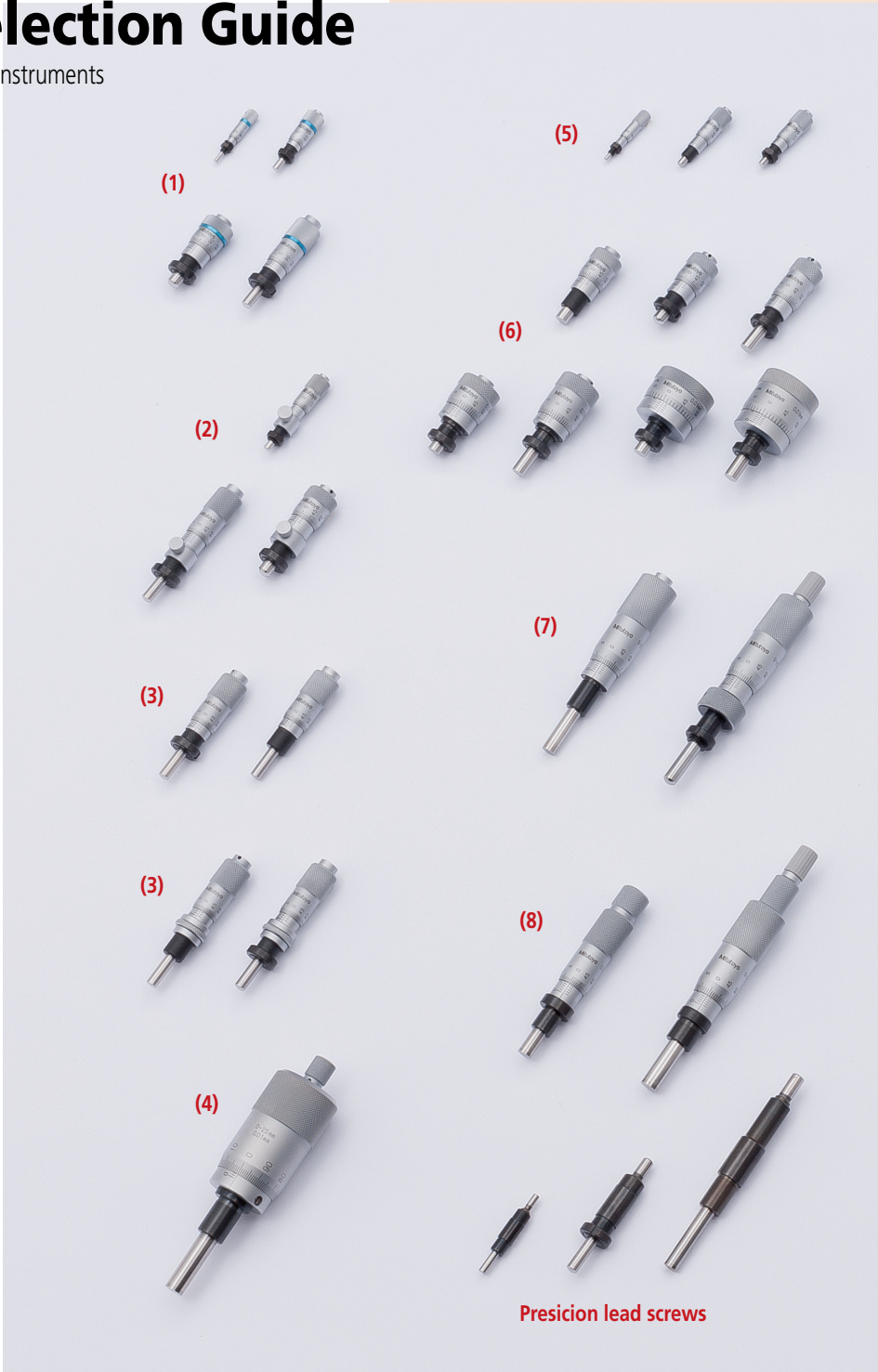


Micrometer Head Selection Guide

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

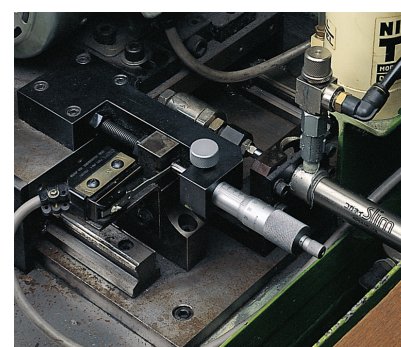
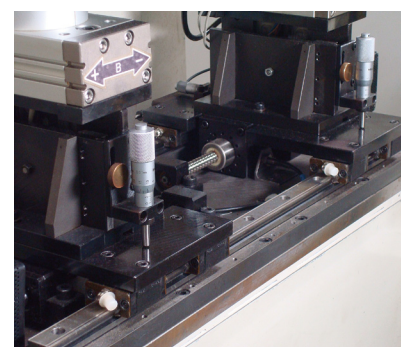
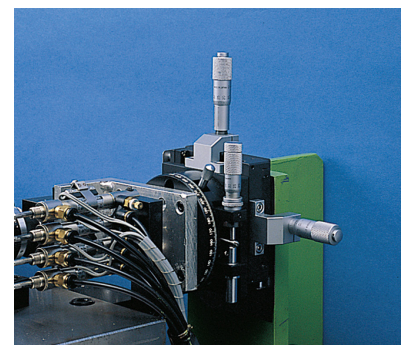
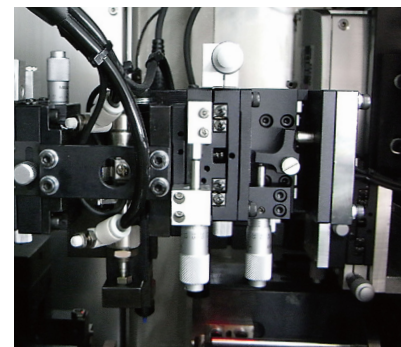
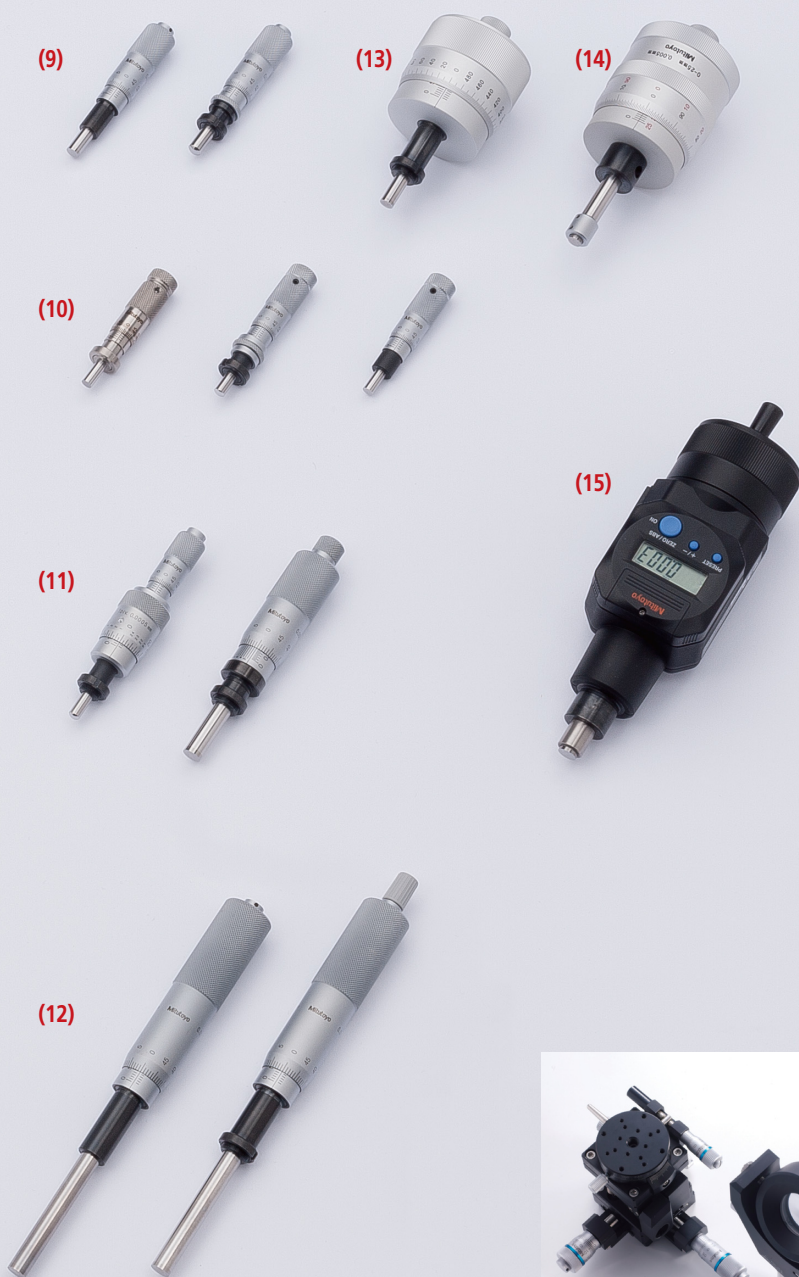
SELECTION TABLE

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.



Also refer to "Quick Guide to Precision Measuring Instruments" from page B-113.

Measuring stroke	Main feature of head		Series	Page
1 mm / 0.02 in	High-Function	Differential Screw Translator (Extra-Fine Feed) Type	110	B-104
2.5 mm / 0.05 in	High-Function	Differential Screw Translator (Extra-Fine Feed) Type (11)		B-104
5 mm / 0.2 in	High-Function	Fine Spindle Feed of 0.1 mm/rev (1)	148	B-101 to B-102
	Standard	Small / Ultra-small Type (5)		B-80 to B-81
6.5 mm / 0.25 in	Standard	Locking-screw Type (2)		B-96 to B-98
	High-Function	Fine Spindle Feed of 0.1 mm/rev (1)		B-101 to B-102
	High-Function	Fine Spindle Feed of 0.25 mm/rev		B-103
	Standard	Small / Ultra-small Type (5)		B-80 to B-81
		Short Thimble with Choice of Diameter (6)		B-82 to B-83
10 mm	High-Function	Large Thimble Type (13)	152	B-105 to B-106
	Standard	Locking-screw Type (2)	148	B-96 to B-98
13 mm / 0.5 in	High-Function	Fine Spindle Feed of 0.25 mm/rev		B-103
		Differential Screw Translator (Extra-Fine Feed) Type (11)	110	B-104
		Short Thimble with Choice of Diameter (6)	148	B-82 to B-83
	Standard	Small Standard Type (3)		B-84 to B-85
		Small Thimble Diameter Standard Type (10)		B-86 to B-87



Measuring stroke	Main feature of head			Series	Page
15 mm / 0.5 in	High-Function	Non-rotating Spindle Type	(8)	153	B-99
	High-Function	Quick Spindle Feed of 1 mm/rev	(4)	152	B-100
	Standard	Small Standard Type with Carbide-Tipped Spindle	(9)	149	B-88 to B-89
25 mm / 1 in	Digimatic			350	B-77 to B-79
	High-Function	Non-rotating Spindle Type	(8)	153	B-99
		Quick Spindle Feed of 1 mm/rev		152	B-100
		Large Thimble Type			B-105 to B-106
		XY-Stage Type	(14)		B-107
		High Accuracy and Resolution		153	B-108
		Digit Counter Type		250	B-109
	Standard	Medium-sized Standard Type	(7)	150	B-90 to B-92
		Medium-sized Standard Type with 8 mm Diameter Spindle		151	B-93 to B-95
50 mm / 2 in	Digimatic		(15)	164	B-77 to B-79
		Quick Spindle Feed of 1 mm/rev		152	B-100
		Large Thimble Type			B-105 to B-106
		Long Stroke Non-rotating Spindle		197	B-108
	Medium-sized Standard Type with 8 mm Diameter Spindle	(12)	151	B-93 to B-95	
60 - 75 mm	Micro Jack			7	B-109

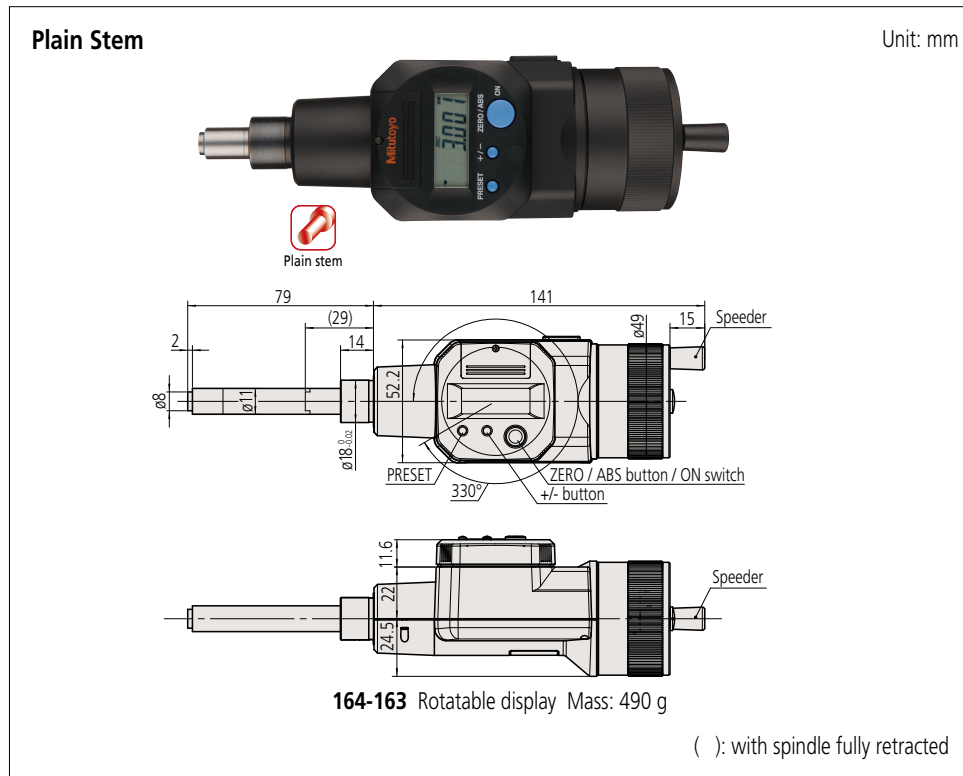
Micrometer Head

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

Digimatic Micrometer Heads Series 164, 350

- Equipped with digital display and output.
- Series 350 IP65 models: the Digimatic output port enables inclusion in a statistical process control or networked measurement system. (Refer to page A-3 for details.)

