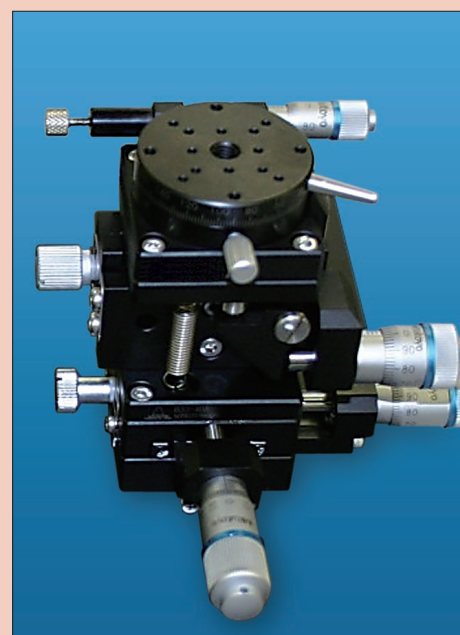
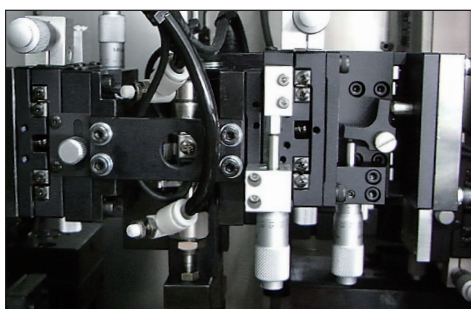
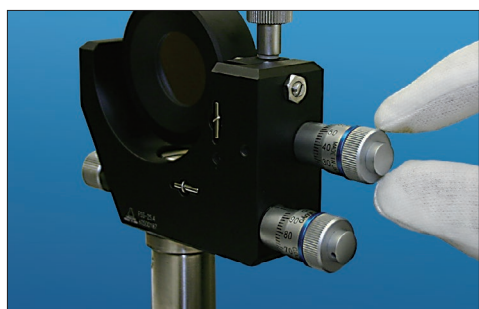
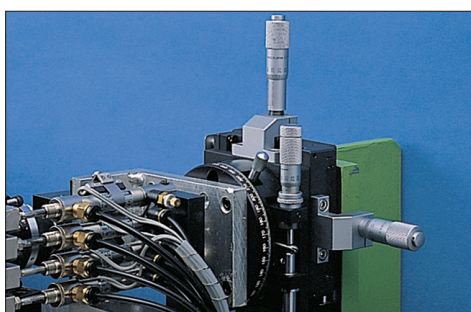
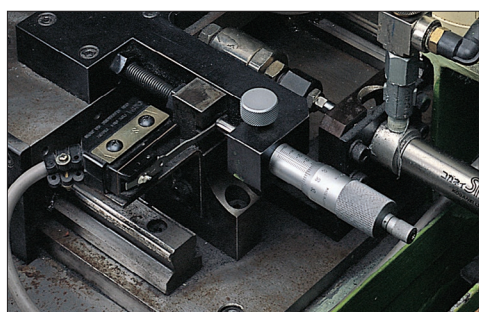
Code No.	Colour	Material	Price
04GAA899	Black	Plastic	£1.70
04GAA900	Red		£1.70
04GAA901	Yellow		£1.70
04GAA902	Green		£1.70
04GAA903	Blue		£1.70
04AAB208	Grey		£1.30

Micrometer Heads

SELECTION GUIDE

Mounted on measuring instruments and precision instruments, micrometer heads are used for various purposes including measurement, feeding and positioning. Recent developments in technology have seen the micrometer head widely utilized in precise feeding devices and cross-travel stages on laser instruments and manipulators, in addition to the usual duties on measurement jigs. In parallel with the application expansion, the customer's needs have increased. To meet customer demands, Mitutoyo provides standard micrometer heads with different measuring ranges, stem type and body size. Furthermore, high-performance types of Digimatic Micrometer Head, 0.1 mm spindle-pitch models (standard 0.5 mm), etc., are now available for the new applications. Mitutoyo also provides customization services for special applications. Micrometer heads with customized spindle tips and precision leadscrews manufactured to customer specification can be offered even in one-off quantities.

Measuring range	Main feature of head		Series	Page
0 - 2.5 mm	High-function	Fine spindle feed of 0.25 mm/rev	110	B-76
	Standard	Locking-screw type	148	B-81
0 - 6.5 mm	Standard	Small type	148	B-77
		Short body	148	B-78
		High-function	Fine spindle feed of 0.25 mm/rev	110
0 - 13 mm	Standard	Short body	148	B-78
		Small standard type	148	B-79
		Small standard type with zero-adjustable thimble	148	B-80
0 - 15 mm	High-function	Non-rotating spindle type	153	B-87
	Standard	Small standard type with carbide-tipped spindle	149	B-82
0 - 25 mm	Digimatic	Standard data output type	350	B-75
	High-function	Non-rotating spindle type	153	B-87
		Large thimble type for fine feed	152	B-85
		XY-stage type	152	B-86
		Fine graduation and high accuracy	153	B-88
	Standard	Medium-sized standard type	150	B-83
Medium-sized standard type with 8 mm diameter spindle		151	B-84	
0 - 50 mm	Digimatic	Rotatable-display data output type	164	B-74
		Large thimble type for fine feed	152	B-85
		Non-rotating spindle, 2X faster feed and large thimble	197	B-89
		Medium-sized standard type with 8 mm diameter spindle	151	B-84
60 - 75 mm	Micro Jack	High load bearing	7	B-90



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.

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.

Data output:

Models equipped with this function have an output port for transferring measurement data to a Statistical Process Control (SPC) system.

Error alarm:

In the unlikely event of a display overflow or calculation error, an error message is displayed and measurement stops. Measurement cannot continue until the error is corrected. Also, if the battery voltage drops below a certain point, the battery indicator will turn on before measurement becomes impossible, warning the user that the battery needs to be replaced.

Optional Accessories

Code No.	Description	Price
959149	SPC data cable with pushbutton (1 m)	£34.60
959150	SPC data cable with pushbutton (2 m)	£39.40
06ADV380C	USB Input Tool Direct USB-ITN-C (2 m)	£105.00
02AZD790C	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140C	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£123.00

SERIES 164 – Digimatic Rotatable Display Micrometer Head

- The display is rotatable to enable easy reading from practically any direction. This feature is especially useful in XY-table applications.
- The Digimatic output port enables inclusion in a statistical process control or networked measurement system.
- Non-rotating spindle.