DIMENSIONS



SPECIFICATIONS

Metric								
Order No.	Stroke	Resolution	Accuracy**	Stem	Stem dia	Spindle end	Graduation feature	
164-163	50 mm	0.001 mm	±3 µm	Plain	18 mm	Flat (carbide tip)	Standard	
350-251-30	25 mm		±2 µm	W/ clamp nut	10 mm	Spherical (SR4) (carbide tip)		
350-252-30				Plain				
350-253-30				W/ clamp nut	12 mm	Flat (carbide tip)		
350-254-30				Plain				
350-281-30*				W/ clamp nut				Spherical (SR4) (carbide tip)
350-282-30*				Plain				
350-283-30*				W/ clamp nut				Flat
350-284-30*				Plain				
350-261-30*								

* IP65 dust/water protection type
** Excluding quantizing error

Inch/Metric							
Order No.	Stroke	Resolution	Accuracy**	Stem	Stem dia	Spindle end	Graduation feature
164-164	2 in	0.00005 in/ 0.001 mm	±0.00015 in	Plain	0.709 in	Flat (carbide tip)	—
350-351-30	1 in		±0.0001 in		W/ clamp nut		
350-352-30				Plain			
350-353-30				W/ clamp nut	0.5 in	Flat (carbide tip)	
350-354-30				Plain			
350-381-30*				W/ clamp nut		Flat (carbide tip)	
350-382-30*				Plain			
350-383-30*				W/ clamp nut		Flat	
350-384-30*				Plain			
350-361-30*							

* IP65 dust/water protection type
* Note: Stem diameter of IP65 type is 12 mm.
** Excluding quantizing error



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



IP Codes (series 350)

Level 6: Dustproof
No ingress of dust allowed.
Level 5: Protected against water jets.
Water projected in jets against the enclosure from any direction shall have no harmful effects.
Battery for series 350
SR44(1 pc), 938882 for initial operation checks (standard accessory)
Battery for series 164
SR44(2 pcs.), 938882 for initial operation checks (standard accessory)
Battery life: Approx. 2.4 years under normal use (for series 350-XXX)
Approx. 1.8 years under normal use (for series 164-163, 164)
Length standard: Electromagnetic rotary sensor
Spanner (301336), 1 pc (for series 350-XXX)
Screwdriver (No.05CAA952), 1 pc (for series 164-163, 164)

Functions (series 164/350)

Origin point setting (ABS measurement system):
Resets the ABS origin at the current spindle position to the minimum value of the measuring stroke 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.
Data output:
Equipped with output port for transferring measurement data to a Statistical Process Control (SPC) and measurement 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 on the LCD to reappear.

Error alarm:
In case of an overflow on the LCD or a computing error, an error message appears on the LCD and the measuring function stops. This prevents an instrument from giving an erroneous reading. Also, when the battery voltage drops to a certain level, the low-battery-voltage alarm annunciator appears well before the micrometer becomes unusable.

Optional Accessories

Connecting cables for **series 164**

1 m: **959149**
2 m: **959150**

USB Input Tool Direct

USB-ITN-C (2 m): **06ADV380C**
02AZD790C 160 mm

For foot switch: **02AZE140C**

Connecting cables for **series 350**

1 m: **05CZA662**
2 m: **05CZA663**

USB Input Tool Direct

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

Wireless data output **U-WAVE**
U-WAVE-TM 264-622 (IP67 type)
264-623 (Buzzer type)

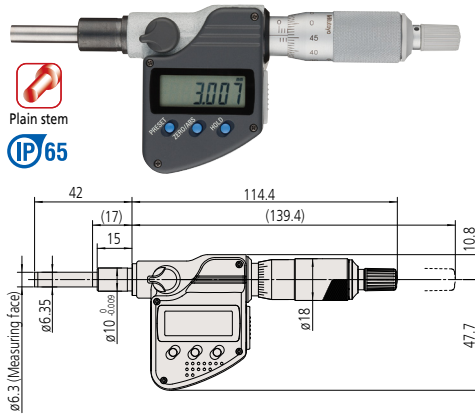
Connecting unit for U-WAVE-TM
02AZF310 (IP67 type)

Note: cannot be used with 164-163 and 164-164
Refer to page A-15 for details

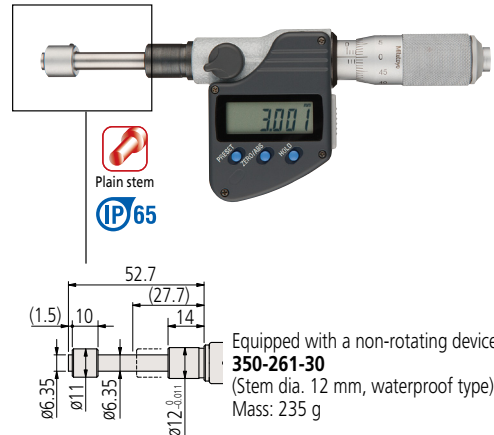
DIMENSIONS

Plain Stem

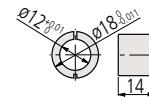
Unit: mm



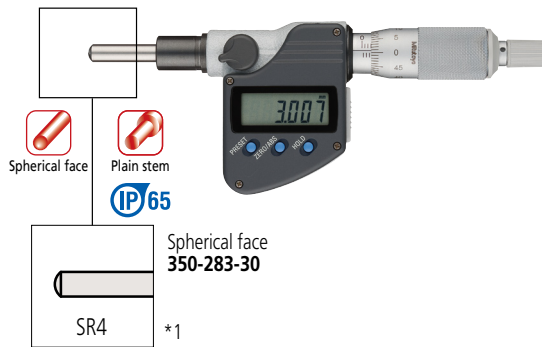
350-281-30 (Stem dia. 12mm, waterproof type) Mass: 230 g



Equipped with a non-rotating device
350-261-30
(Stem dia. 12 mm, waterproof type)
Mass: 235 g



Bush (standard accessory)
350-261-30

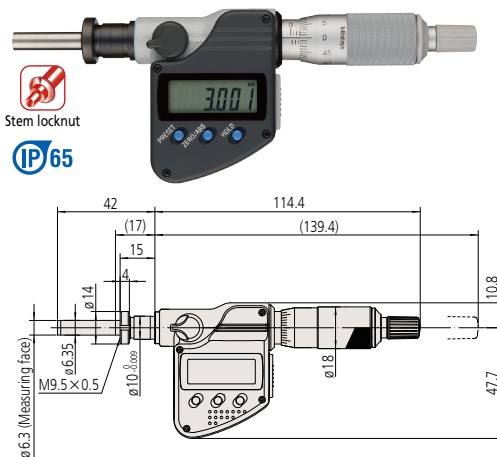


Spherical face
350-283-30

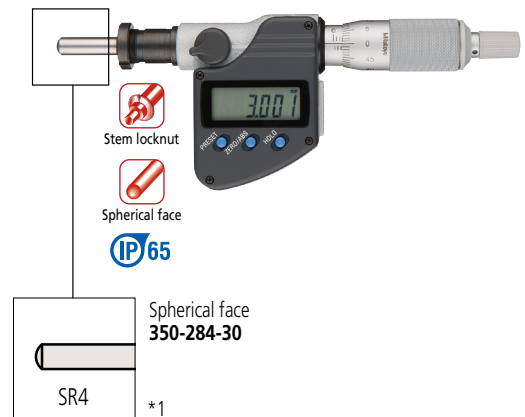
*1

*1 Other dimensions are the same as **350-281-30**.
(): with spindle fully retracted

Stem locknut



Fixture thickness: 11.5 mm
350-282-30 (Stem dia. 12 mm, equipped with locknut, waterproof type) Mass: 230 g



Spherical face
350-284-30

*1

*1 Other dimensions are the same as **350-282-30**.
(): with spindle fully retracted

Micrometer Head

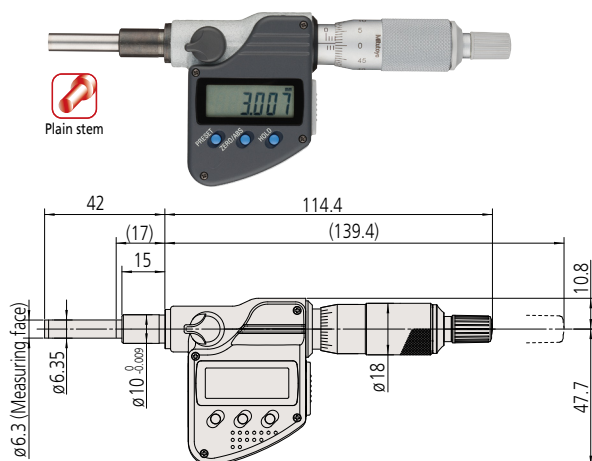
The origin of Mitutoyo's trustworthy brand of small tool instruments

Digimatic Micrometer Heads SERIES 164, 350

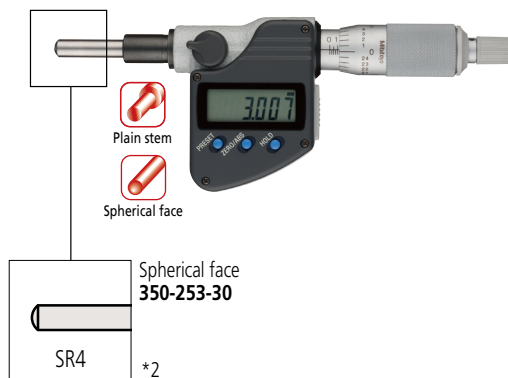
DIMENSIONS

Plain Stem

Unit: mm

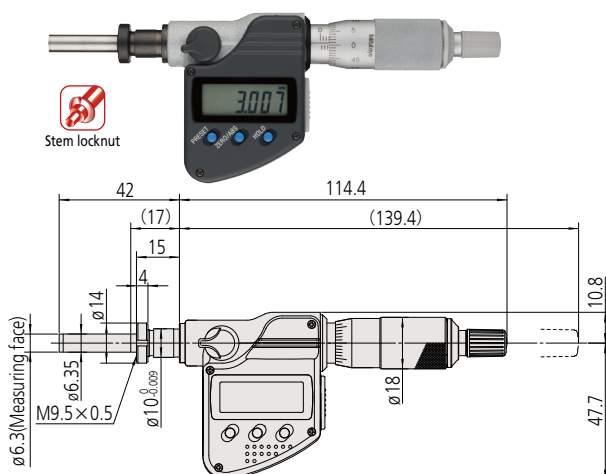


350-251-30
(Stem dia. 10 mm, for general use) Mass: 230 g

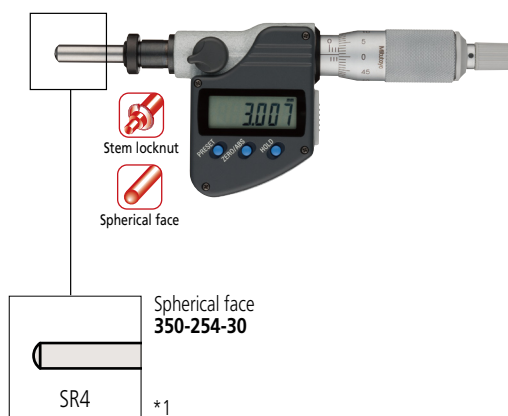


*2 Other dimensions are the same as **350-251-30**.
(): with spindle fully retracted

Stem Locknut



Fixture thickness: 11.5 mm
350-252-30
(Stem dia. 10 mm, for general use) Mass: 230 g



*1 Other dimensions are the same as **350-252-30**.
(): with spindle fully retracted