164-164

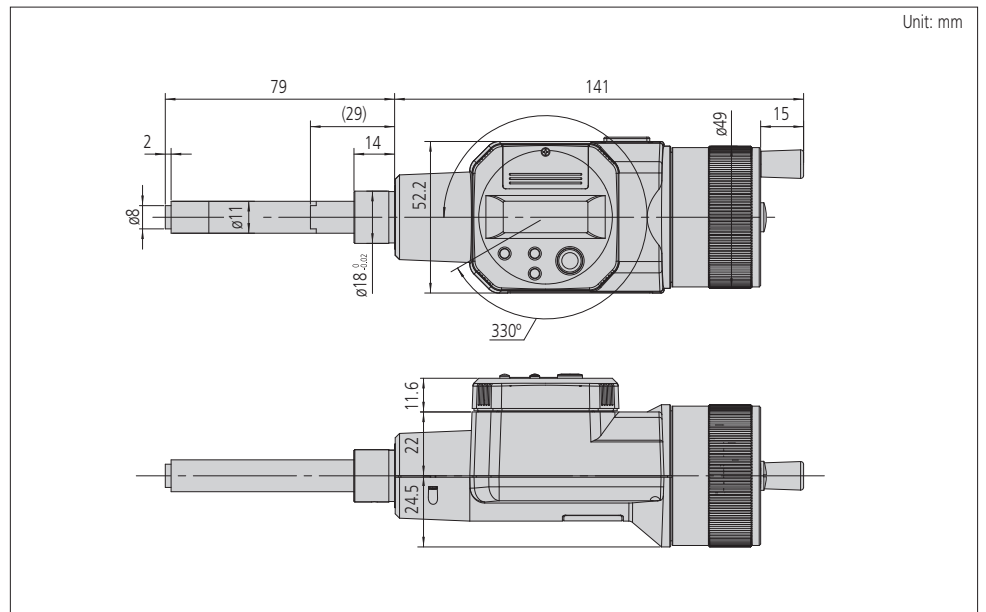
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Price
164-164	0 - 50 mm (0 - 2")	0.001 mm (.00005")	±3 μm (±.00015")	£727.00

* Excluding quantizing error.

Dimensions



Unit: mm

Micrometer Heads

SERIES 350 – Digimatic Micrometer Head

- The Digimatic output port enables inclusion in a statistical process control or networked measurement system.



350-351-30



350-361-10

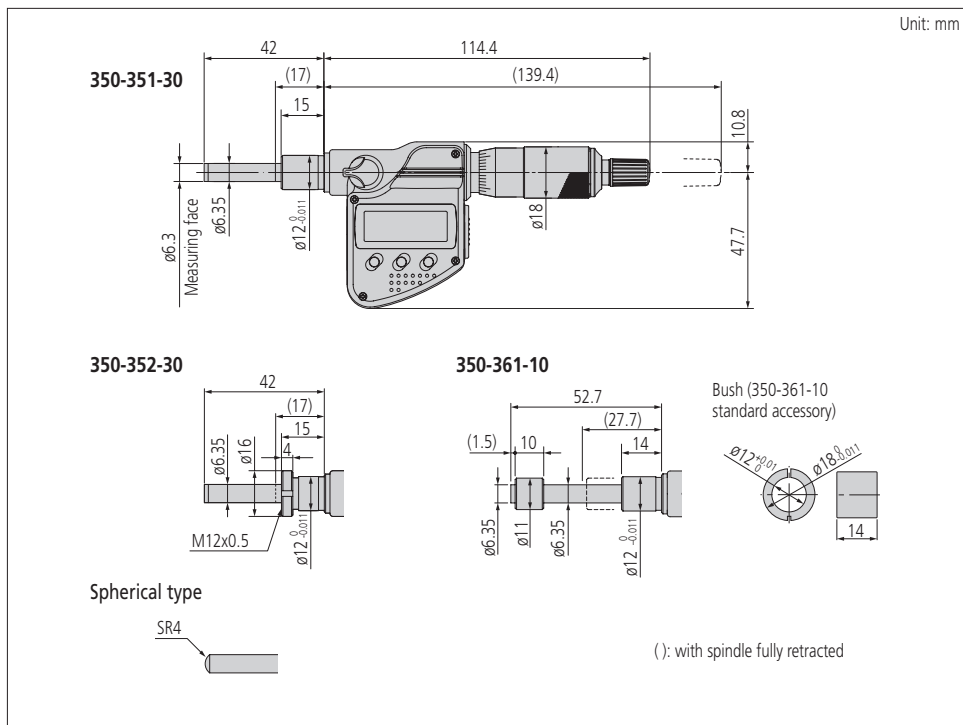
Specifications

Inch/Metric

Code No.	Range	Resolution	Accuracy*	Stem type	Spindle end	IP65	Price
350-351-30	0 - 25 mm (0 - 1")	0.001 mm (.00005")	±2 μm (±.0001")	Plain	Flat (carbide tip)	—	£253.00
350-352-30				Locknut	Flat (carbide tip)	—	£299.00
350-353-10				Plain	Spherical (SR4)	—	£334.00
350-354-10				Locknut	Spherical (SR4)	—	£357.00
350-361-10				Plain	Flat with non-rotating device	✓	£350.00

* Excluding quantizing error.

Dimensions



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.

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.

Data output:
Models equipped with this function have an output port for transferring measurement data to a Statistical Process Control (SPC) system.

Error alarm:
In the unlikely event of a display overflow or calculation error, an error message is displayed and measurement stops. Measurement cannot continue until the error is corrected. Also, if the battery voltage drops below a certain point, the battery indicator will turn on before measurement becomes impossible, warning the user that the battery needs to be replaced.

Optional Accessories

Code No.	Description	Price
05CZA662	SPC data cable with pushbutton (1 m)	£67.30
05CZA663	SPC data cable with pushbutton (2 m)	£81.00
06ADV380B	USB Input Tool Direct USB-ITN-B (2 m)	£122.00
02AZD790B	SPC data cable for U-WAVE-T (160 mm)	£60.10
02AZE140B	SPC data cable for U-WAVE-T and footswitch (160/500 mm)	£137.00

SERIES 110 – Differential Screw Micrometer Head

- The differential movement of spindle threads and nuts allows ultra-fine feed.
- Especially useful in precision translation type applications such as found in electronics component manufacture, optical alignment, etc.



110-102



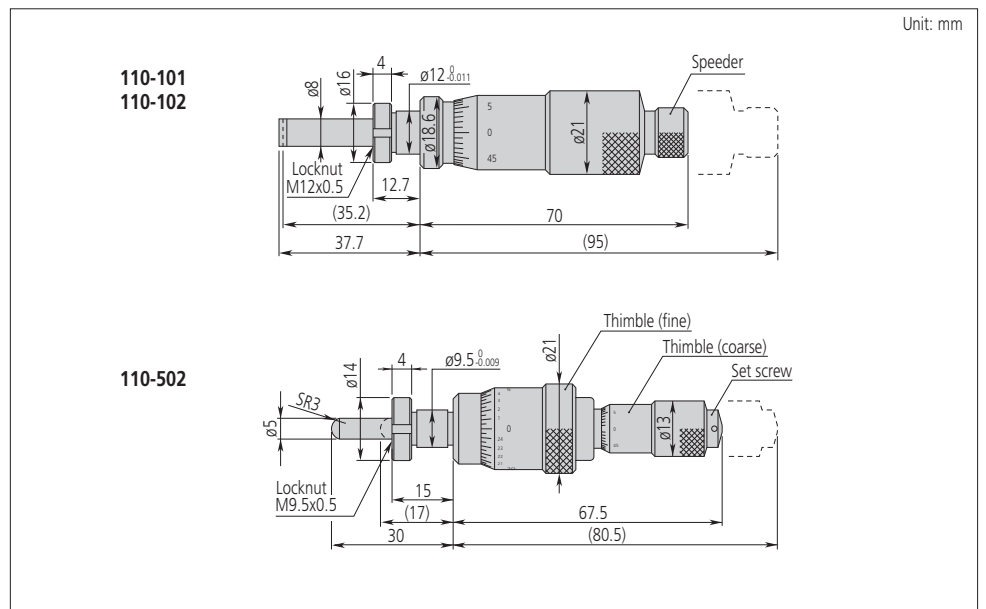
110-502

Specifications

Metric								
Code No.	Range	Graduation	Accuracy*	Stem	Stem type	Spindle end	Graduation features	Price
110-101	0-2.5 mm	0.001 mm	±5 µm /	ø12 mm	Locknut	Flat (carbide tip)	Standard	£252.00
110-102		0.0001 mm	±1.5 µm				Fine	£279.00
Inch								
Code No.	Range	Graduation	Accuracy*	Stem	Stem type	Spindle end	Graduation features	Price
Double thimble type								
110-504	Thimble (fine) 0 - .006"	Thimble (fine) .00002"	±.00015" / ±.00006"	ø.375"	Locknut	Spherical (SR3)	Dual scales; 0.2 mm/.006" fine-feed range	£398.00
	Thimble (coarse) 0 - .5"	Thimble (coarse) .001"						

* Wide range/narrow range.

Dimensions



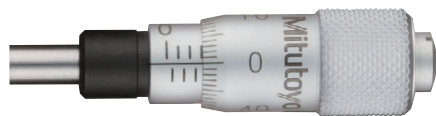
Micrometer Heads

SERIES 148 – Short Range Small Micrometer Head

- Miniature micrometer heads for ease of incorporating into machines, jigs and fixtures.

Technical Data

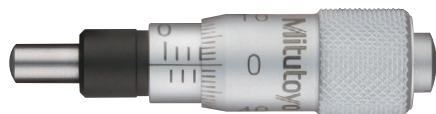
Graduation: 0.01 mm / .001"



148-201



148-203



148-205

Specifications

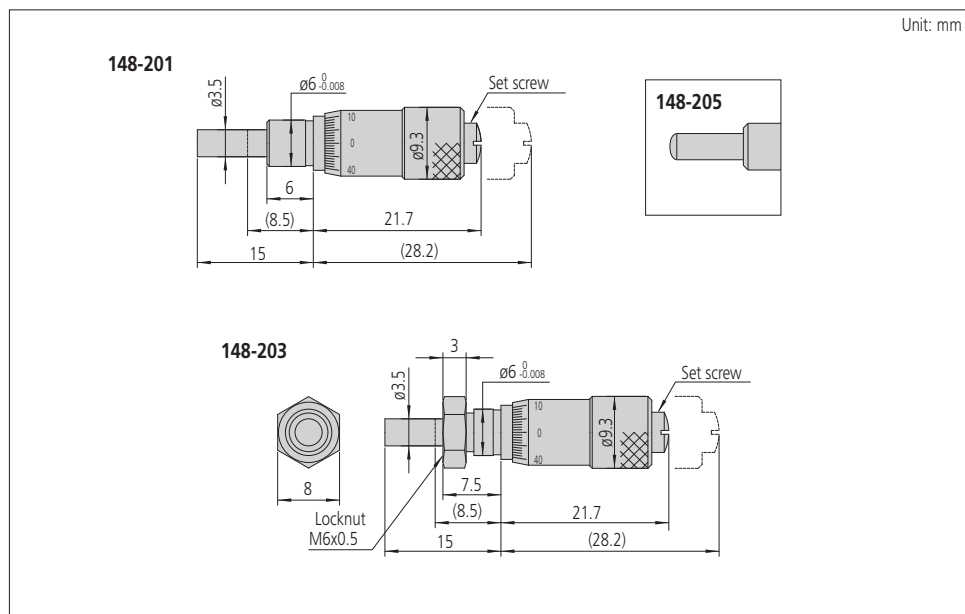
Metric

Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Price
148-201	0 - 6.5 mm	±5 µm	ø6 mm	Plain	Flat	£44.90
148-203				Locknut		£50.90
148-205				Plain	Spherical (SR3)	£51.20

Inch

Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Price
148-202	0 - .25"	±.00025"	ø.25"	Plain	Flat	£44.90

Dimensions



Technical Data

Graduation: 0.01 mm
 Spindle pitch: 0.5 mm

SERIES 148 – Short Body Micrometer Head

- Short body design maintains measuring range for limited space applications.



148-303

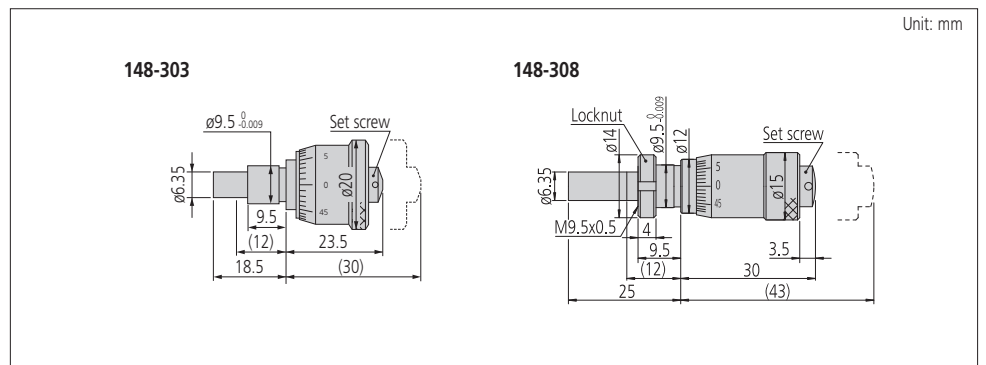


148-308

Specifications

Metric							
Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Thimble	Price
148-303	0 - 6.5 mm	±2 μm	ø9.5 mm	Plain	Flat	ø20 mm	£68.60
148-308	0 - 13 mm			Locknut		ø15 mm	£68.60

Dimensions



Micrometer Heads

SERIES 148 – Small Standard Micrometer Head

- Measuring range 13 mm / .5".