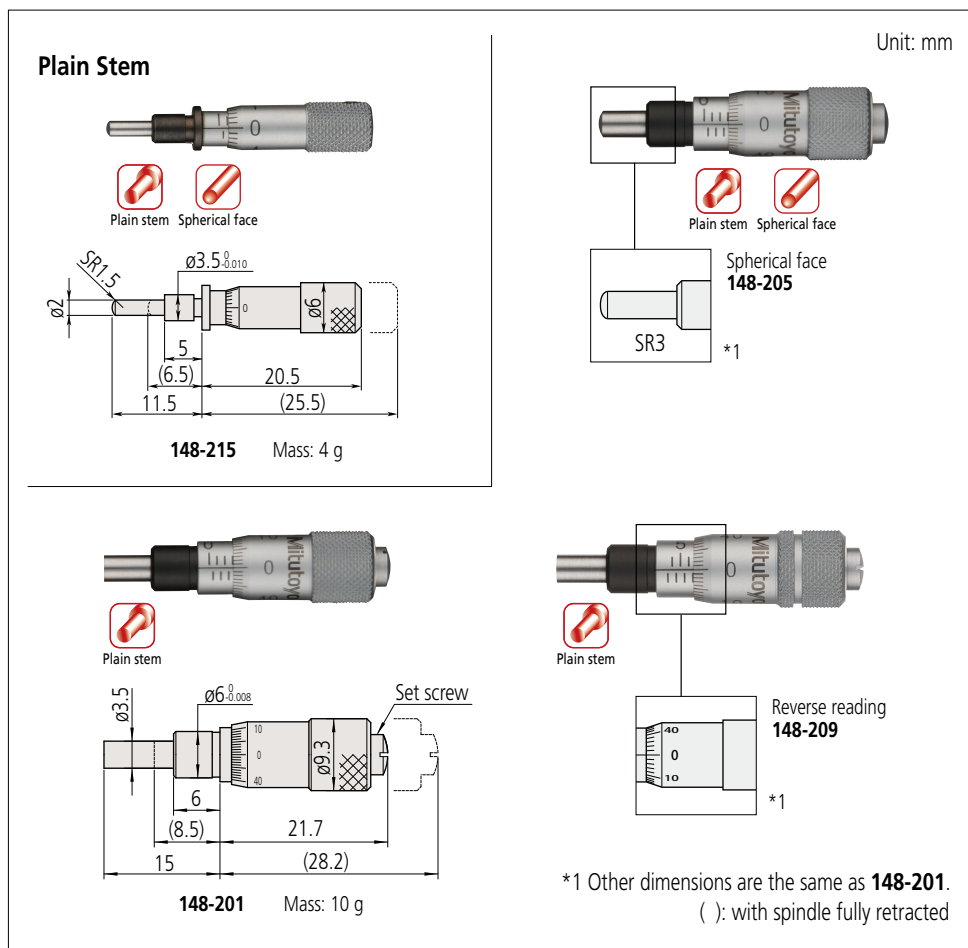
Technical Data

Graduation: 0.02 mm (**148-215, 148-216**),
0.01 mm or .001 in

Micrometer Heads SERIES 148 — Small/Ultra-small Type

- Miniature micrometer heads for ease of incorporating into machines.

DIMENSIONS



SPECIFICATIONS

Metric						
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Graduation
148-215	5 mm	±5 μm	3.5 mm	Plain	Spherical (SR1.5)	Standard
148-216				W/ clamp nut		
148-201	6.5 mm		6 mm	Plain	Flat	
148-203				W/ clamp nut		
148-205				Plain	Spherical (SR3)	
148-207				W/ clamp nut		
148-209				Plain	Flat	
148-211				W/ clamp nut		
Inch						
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Graduation
148-217	0.2 in	±0.00025 in	0.156 in	Plain	Spherical (SR1.5)	Standard
148-218				W/ clamp nut		
148-202	0.25 in		0.25 in	Plain	Flat	
148-204				W/ clamp nut		
148-206				Plain	Spherical (SR3)	
148-208				W/ clamp nut		
148-210*				Plain	Flat	
148-212*				W/ clamp nut		

* made-to-order models

Micrometer Head

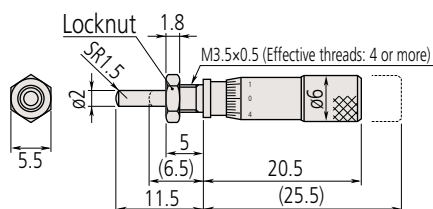
The origin of Mitutoyo's trustworthy brand of small tool instruments

Micrometer Heads SERIES 148 — Small Standard Type

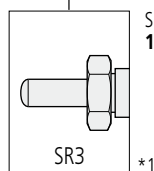
DIMENSIONS

Stem Locknut

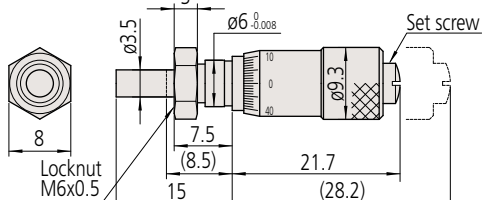
Unit: mm



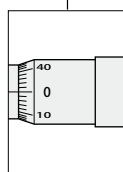
Fixture thickness: 3 mm
148-216 Mass: 4 g



Spherical face
148-207



Fixture thickness: 4 mm
148-203 Mass: 10 g



Reverse reading
148-211

*1 Other dimensions are the same as **148-203**.
(): with spindle fully retracted

Technical Data

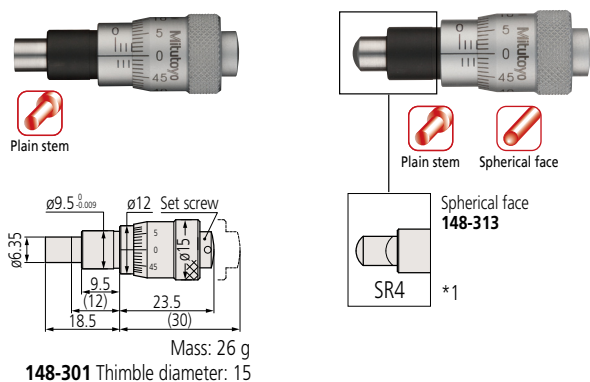
Graduation: 0.01 mm or 0.001 in
Spindle pitch: 0.5 mm or 0.025 in

Micrometer Heads SERIES 148 — Short Thimble with Choice of Diameter

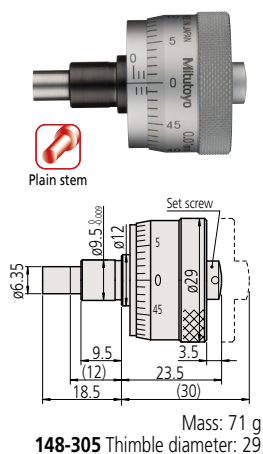
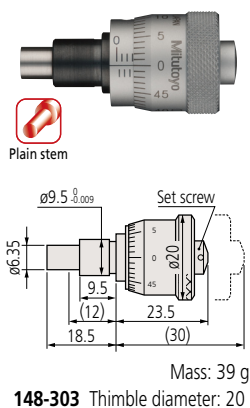
- Short body design maintains measuring stroke for limited space applications.
- Available in three thimble diameters to provide ease-of-reading options.

DIMENSIONS

Plain Stem

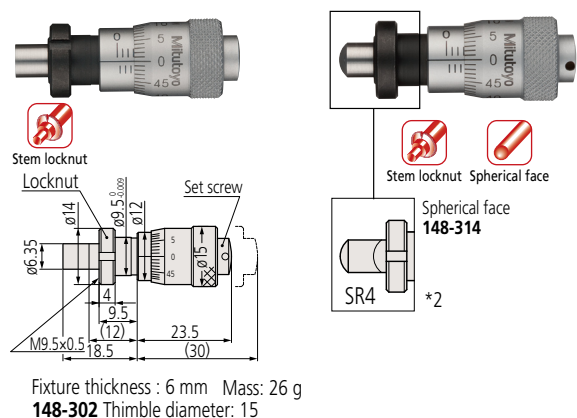


*1 Other dimensions are the same as 148-301.

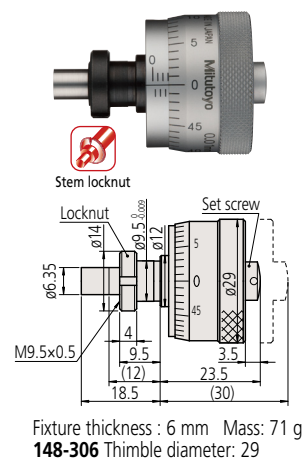
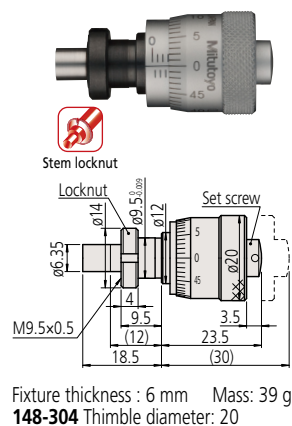


Stem Locknut

Unit: mm



*2 Other dimensions are the same as 148-302.



(): with spindle fully retracted

Micrometer Head

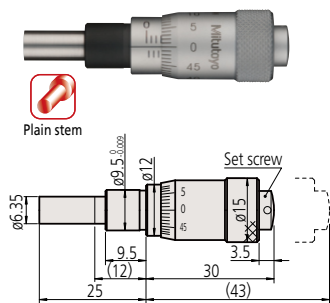
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Micrometer Heads

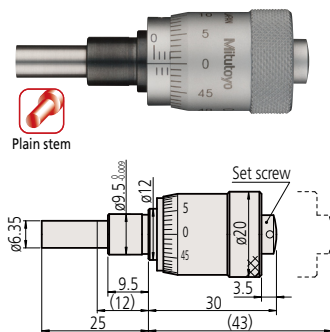
SERIES 148 — Short Thimble with Choice of Diameter

DIMENSIONS

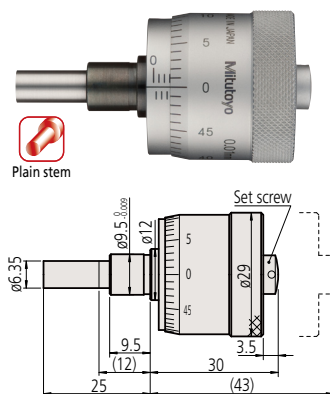
Plain Stem



Mass: 35 g
148-307 Thimble diameter: 15



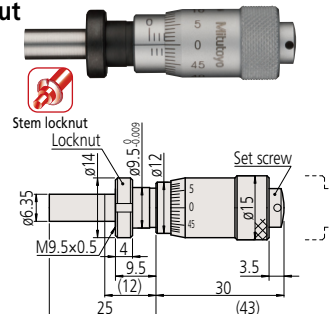
Mass: 55 g
148-309 Thimble diameter: 20



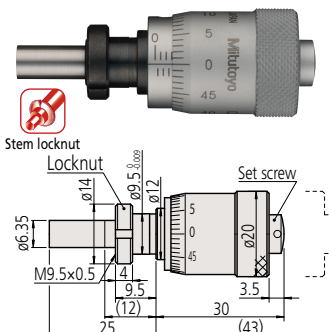
Mass: 103 g
148-311 Thimble diameter: 29

Stem Locknut

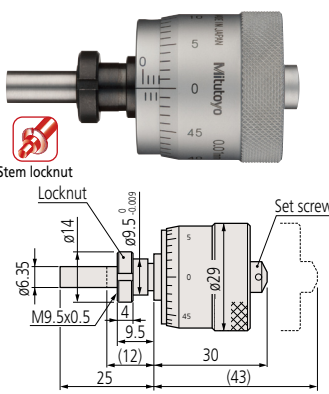
Unit: mm



Fixture thickness : 6 mm Mass: 35 g
148-308 Thimble diameter: 15



Fixture thickness : 6 mm Mass: 55 g
148-310 Thimble diameter: 20



Fixture thickness : 6 mm Mass: 103 g
148-312 Thimble diameter: 29
() : with spindle fully retracted

SPECIFICATIONS

Metric							
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Special features	
148-301	6.5 mm	±2 μm	9.5 mm	Plain	Flat	15 mm thimble dia.	
148-302				W/ clamp nut			
148-303				Plain		20 mm thimble dia.	
148-304				W/ clamp nut			
148-305				Plain		29 mm thimble dia.	
148-306				W/ clamp nut			
148-313	13 mm				Plain	Spherical (SR4)	15 mm thimble dia.
148-314				W/ clamp nut			
148-307				Plain	Flat	15 mm thimble dia.	
148-308				W/ clamp nut			
148-309				Plain		20 mm thimble dia.	
148-310				W/ clamp nut			
148-311				Plain		29 mm thimble dia.	
148-312				W/ clamp nut			

Inch								
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Special features		
148-351	0.25 in	±0.0001 in	0.375 in	Plain	Flat	0.59 in thimble dia.		
148-352				W/ clamp nut				
148-353				Plain		0.79 in thimble dia.		
148-354				W/ clamp nut				
148-355				Plain		1.14 in thimble dia.		
148-356				W/ clamp nut				
148-357	0.5 in					Plain		0.59 in thimble dia.
148-358				W/ clamp nut				
148-359				Plain		0.79 in thimble dia.		
148-360				W/ clamp nut				
148-361				Plain		1.14 in thimble dia.		
148-362				W/ clamp nut				

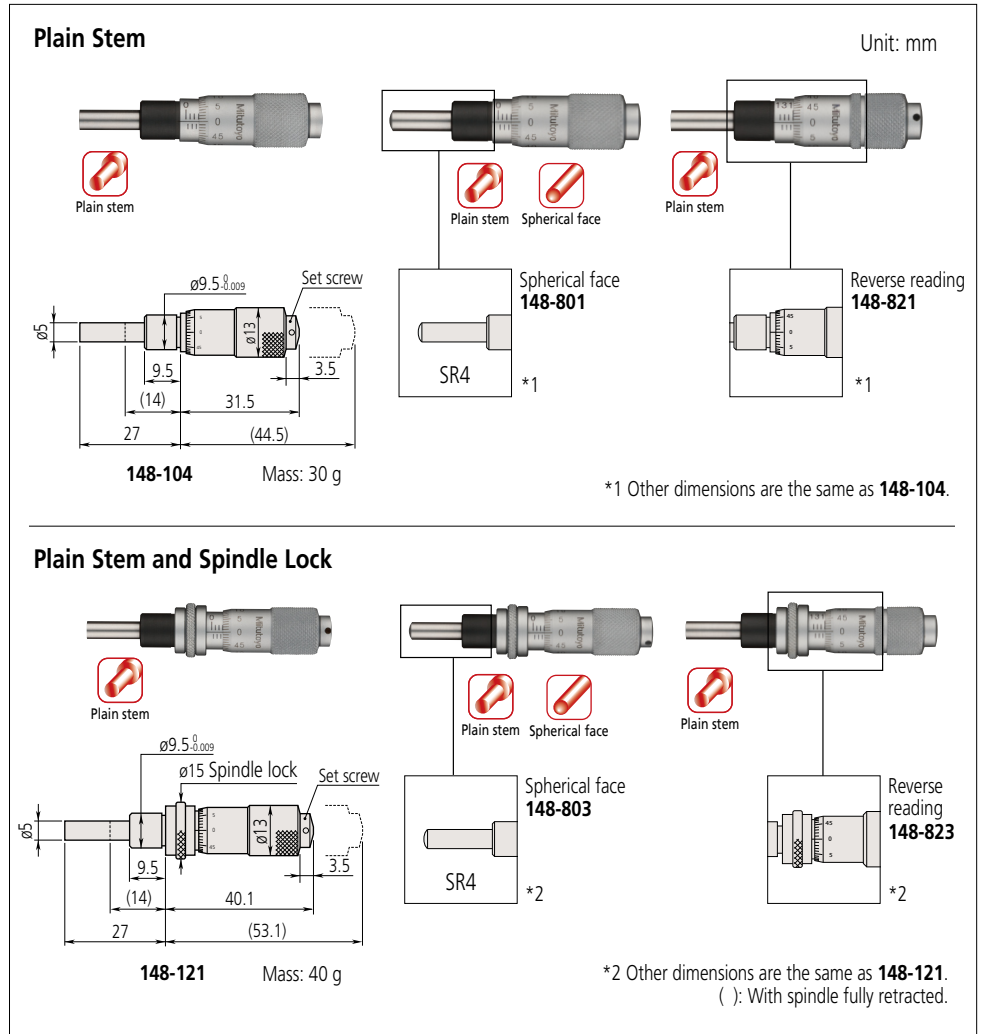
Technical Data

Graduation: 0.01 mm or 0.001 in
Spindle pitch: 0.5 mm or 0.025 in

Micrometer Heads SERIES 148 — Small Standard Type

- Measuring stroke of 13 mm.

DIMENSIONS



SPECIFICATIONS

Metric						
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Graduation features
148-104	13 mm	±2 μm	9.5 mm	Plain	Flat	Standard
148-103				W/ clamp nut		
148-121				Plain*		
148-120				W/ clamp nut*		
148-801				Plain	Spherical (SR4)	
148-802				W/ clamp nut		
148-803				Plain*		
148-804				W/ clamp nut*		
148-821				Plain	Flat	Reverse reading
148-822				W/ clamp nut		
148-823				Plain*		
148-824				W/ clamp nut*		

* with spindle lock

Inch						
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Graduation features
148-112	0.5 in	±0.0001 in	0.375 in	Plain	Flat	Standard
148-111**				W/ clamp nut		
148-123				Plain*		
148-122				W/ clamp nut*		
148-811				Plain	Spherical (SR4)	
148-812				W/ clamp nut		
148-813				Plain*		
148-814				W/ clamp nut*		
148-831				Plain	Flat	Reverse reading
148-832				W/ clamp nut		
148-833				Plain*		
148-834				W/ clamp nut*		

* with spindle lock

** made-to-order model

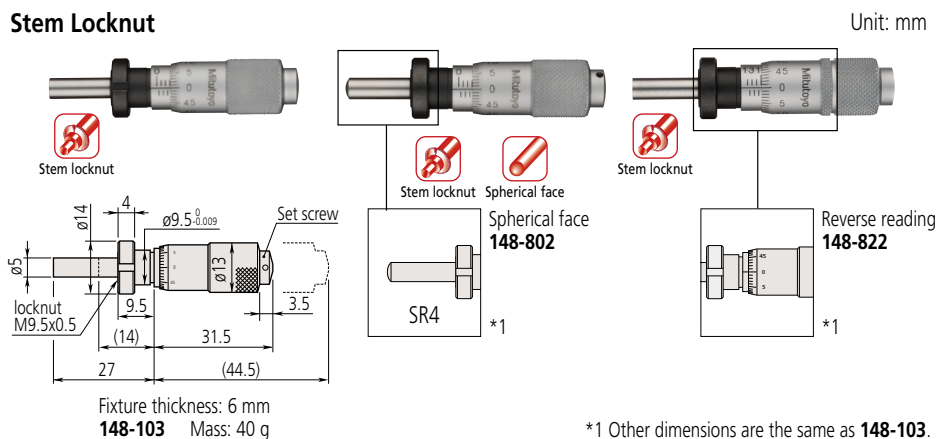
Micrometer Head

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

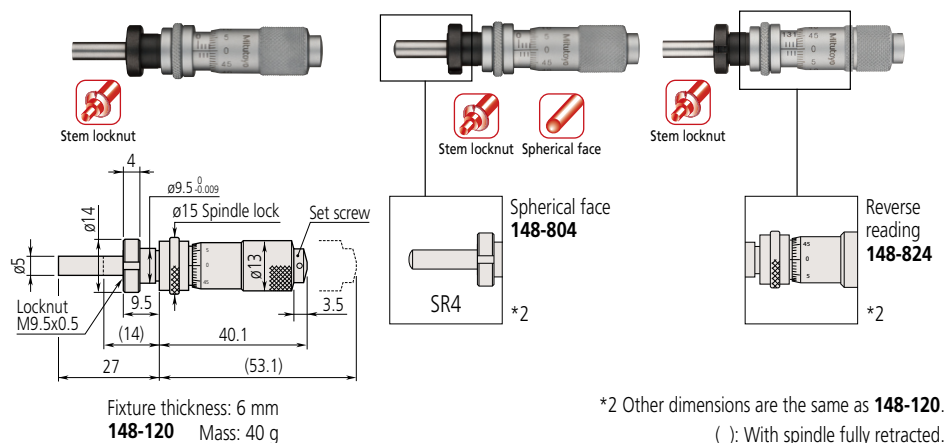
Micrometer Heads SERIES 148 — Small Standard Type

DIMENSIONS

Stem Locknut



Stem Locknut and Spindle Lock



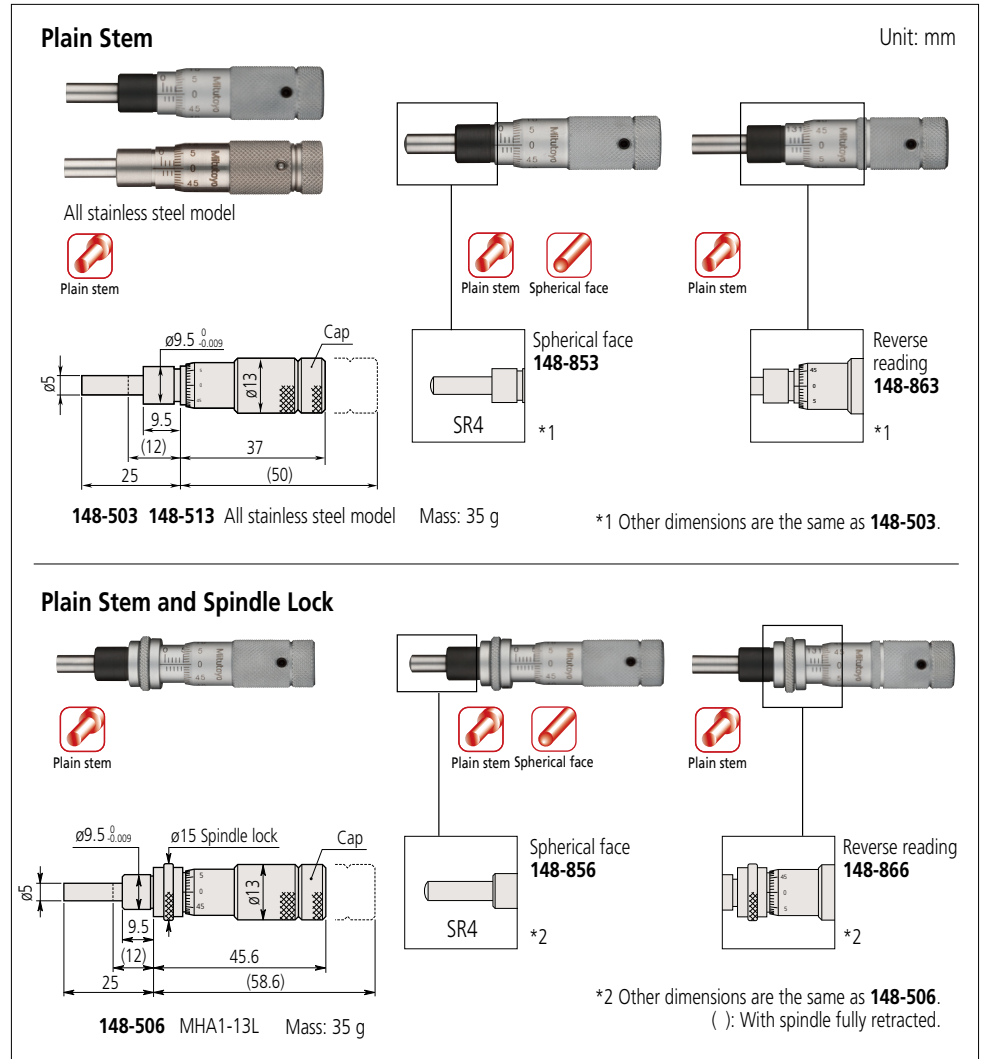
Technical Data

Graduation: 0.01 mm or 0.001 in
Spindle pitch: 0.5 mm or 0.025 in

Micrometer Heads SERIES 148 — Small Thimble Diameter Standard Type

- Measuring stroke of 13 mm.
- The thimble can be set to zero at any position by loosening the setscrew.
- Stainless steel throughout: 148-513, 518, 511.

DIMENSIONS



SPECIFICATIONS

Metric						
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Special features
148-503	13 mm	±2 μm	9.5 mm	Plain	Flat	Standard
148-513						Stainless steel throughout
148-508				W/ clamp nut	Flat	Standard
148-506				Plain*		
148-504				W/ clamp nut*	Spherical (SR4)	Standard
148-853				Plain		
148-854				W/ clamp nut*	Flat	Reverse reading
148-863				Plain		
148-864				W/ clamp nut*	Spherical (SR4)	Stainless steel throughout
148-518**				W/ clamp nut		
148-858**				W/ clamp nut	Flat	Standard
148-866**				Plain*		
148-856**				Plain*	Spherical (SR4)	Reverse reading
148-868**				W/ clamp nut	Flat	Reverse reading

* with spindle lock ** made-to-order models

Inch						
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Special features
148-501	0.5 in	±0.0001 in	0.375 in	Plain	Flat	Standard
148-511**						Stainless steel throughout
148-507**				W/ clamp nut	Flat	Standard
148-505				Plain*		
148-502				W/ clamp nut*	Spherical (SR4)	Standard
148-851				Plain		
148-852				W/ clamp nut*	Flat	Reverse reading
148-861				Plain		
148-862				W/ clamp nut*	Flat	Reverse reading