148-104



148-801



148-821

Technical Data

Graduation:	0.01 mm / .001"
Spindle pitch:	0.5 mm / .025"
Spindle end:	Flat or spherical form, SKS-3 tool steel (more than HRC60), lapped surface
Scale:	Satin-chrome plated

Specifications

Metric

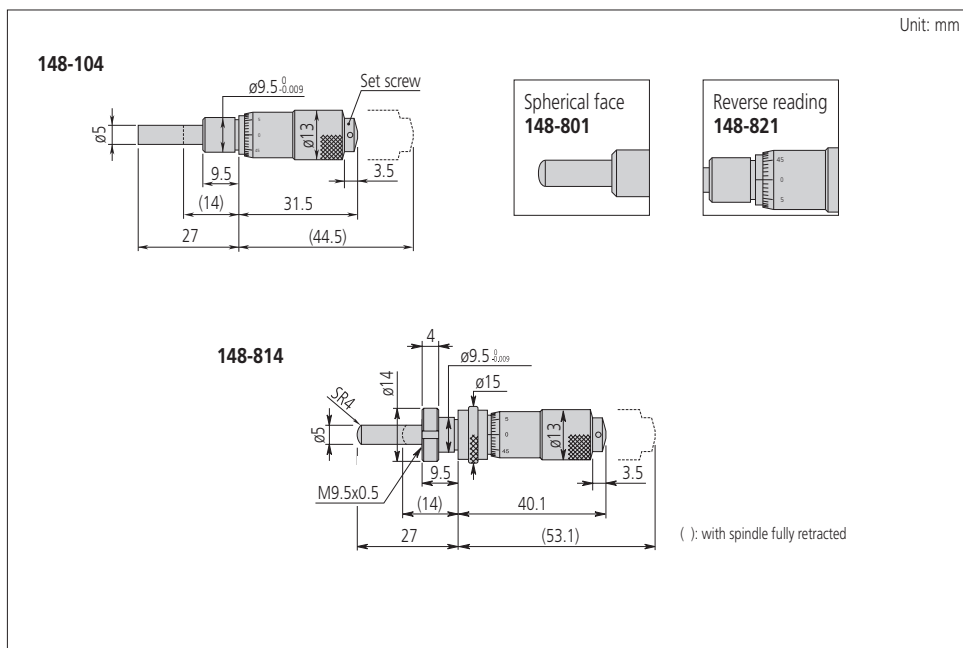
Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Graduation features	Price
148-104	0 - 13 mm	±2 μm	ø9.5 mm	Plain	Flat	Standard	£45.70
148-801					Spherical (SR4)		
148-821					Flat	Reverse reading	£46.30

Inch

Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Graduation features	Price
148-112	0 - .5"	±.0001"	ø.375"	Plain	Flat	Standard	£45.70
148-811				Plain	Spherical (SR4)		
148-814*				Locknut		Flat	Reverse reading
148-831				Plain			

* With spindle lock.

Dimensions



Technical Data

Graduation: 0.01 mm / .001"
 Spindle pitch: 0.5 mm / .025"

SERIES 148 – Adjustable Thimble Small Standard Micrometer Head

- Measuring range 13 mm / .5"
- The thimble can be set to zero at any position by loosening the setscrew.



148-503



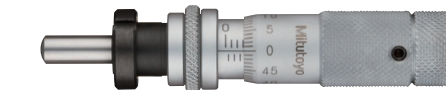
148-504



148-853



148-863



148-854



148-864

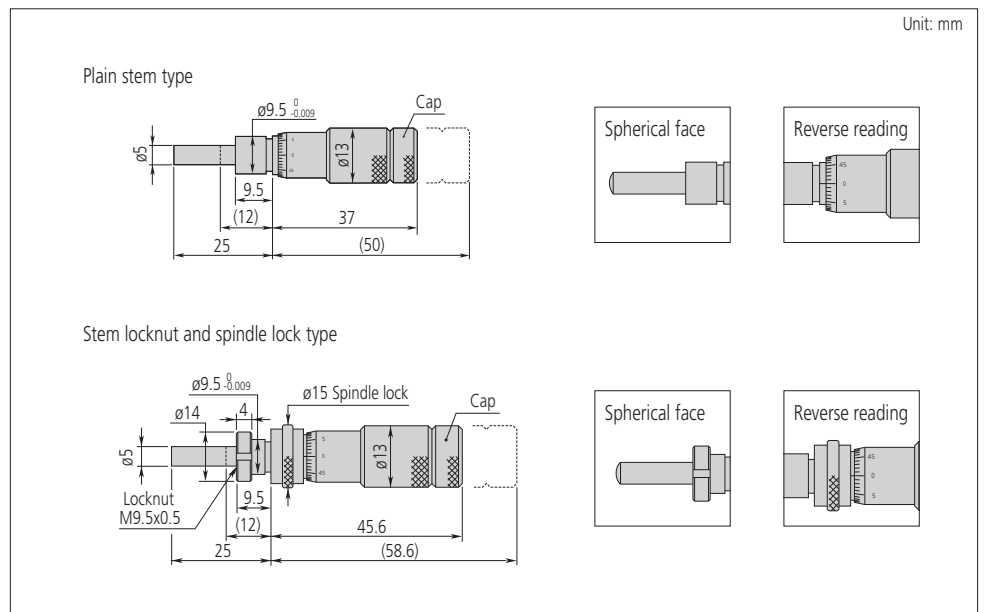
Specifications

Metric							
Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Special features	Price
148-503	0 - 13 mm	±2 μm	ø9.5 mm	Plain	Flat	Standard	£47.00
148-504*				Locknut			£54.60
148-853				Plain	Spherical (SR4)		£49.30
148-854*				Locknut			£56.40
148-863				Plain	Flat	Reverse reading	£58.80
148-864*				Locknut			£57.40

Inch							
Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Special features	Price
148-501	0 - .5"	±.0001"	ø.375"	Plain	Flat	Standard	£47.00
148-502*				Locknut			£54.60
148-851				Plain	Spherical (SR4)		£49.30
148-852*				Locknut			£56.40
148-861				Plain	Flat	Reverse reading	£58.80
148-862*				Locknut			£57.40

* With spindle lock.