* with spindle lock ** made-to-order models

Micrometer Head

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

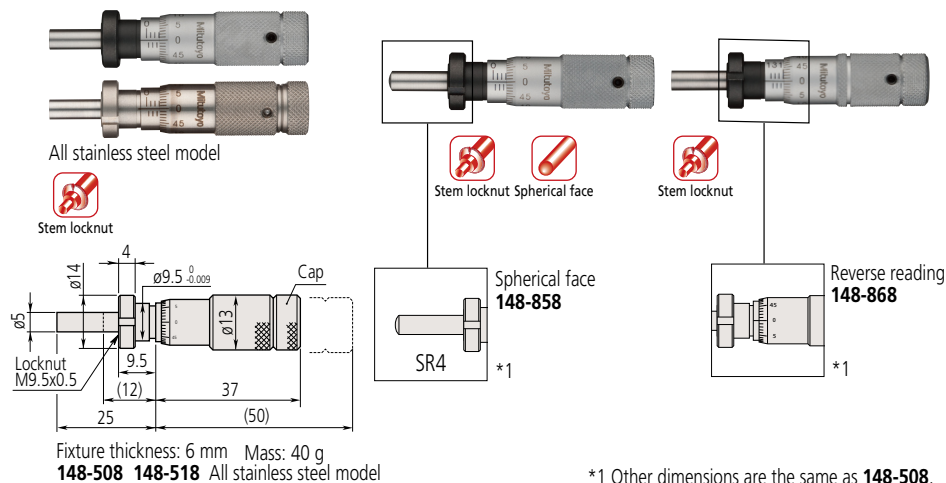
Micrometer Heads

SERIES 148 — Small Thimble Diameter Standard Type

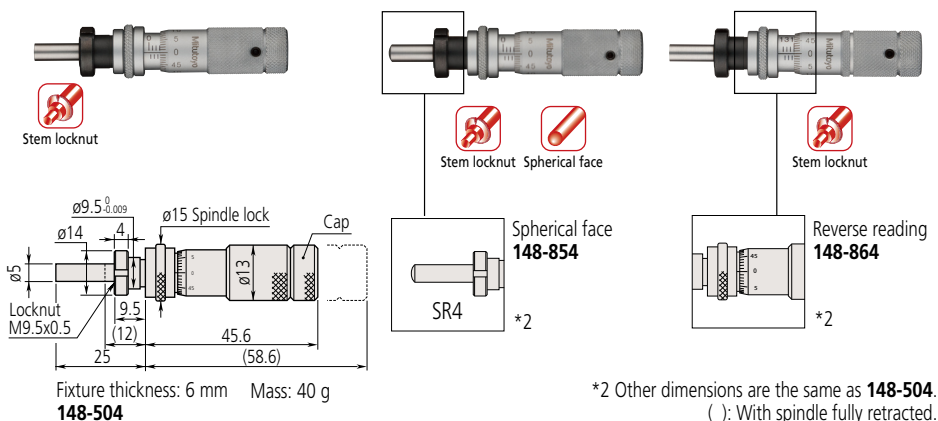
DIMENSIONS

Stem Locknut

Unit: mm



Stem Locknut and Spindle Lock



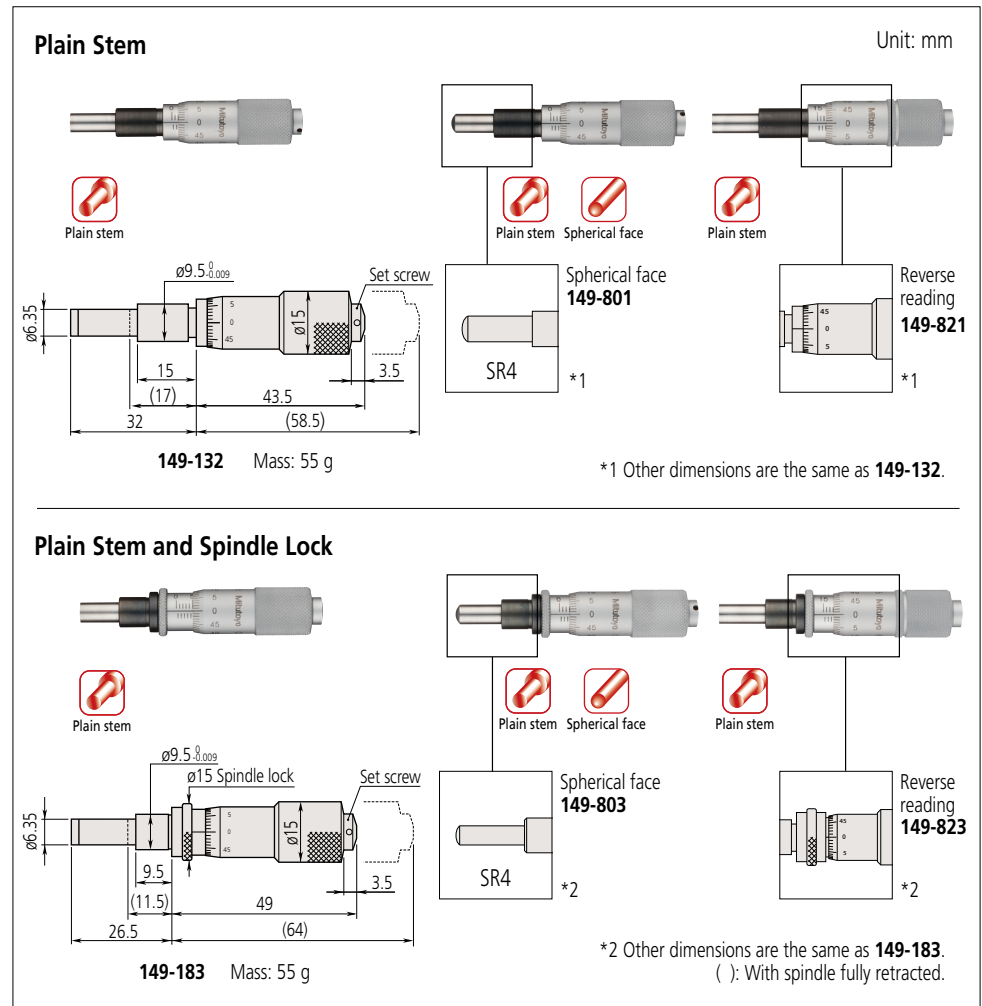
Technical Data

Graduation: 0.01 mm or 0.001 in
Spindle pitch: 0.5 mm or 0.025 in

Micrometer Heads SERIES 149 — Small Standard Type with Carbide-Tipped Spindle

- Carbide-tipped spindle provides high abrasion resistance.

DIMENSIONS



SPECIFICATIONS

Metric						
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Graduation features
149-132	15 mm	$\pm 2 \mu\text{m}$	9.5 mm	Plain	Flat (carbide tip)	Standard
149-131				W/ clamp nut		
149-183				Plain*		
149-184				W/ clamp nut*	Spherical (SR4) (carbide tip)	Standard
149-801				Plain		
149-802				W/ clamp nut		
149-821				Plain	Flat (carbide tip)	Reverse reading
149-822				W/ clamp nut		
149-803**				Plain*	Spherical (SR4) (carbide tip)	Standard
149-804**				W/ clamp nut*		
149-823**				Plain*	Flat (carbide tip)	Reverse reading
149-824**				W/ clamp nut*		

* with spindle lock ** made-to-order models

Inch						
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Graduation features
149-148	0.5 in	$\pm 0.0001 \text{ in}$	0.375 in	Plain	Flat (carbide tip)	Standard
149-147				W/ clamp nut		
149-185***				Plain*		
149-182				W/ clamp nut*	Spherical (SR4) (carbide tip)	Standard
149-811				Plain		
149-812				W/ clamp nut		
149-831**				Plain	Flat (carbide tip)	Reverse reading
149-832**				W/ clamp nut		
149-181**				Plain*		

* with spindle lock ** made-to-order model *** w/ratchet (149-181) is available

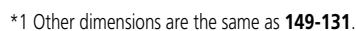
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SERIES 149 — Small Standard Type with Carbide-Tipped Spindle

Stem Locknut

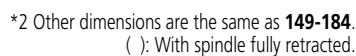
Mass: 60 g

Unit: mm



Stem Locknut and Spindle Lock Mass: 60 g

Mass: 60 g



Technical Data

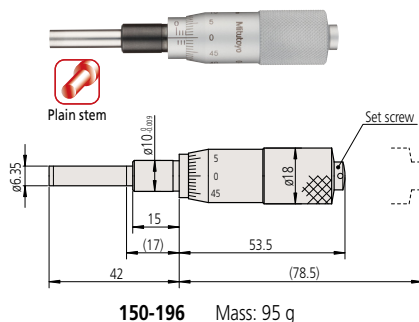
Graduation: 0.01 mm, 0.001 mm, 0.001 in or 0.0001 in
Spindle pitch: 0.5 mm or 0.025 in

Micrometer Heads SERIES 150 — Medium-sized Standard Type

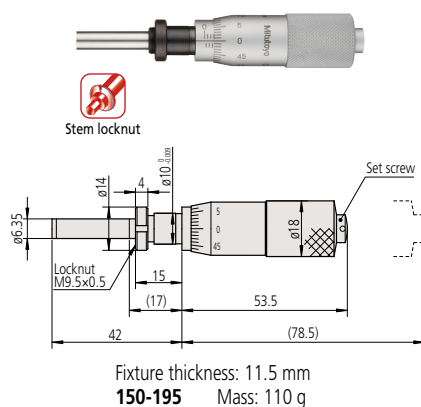
- Measuring stroke of 25 mm.

DIMENSIONS

Plain Stem

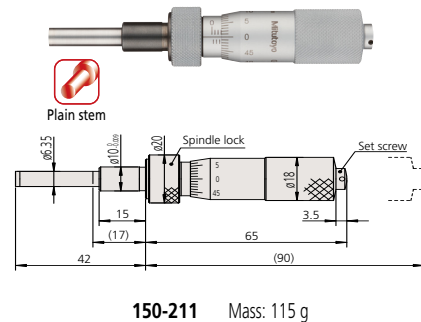


Stem Locknut

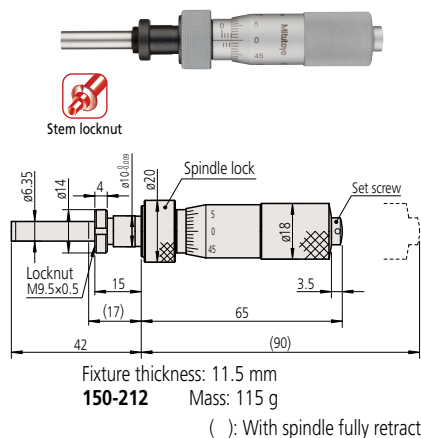


Plain Stem and Spindle Lock

Unit: mm



Stem Locknut and Spindle Lock



SPECIFICATIONS

Metric						
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Special features
150-192	25 mm	±2 μm	10 mm	Plain	Flat (carbide tip)	Standard
150-191				W/ clamp nut		
150-209				Plain*		
150-210				W/ clamp nut*		
150-801				Plain	Spherical (SR4) (carbide tip)	Standard
150-802				W/ clamp nut		
150-821				Plain	Flat (carbide tip)	Reverse reading
150-822				W/ clamp nut		W/vernier (0.001 mm)
150-190				Plain		
150-189				W/ clamp nut		
150-183**				Plain*		
150-184				W/ clamp nut*		w/o ratchet stop
150-196				Plain		
150-195				W/ clamp nut		
150-211				Plain*		
150-212				W/ clamp nut*	Flat	Long spindle
150-219				Plain		
150-220				W/ clamp nut	Spherical (SR4) (carbide tip)	Standard
150-803**				Plain*		
150-804**				W/ clamp nut*	Flat (carbide tip)	Reverse reading
150-823**				Plain*		
150-824**				W/ clamp nut*	Flat	Long spindle
150-223**				Plain*		
150-224**				W/ clamp nut*		

* with spindle lock ** made-to-order models

Inch								
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Special features		
150-208	1 in	±0.0001 in	0.375 in	Plain	Flat (carbide tip)	Standard		
150-207				W/ clamp nut				
150-213**				Plain*				
150-214**				W/ clamp nut*				
150-811				Plain	Spherical (SR4) (carbide tip)			
150-812				W/ clamp nut				
150-831				Plain			Reverse graduation	
150-832				W/ clamp nut				
150-206				Plain		Flat (carbide tip)		W/vernier (0.0001 in)
150-205**				W/ clamp nut				
150-215**				Plain*				
150-216**				W/ clamp nut*				
150-198				Plain	w/o ratchet stop			
150-197				W/ clamp nut				
150-217**				Plain*				
150-218**				W/ clamp nut*				
150-221**				Plain	Flat	Long spindle		
150-222**				W/ clamp nut				

* with spindle lock ** made-to-order models

Micrometer Head

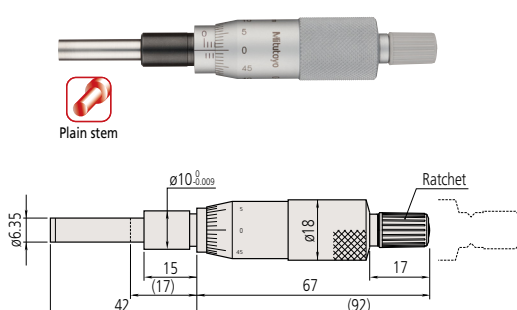
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Micrometer Heads SERIES 150 — Medium-sized Standard Type

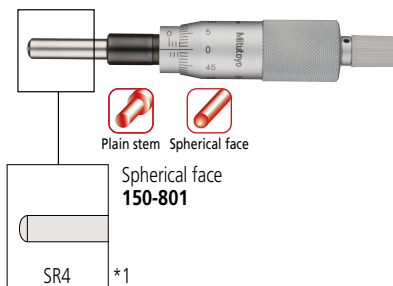
DIMENSIONS

Plain Stem

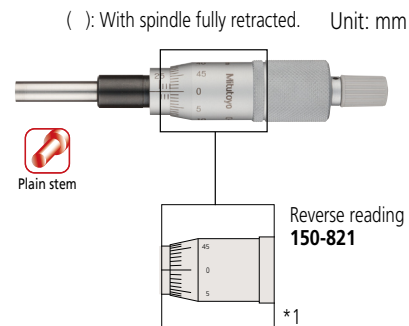
Mass: 95 g



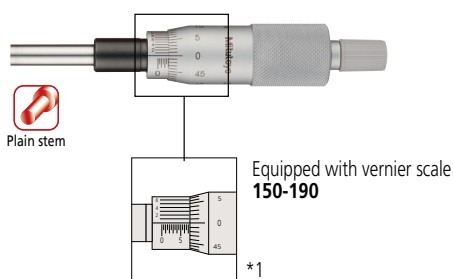
150-192



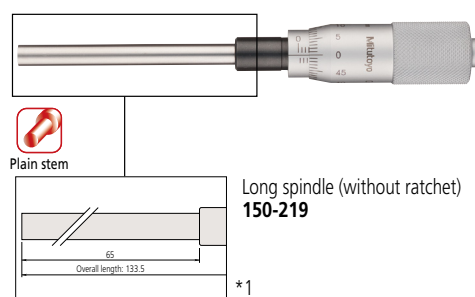
Spherical face
150-801



Reverse reading
150-821



Equipped with vernier scale
150-190

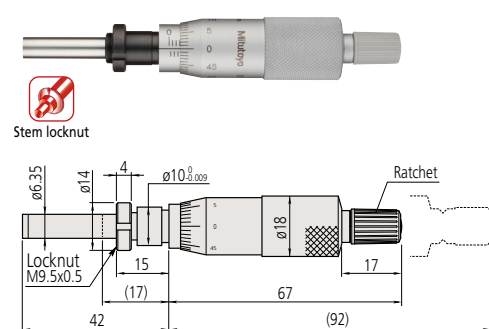


Long spindle (without ratchet)
150-219

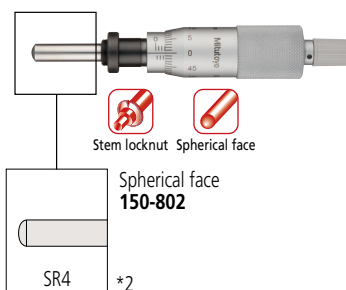
*1 Other dimensions are the same as 150-192.

Stem Locknut

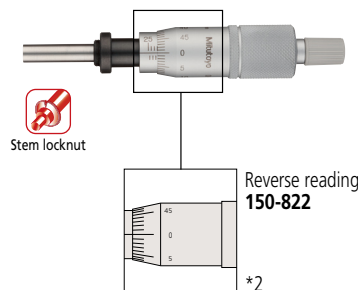
Mass: 100 g



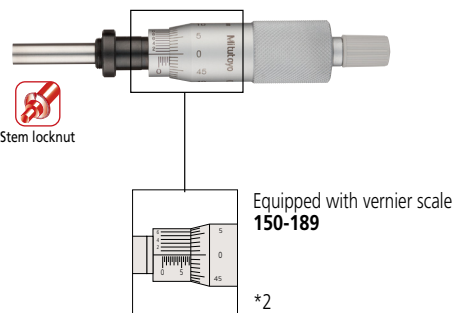
Fixture thickness: 11.5 mm
150-191



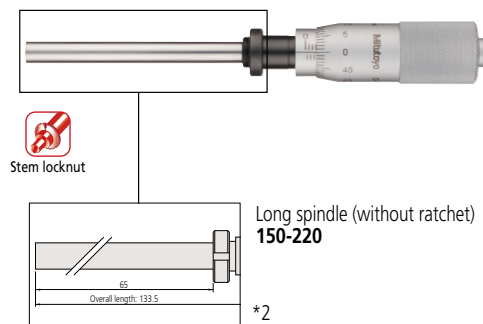
Spherical face
150-802



Reverse reading
150-822



Equipped with vernier scale
150-189



Long spindle (without ratchet)
150-220

*2 Other dimensions are the same as 150-191.

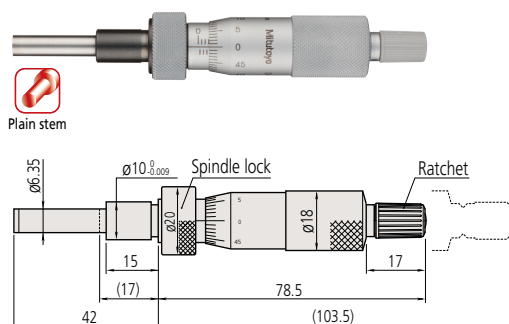
Micrometer Heads SERIES 150 — Medium-sized Standard Type

DIMENSIONS

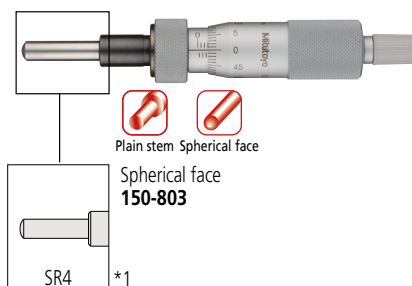
Plain Stem and Spindle Lock

Mass: 110 g

(): With spindle fully retracted. Unit: mm

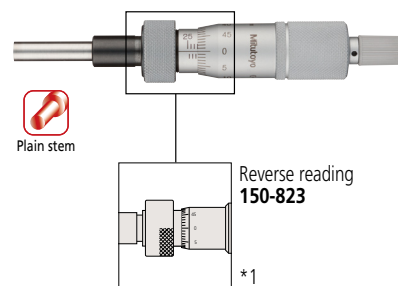


150-209



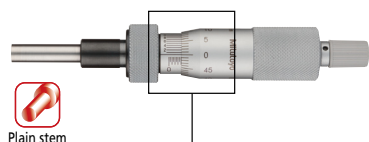
**Spherical face
150-803**

*1



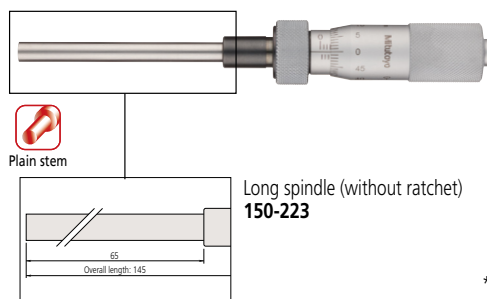
**Reverse reading
150-823**

*1



**Equipped with vernier scale
150-183**

*1

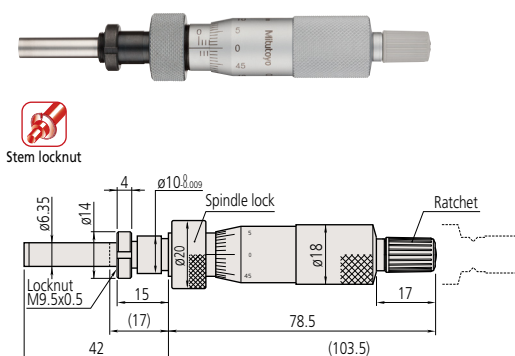


**Long spindle (without ratchet)
150-223**

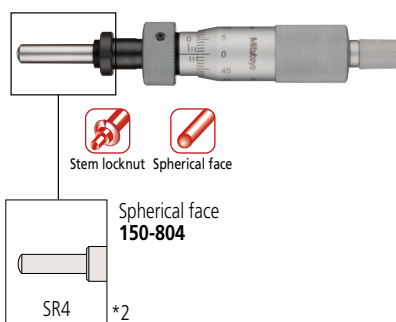
*1 Other dimensions are the same as **150-209**.

Stem Locknut and Spindle Lock

Mass: 115 g

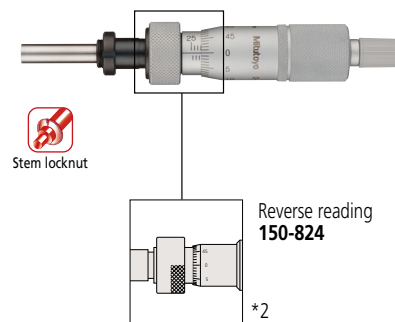


**Fixture thickness: 11.5 mm
150-210**



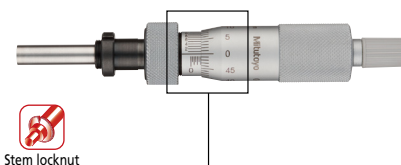
**Spherical face
150-804**

*2



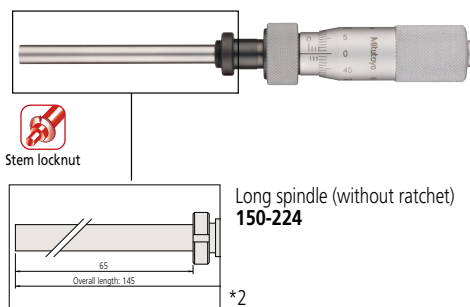
**Reverse reading
150-824**

*2



**Equipped with vernier scale
150-184**

*2



**Long spindle (without ratchet)
150-224**

*2

*2 Other dimensions are the same as **150-210**.

Micrometer Head

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

Micrometer Heads

SERIES 151 — Medium-sized Standard Type with 8 mm Diameter Spindle

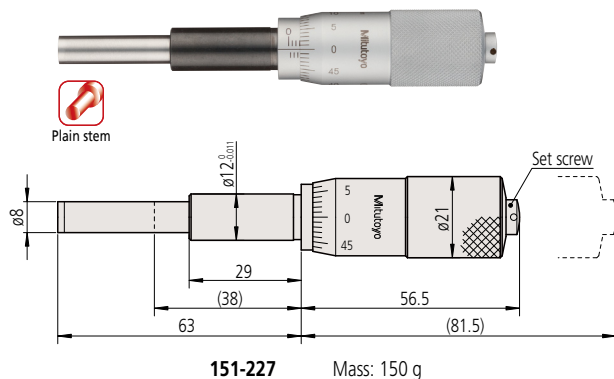
- Larger spindle (ø8 mm) for heavy-duty applications (normally ø6.35 mm).

Technical Data

Graduation: 0.01 mm, 0.001 mm, 0.001 in or 0.0001 in
Spindle pitch: 0.5 mm or 0.025 in

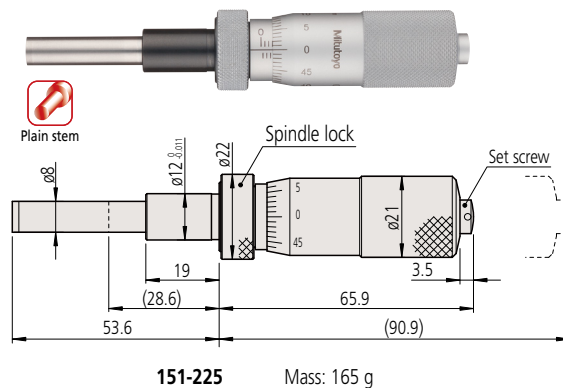
DIMENSIONS

Plain Stem

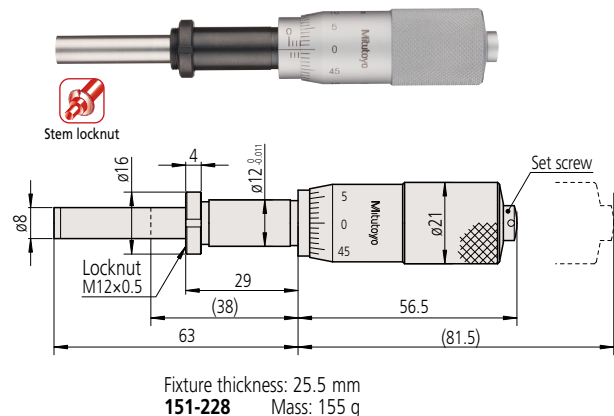


Plain Stem and Spindle Lock

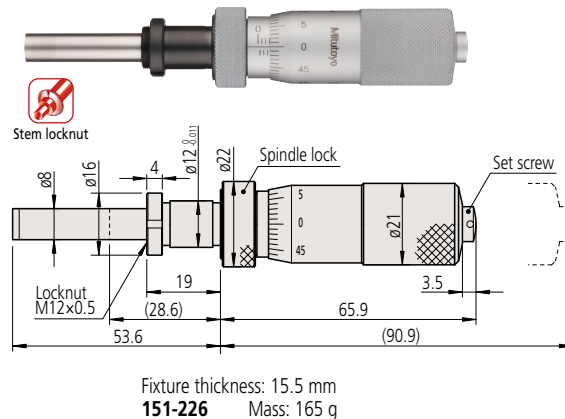
Unit: mm



Stem Locknut



Stem Locknut and Spindle Lock



(): With spindle fully retracted.