Dimensions



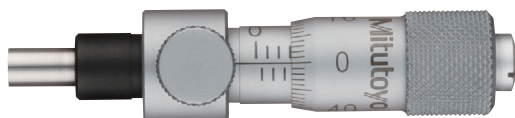
Micrometer Heads

SERIES 148 – Locking Screw Micrometer Head

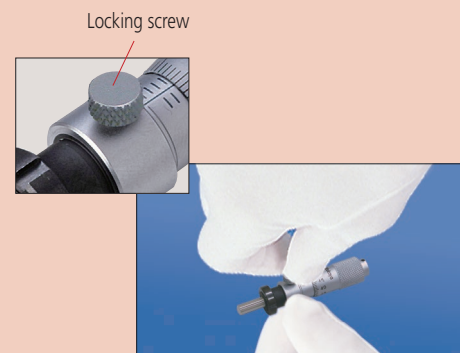
- Locking screw provides secure locking at any position of the spindle.
- Position of the locking screw is the same as the sleeve index line.

Technical Data

Graduation: 0.01 mm / .001"
 Spindle pitch: 0.5 mm / .025"



148-220



Specifications

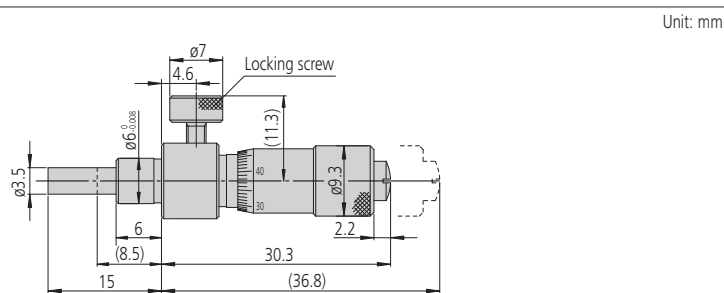
Metric

Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Price
148-220	0 - 6.5 mm	±5 µm	ø6 mm	Plain	Flat	£44.90

Inch

Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Price
148-230	0 - .25"	±.00025"	ø.25"	Plain	Flat	£44.90

Dimensions



Technical Data

Graduation: 0.01 mm / .001"
 Spindle pitch: 0.5 mm / .025"

SERIES 149 – Carbide Tipped Spindle Small Standard Micrometer Head

- Carbide-tipped spindle provides high abrasion resistance.



149-131



149-132



149-801



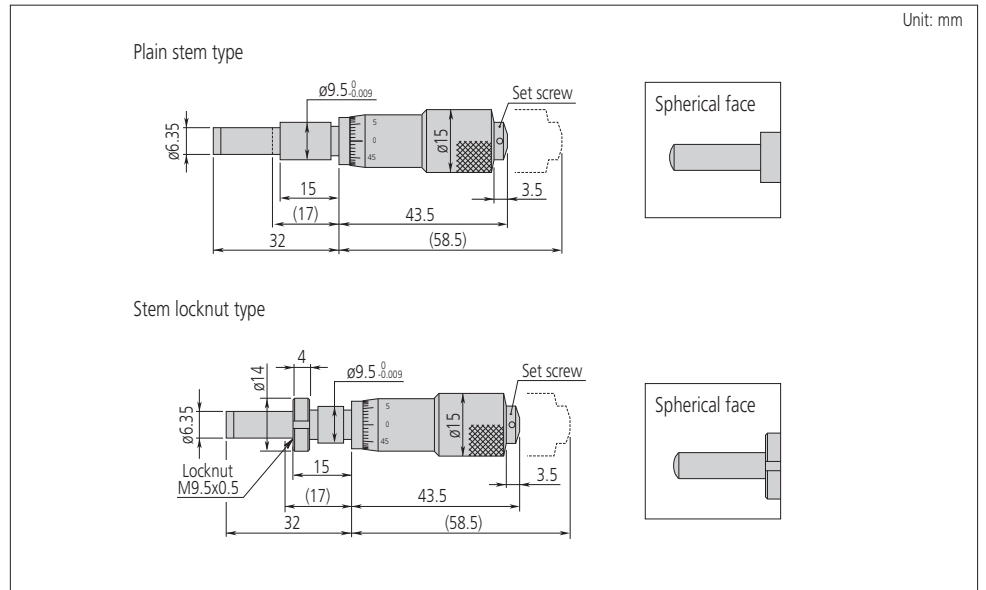
149-802

Specifications

Metric						
Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Price
149-132	0 - 15 mm	±2 μm	ø9.5 mm	Plain	Flat	£45.70
149-131				Locknut		£49.30
149-801				Plain	Spherical (SR4)	£46.70
149-802				Locknut		£51.00

Inch						
Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Price
149-811	0 - .5"	±.0001"	ø.375"	Plain	Spherical (SR4)	£46.70
149-812				Locknut		£51.00

Dimensions



Micrometer Heads

SERIES 150 – Carbide Tipped Spindle Medium Standard Micrometer Head

- Measuring range of 25 mm.

Technical Data

Spindle pitch: 0.5 mm / .025"



150-191



150-801



150-190

Specifications

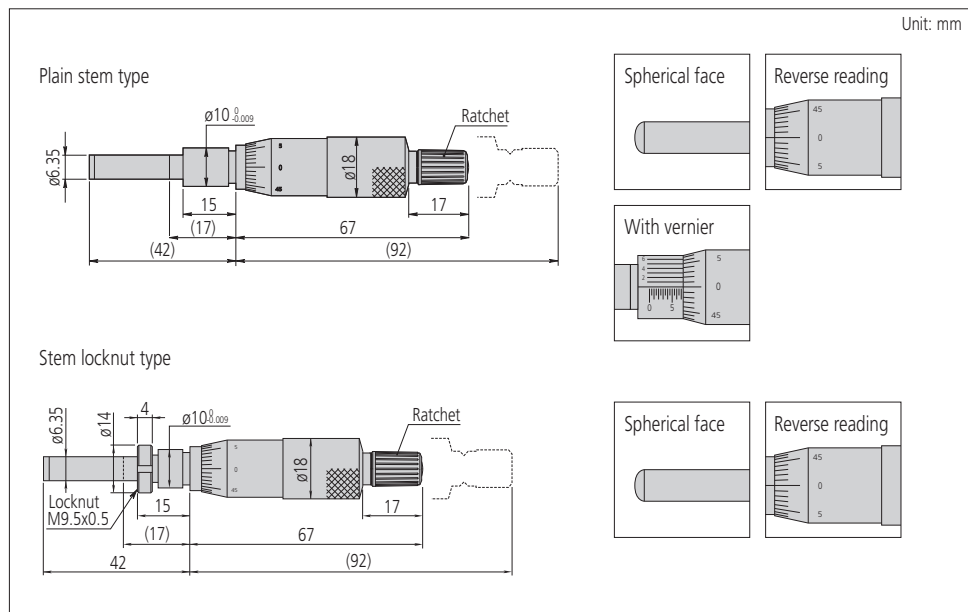
Metric

Code No.	Range	Graduation	Accuracy	Stem	Stem type	Spindle end	Special features	Price
150-190	0-25 mm	0.001 mm	±2 μm	ø10 mm	Plain	Flat	With vernier	£64.70
150-192							Standard	£44.10
150-191		Locknut			£44.10			
150-801		Plain			Spherical (SR4)	£44.90		
150-802						Locknut		£46.70
150-821		Plain			Flat	Reverse graduation		£46.70
150-822						Locknut		£50.30

Inch

Code No.	Range	Graduation	Accuracy	Stem	Stem type	Spindle end	Special features	Price
150-206	0-1"	.0001"	±.0001"	ø.375"	Plain	Flat	With vernier	£64.70
150-208							Standard	£44.10
150-207		Locknut			£44.10			
150-811		Plain			Spherical (SR4)	£44.90		
150-812						Locknut		£46.70
150-831		Plain			Flat	Reverse graduation		£46.70
150-832						Locknut		£50.30

Dimensions



Technical Data

Spindle pitch: 0.5 mm / .025"

SERIES 151 – ø8 mm Spindle Medium Standard Micrometer Head

- Larger spindle for heavy-duty applications (normally ø6.35 mm).

151-221



151-224



151-255



Specifications

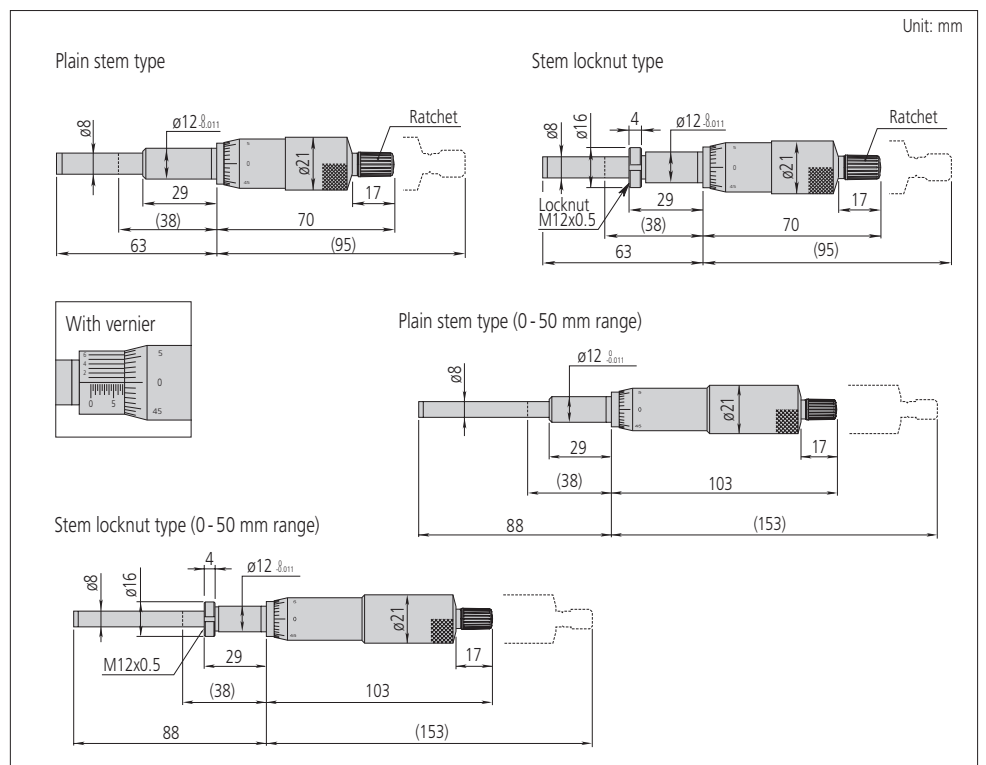
Metric

Code No.	Range	Graduation	Accuracy	Stem	Stem type	Spindle end	Special features	Price
151-224	0 - 25 mm	0.01 mm	±2 µm	ø12 mm	Plain	Flat (carbide tip)	—	£64.70
151-223					Locknut			£64.70
151-222		0.001 mm			With vernier		Plain	£64.70
151-221							Locknut	£66.20
151-256	0 - 50 mm	0.01 mm	±4 µm		Plain		—	£128.00
151-255					Locknut			£128.00

Inch

Code No.	Range	Graduation	Accuracy	Stem	Stem type	Spindle end	Special features	Price
151-240	0 - 1"	.001"	±.0001"	ø.5"	Plain	Flat (carbide tip)	—	£64.70
151-239					Locknut			£64.70
151-238		.0001"			With vernier		Plain	£64.70
151-237							Locknut	£66.20
151-272	0 - 2"	.001"	±.0002"		Plain		—	£128.00
151-271					Locknut			£128.00

Dimensions



Micrometer Heads

SERIES 152 – Large Diameter Thimble Micrometer Head

- Large-diameter thimble provides high discrimination without the need for a vernier scale on standard-range heads.
- Bidirectional graduations for use in either direction.

Technical Data

Graduation: 0.002 mm / .0001"
 Spindle pitch: 0.5 mm / .025"



152-348



152-380

Specifications

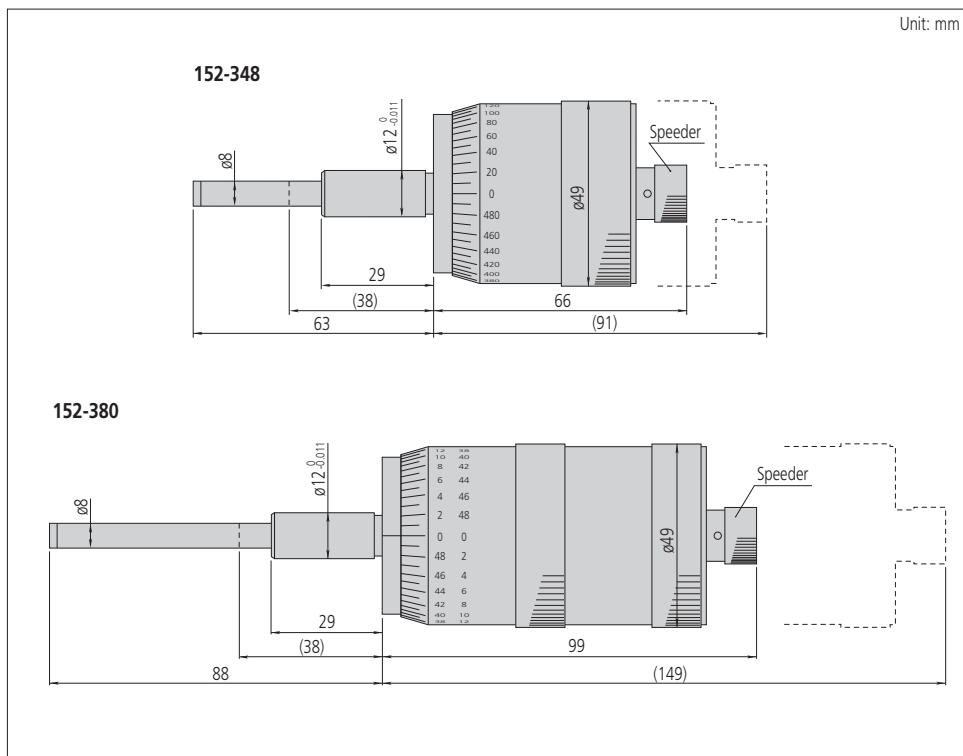
Metric

Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Special features	Price
152-348	0 - 25 mm	±2 μm	ø12 mm	Plain	Flat (carbide tip)	Bidirectional	£307.00
152-380	0 - 50 mm	±4 μm					£388.00