SPECIFICATIONS

Metric						
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Special features
151-224	25 mm	±2 µm	12 mm	Plain	Flat (carbide tip)	—
151-223				W/ clamp nut		
151-214**				Plain*		
151-213**				W/ clamp nut*		
151-222				Plain		
151-221				W/ clamp nut		
151-212**				Plain*		
151-211**				W/ clamp nut*		
151-227				Plain		
151-228				W/ clamp nut		
151-225	50 mm	±4 µm	12 mm	Plain*	Flat (carbide tip)	W/ vernier (0.001 mm)
151-226				W/ clamp nut*		
151-256				Plain		
151-255				W/ clamp nut		
151-260				Plain		
151-259				W/ clamp nut		

* with spindle lock ** made-to-order models

Inch						
Order No.	Stroke	Accuracy	Stem dia.	Stem	Spindle end	Special features
151-240	0.1 in	±0.0001 in	0.5 in	Plain	Flat (carbide tip)	—
151-239				W/ clamp nut		
151-238				Plain		
151-237				W/ clamp nut		
151-241**				Plain*		
151-242**				W/ clamp nut*		
151-243**				Plain*		
151-244**				W/ clamp nut*		
151-272				Plain		
151-271				W/ clamp nut		
151-245	0.2 in	±0.0002 in	0.5 in	Plain	Flat (carbide tip)	W/ vernier (0.0001 in)
151-246				W/ clamp nut		

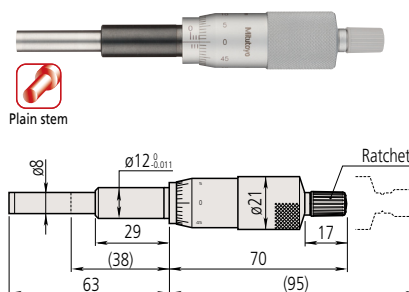
* with spindle lock ** made-to-order models

Micrometer Heads

SERIES 151 — Medium-sized Standard Type with 8 mm Diameter Spindle

DIMENSIONS

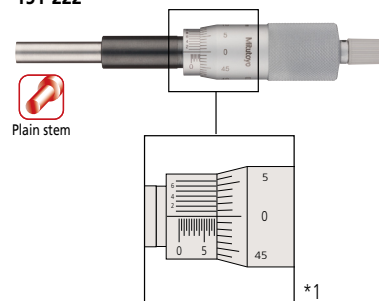
Plain Stem



151-224 Mass: 150 g

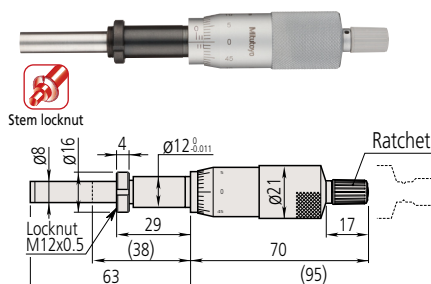
Equipped with vernier scale
151-222

Unit: mm



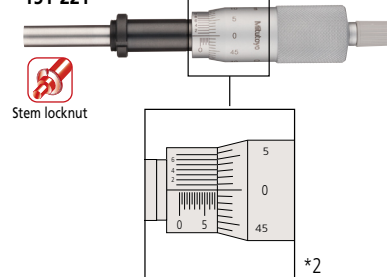
*1 Other dimensions are the same as **151-224**.

Stem Locknut



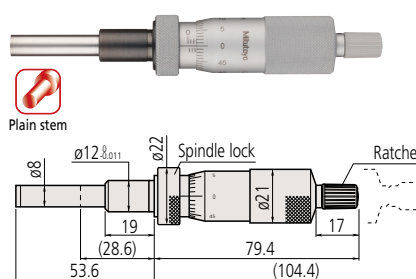
Fixture thickness: 25.5 mm
151-223 Mass: 155 g

Equipped with vernier scale
151-221



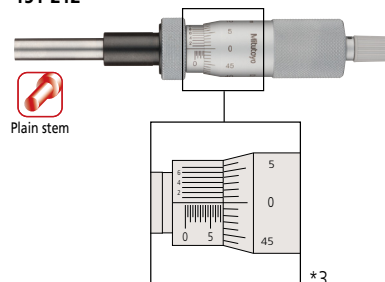
*2 Other dimensions are the same as **150-223**.

Stem Locknut and Spindle Lock



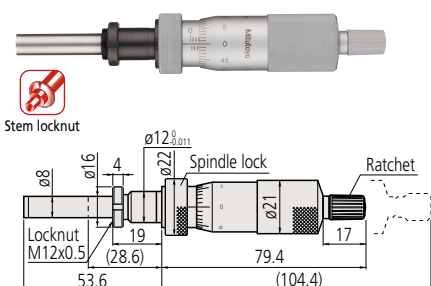
151-214 Mass: 160 g

Equipped with vernier scale
151-212



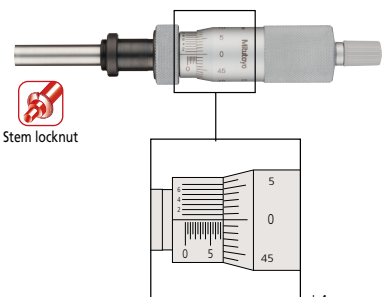
*3 Other dimensions are the same as **150-214**.

Stem Locknut and Spindle Lock



Fixture thickness: 15.5 mm
151-213 Mass: 165 g

Equipped with vernier scale
151-211



*4 Other dimensions are the same as **150-213**.
(): With spindle fully retracted.

Micrometer Head

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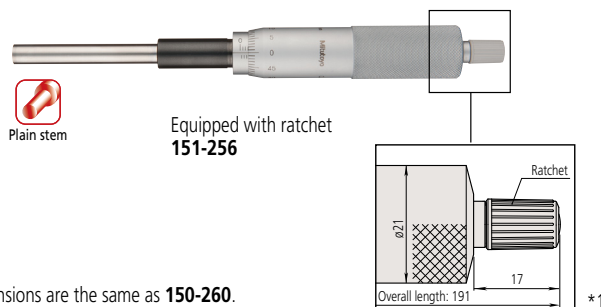
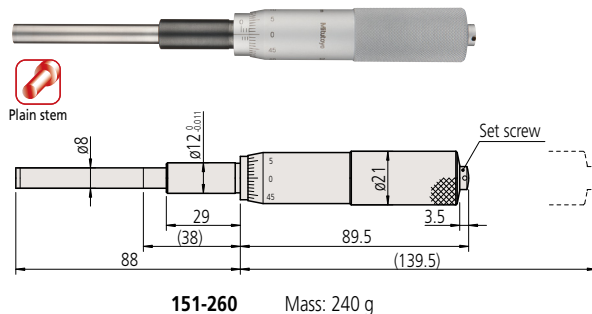
Micrometer Heads

SERIES 151 — Medium-sized Standard Type with 8 mm Diameter Spindle

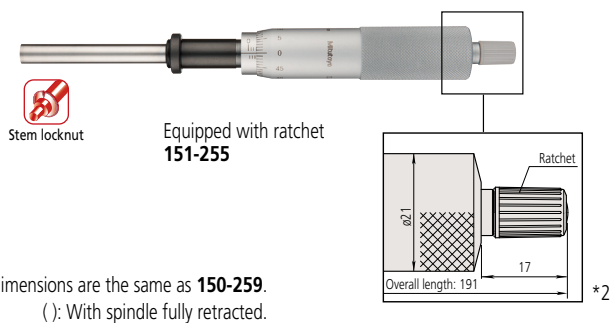
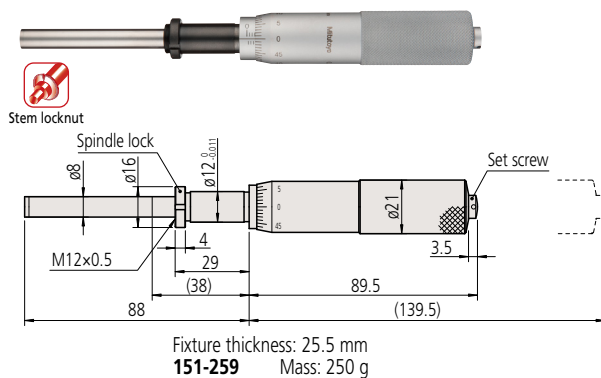
DIMENSIONS

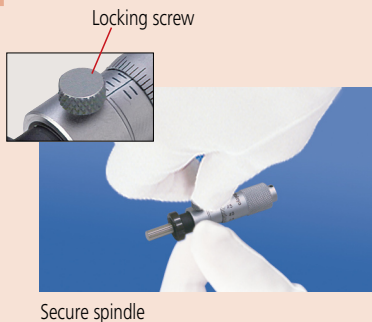
Plain Stem

Unit: mm



Stem Locknut



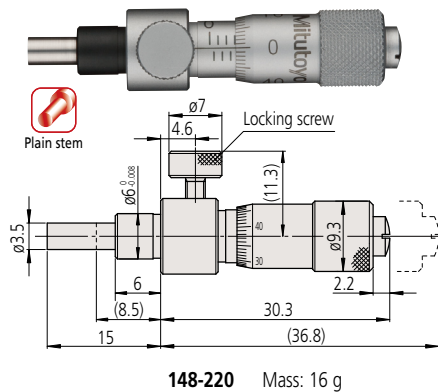


Micrometer Heads SERIES 148 — Locking-screw Type

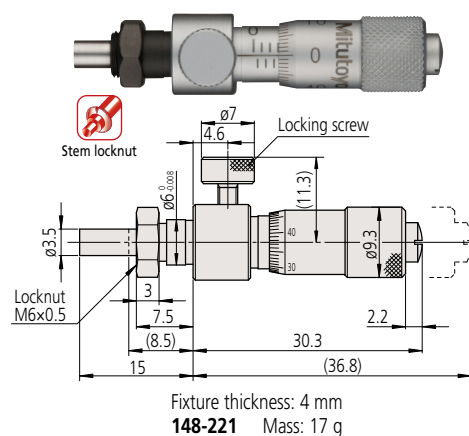
- Locking screw provides secure locking at any position of the spindle.
- Position of the locking screw is the same as the sleeve index line.

DIMENSIONS

Plain Stem

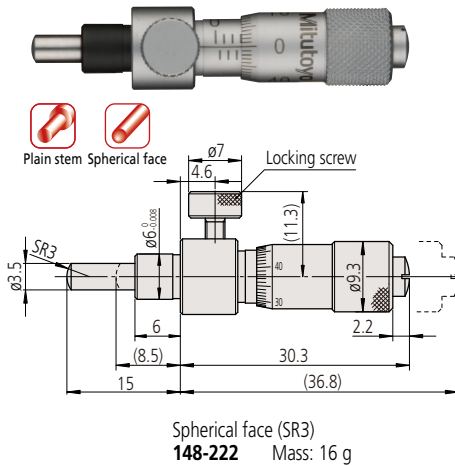


Stem Locknut

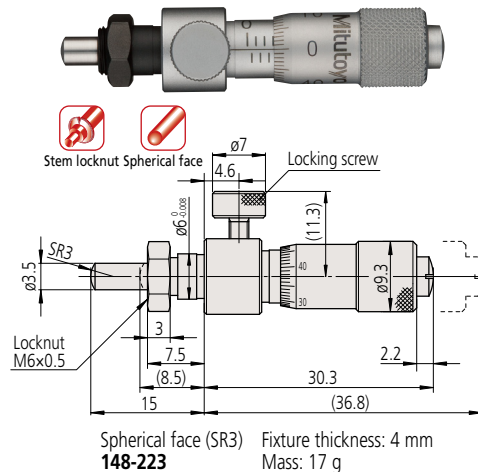


Unit: mm

Plain Stem



Stem Locknut



(): With spindle fully retracted.