Inch

Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Special features	Price
152-372	0 - 1"	±.0001"	ø.5"	Locknut	Flat (carbide tip)	Bidirectional	£307.00
152-388	0 - 2"						£388.00

Dimensions



Technical Data

Graduation: 0.005 mm / .0001"
 Spindle pitch: 1 mm / .025"

SERIES 152 – XY-Stage Micrometer Head

- Bidirectional graduations for use in either direction, suitable for cross-travel stage translation in X and Y.
- Spindle end: Flat form and hardened, or spherical with carbide tip (more than HRA90), lapped surface.
- Rotating collar on thimble enables zero setting at any position.
- Non-rotating device on spindle reduces workpiece deformation and wear.

152-389



152-390



Specifications

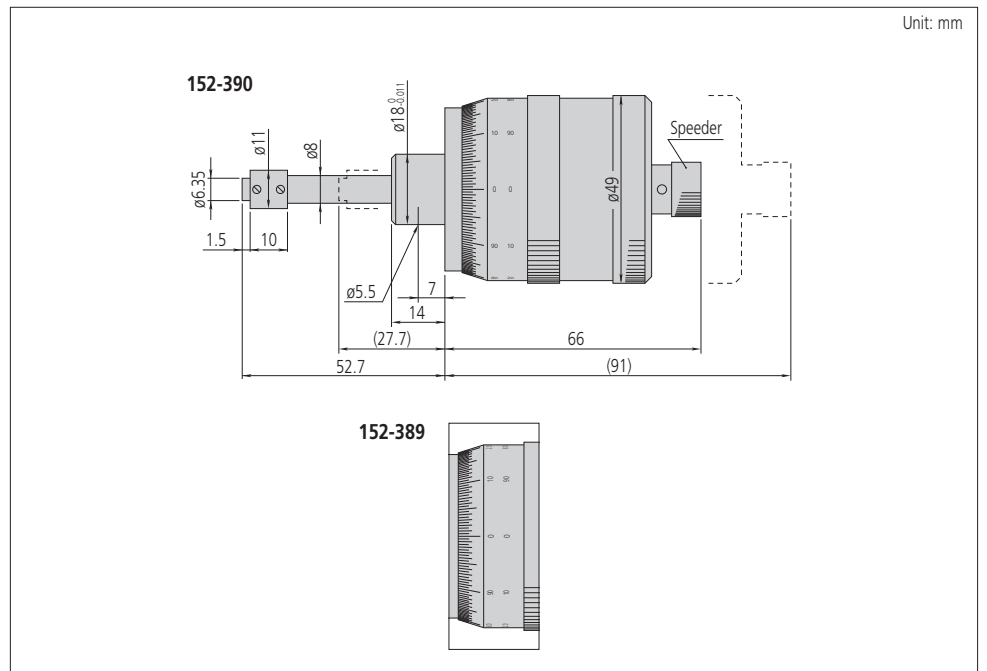
Metric

Code No.	Range	Accuracy	Stem	Stem type	Special features	Price
152-390	0-25 mm	±2 μm	ø18 mm	Plain	For X-axis, bidirectional	£178.00
152-389					For Y-axis, bidirectional	£178.00

Inch

Code No.	Range	Accuracy	Stem	Stem type	Special features	Price
152-392	0-1"	±.0001"	ø.709"	Plain	For X-axis, bidirectional	£178.00
152-391					For Y-axis, bidirectional	£178.00

Dimensions



Micrometer Heads

SERIES 153 – Non-Rotating Spindle Micrometer Head

- Torsion-free feed reduces workpiece deformation and wear.

Technical Data

Spindle pitch: 0.5 mm / .025"



153-101



153-201



153-202

Specifications

Metric

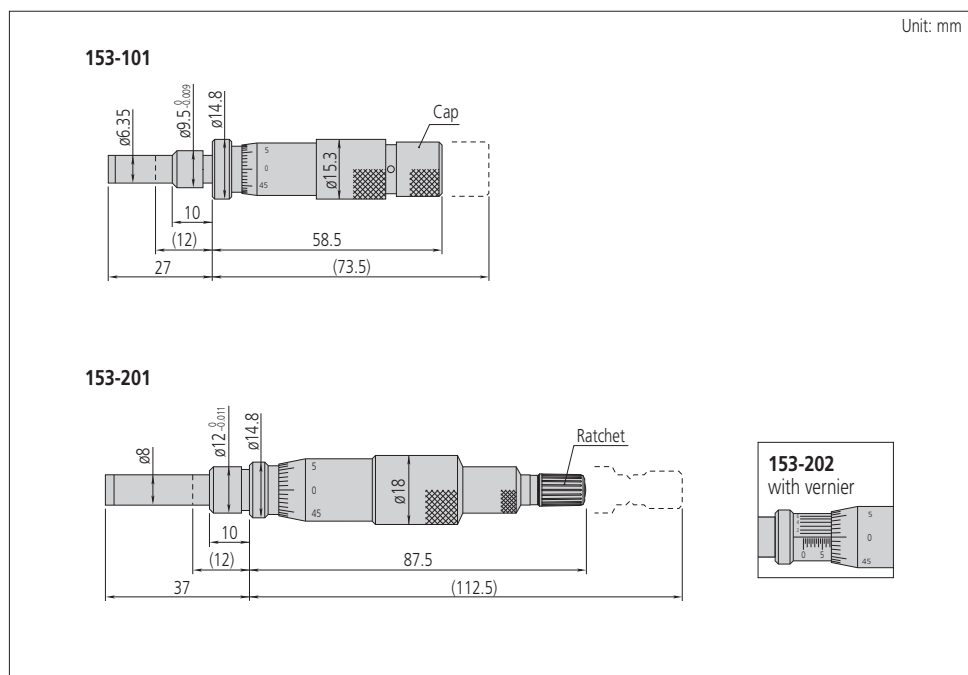
Code No.	Range	Graduation	Accuracy	Stem	Stem type	Spindle end	Special features	Price
153-101	0 - 15 mm	0.01 mm	±3 μm	ø9.5 mm	Plain	Flat (carbide tip)	—	£91.10
153-201*	0 - 25 mm			ø12 mm				£99.10
153-202*			0.001 mm			With vernier	£99.50	

Inch

Code No.	Range	Graduation	Accuracy	Stem	Stem type	Spindle end	Special features	Price
153-205*	0 - 1"	.001"	±.00015"	ø.5"	Plain	Flat (carbide tip)	—	£99.10
153-206*		.0001"						With vernier

* With Ratchet Stop.

Dimensions



Technical Data

Graduation: 0.0005 mm / .00001"
 Spindle pitch: 0.5 mm / .025"

SERIES 153 – Large Diameter Thimble High Accuracy Micrometer Head

- Fine graduation and high accuracy model.
- Non-rotating spindle reduces workpiece deformation and wear.
- Bidirectional graduations for use in either direction.



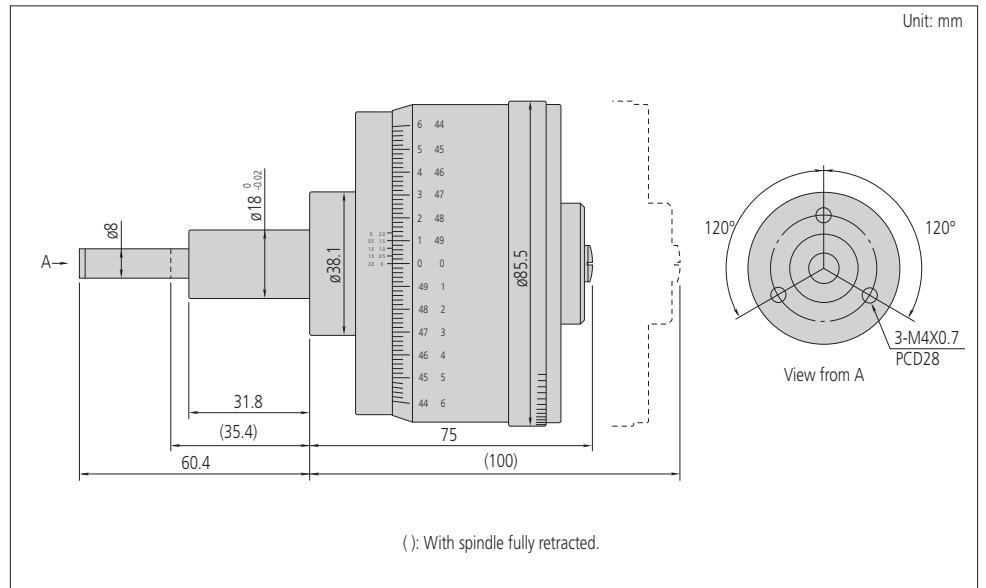
153-301

Specifications

Metric							
Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Special features	Price
153-301	0-25 mm	±1 μm / ±0.5 μm	ø18 mm	Plain	Flat (carbide tip)	Bidirectional	£908.00

Inch							
Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Special features	Price
153-302	0-1"	±.00005" / ±.00003"	ø.709"	Plain	Flat (carbide tip)	Bidirectional	£908.00

Dimensions



B

Micrometer Heads

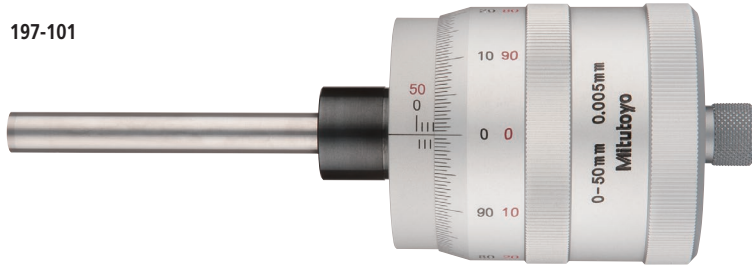
SERIES 197 – Large Diameter Thimble Non-Rotating Spindle Micrometer Head

- Large thimble micrometer head with non-rotating spindle.
- Floating thimble allows easy zero setting at any spindle position.
- Dual-spindle mechanism for quick feed of 1 mm (.05") / rev (standard models: 0.5 mm (.025") / rev).

Technical Data

Graduation: 0.005 mm / .0002"
 Spindle pitch: 1 mm / .05"

197-101



Specifications

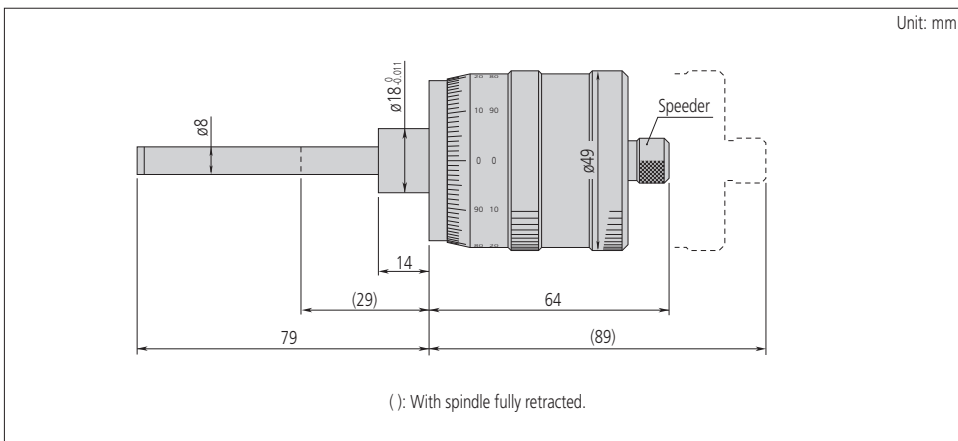
Metric

Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Special features	Price
197-101	0-50 mm	±5 µm	ø18 mm	Plain	Flat (carbide tip)	Bidirectional	£348.00

Inch

Code No.	Range	Accuracy	Stem	Stem type	Spindle end	Special features	Price
197-201	0-2"	±.0001"	ø.709"	Plain	Flat (carbide tip)	Bidirectional	£348.00

Dimensions



Technical Data

Graduation: 0.01 mm



SERIES 7 – Micro Jack

- Used for accurate levelling of machines, surface plates, and precision instruments.
- Zero-setting is possible at any position.
- Easy adjustment under heavy load.



Specifications

Metric				
Code No.	Range	Handle force at max. loading	Remarks	Price
7850	60 - 75 mm	90 N	Max. load: 400 kg	£334.00

Dimensions