SPECIFICATIONS

Metric							
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Graduation features
148-220	6.5 mm	0.01 mm	±5 µm	6 mm	Plain	Flat	Standard
148-221					W/ clamp nut	Flat	
148-222					Plain	Spherical (SR3)	
148-223	13 mm	0.01 mm	±2 µm	9.5 mm	W/ clamp nut	Flat	
148-150					Plain	Flat	
148-151					W/ clamp nut	Flat	
148-152	6.5 mm	0.01 mm	±2 µm	9.5 mm	Plain	Spherical (SR4)	
148-153					W/ clamp nut	Spherical (SR4)	
148-316					Plain	Flat	
148-317	6.5 mm	0.01 mm	±2 µm	9.5 mm	W/ clamp nut	Flat	
148-318					Plain	Spherical (SR4)	
148-319					W/ clamp nut	Spherical (SR4)	

Inch							
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Graduation features
148-230	0.25 in	0.0001 in	±0.00025 in	0.25 in	Plain	Flat	Standard
148-231					W/ clamp nut	Flat	
148-232					Plain	Spherical (SR3)	
148-233	0.5 in	0.001 in	±0.0001 in	0.375 in	W/ clamp nut	Flat	
148-160					Plain	Flat	
148-161					W/ clamp nut	Flat	
148-162	0.25 in	0.0001 in	±0.0001 in	0.375 in	Plain	Spherical (SR4)	
148-163					W/ clamp nut	Spherical (SR4)	
148-326					Plain	Flat	
148-327	0.25 in	0.0001 in	±0.0001 in	0.375 in	W/ clamp nut	Flat	
148-328					Plain	Spherical (SR4)	
148-329					W/ clamp nut	Spherical (SR4)	

Micrometer Head

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

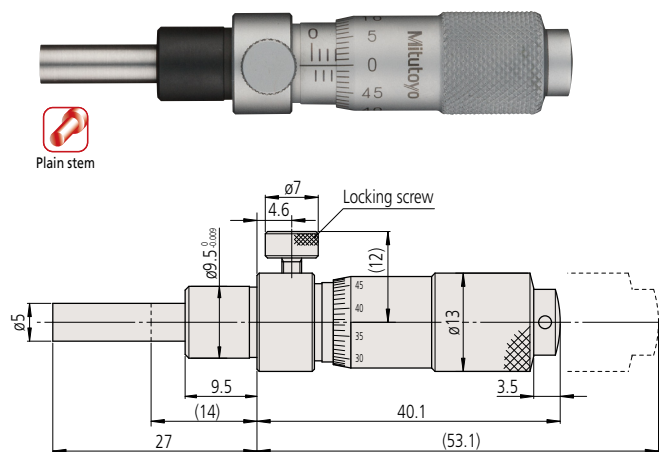
Micrometer Heads SERIES 148 — Locking-screw Type

DIMENSIONS

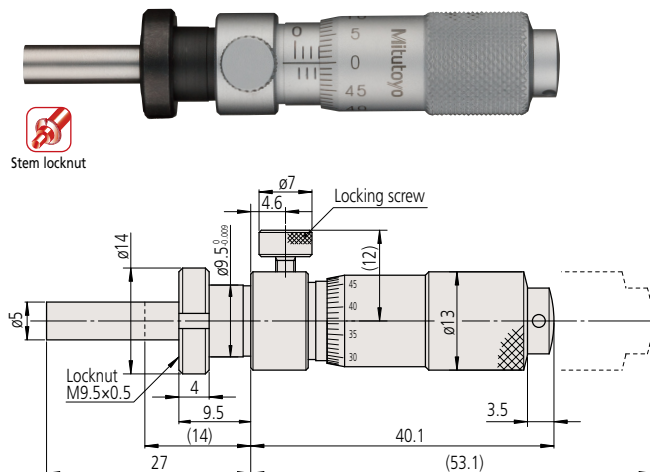
Plain Stem

Stem Locknut

Unit: mm



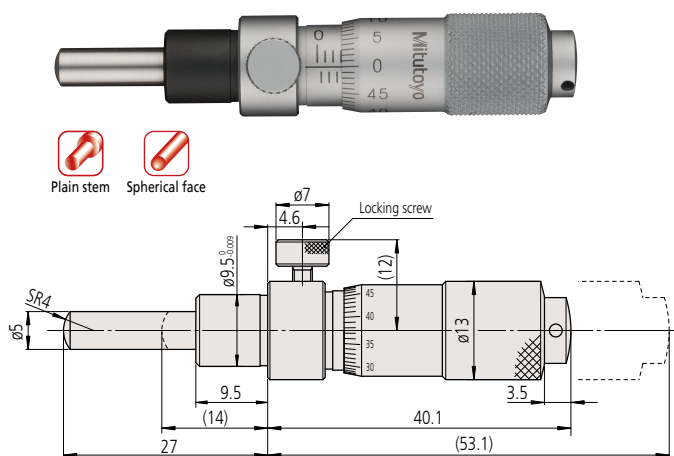
148-150 Mass: 40 g



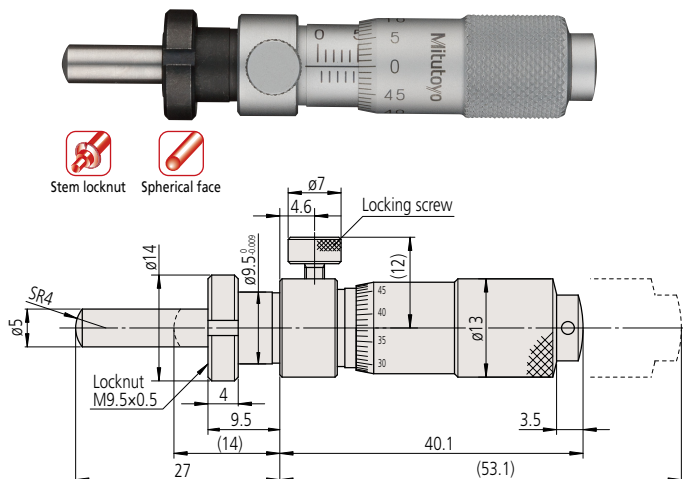
Fixture thickness: 6 mm
148-151 Mass: 43 g

Plain Stem

Stem Locknut



Spherical face (SR4)
148-152 Mass: 40 g



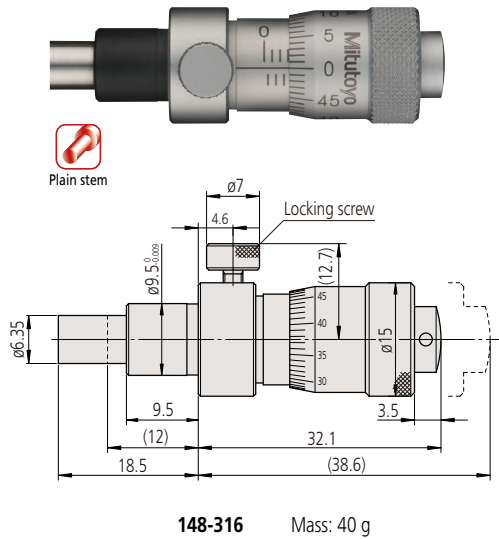
Spherical face (SR4) Fixture thickness: 6 mm
148-153 Mass: 43 g

(): With spindle fully retracted.

Micrometer Heads SERIES 148 — Locking-screw Type

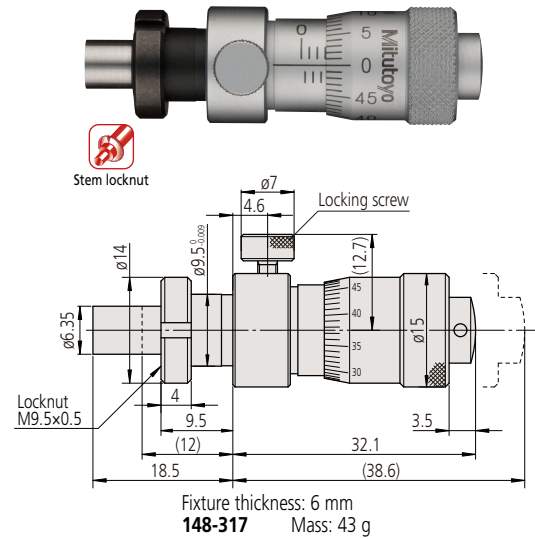
DIMENSIONS

Plain Stem

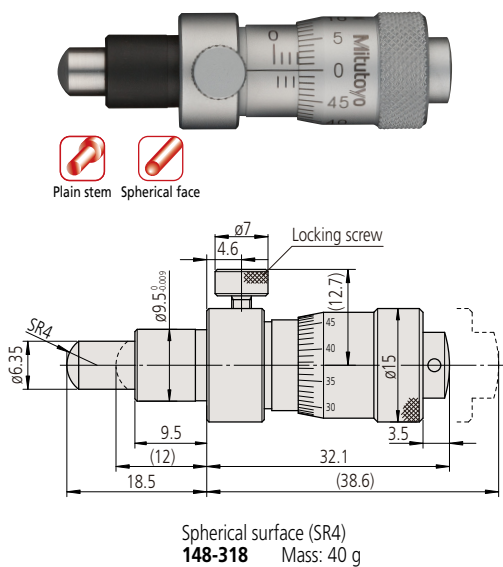


Stem Locknut

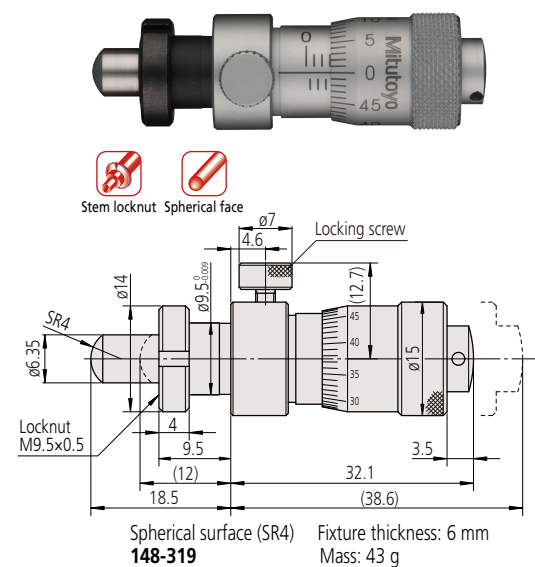
Unit: mm



Plain Stem



Stem Locknut



(): With spindle fully retracted.

Micrometer Head

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

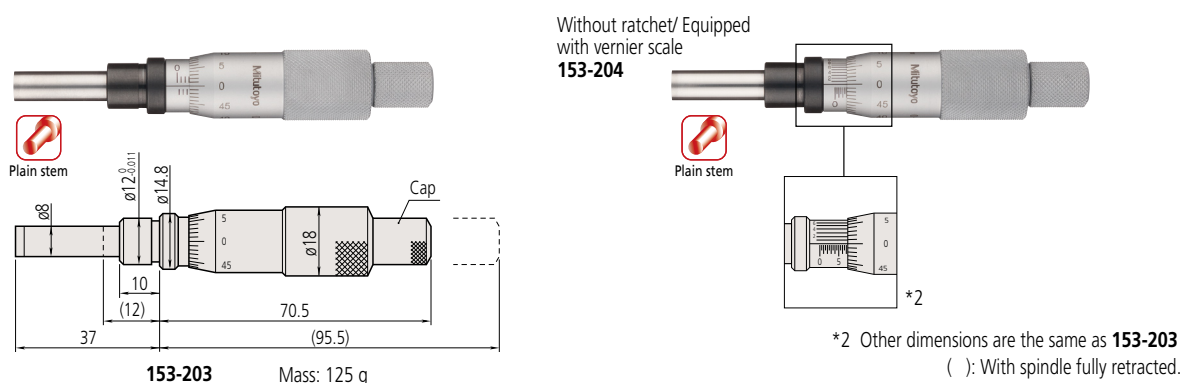
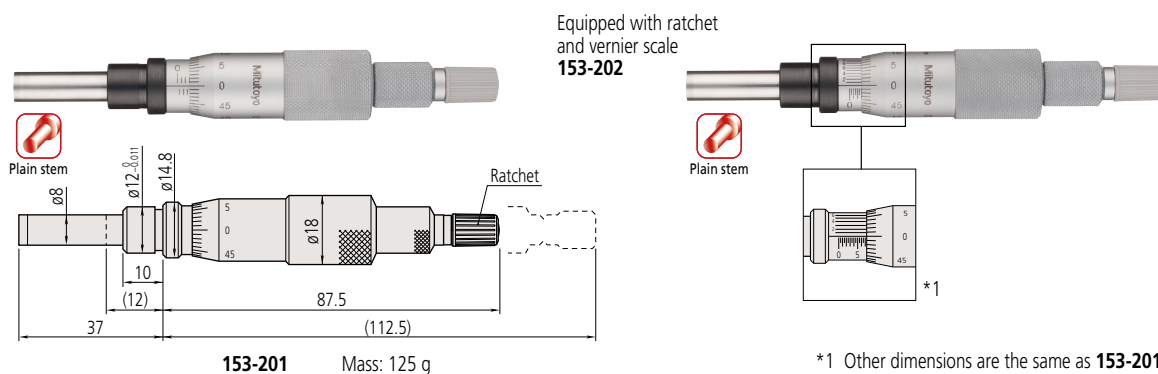
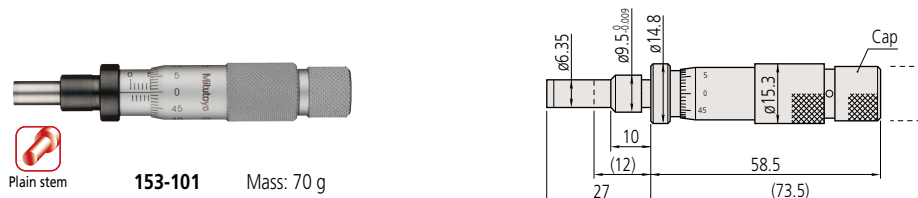
Micrometer Heads

SERIES 153 — Non-rotating Spindle Type

- The spindle translates without rotation.
- Torsion-free feed reduces workpiece deformation and wear.

DIMENSIONS

Unit: mm



SPECIFICATIONS

Metric

Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Spindle pitch	Graduation features
153-101	15 mm	0.01 mm	±3 μm	9.5 mm	Plain	Flat (carbide tip)	0.5 mm	Standard
153-201*	25 mm	0.001 mm		12 mm				w/ vernier (0.001 mm)
153-202*		0.01 mm						Standard
153-203		0.001 mm						w/ vernier (0.001 mm)
153-204								

Inch

Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Spindle pitch	Special features
153-108**	0.5 in	0.001 in	±0.00015 in	0.375 in	Plain	Flat (carbide tip)	0.025 in	w/ vernier (0.0001 in)
153-205*	1 in	0.0001 in		Standard				
153-206*		0.0001 in		w/ vernier (0.0001 in)				
153-207		0.001 in		Standard				
153-208		0.0001 in		w/ vernier (0.0001 in)				

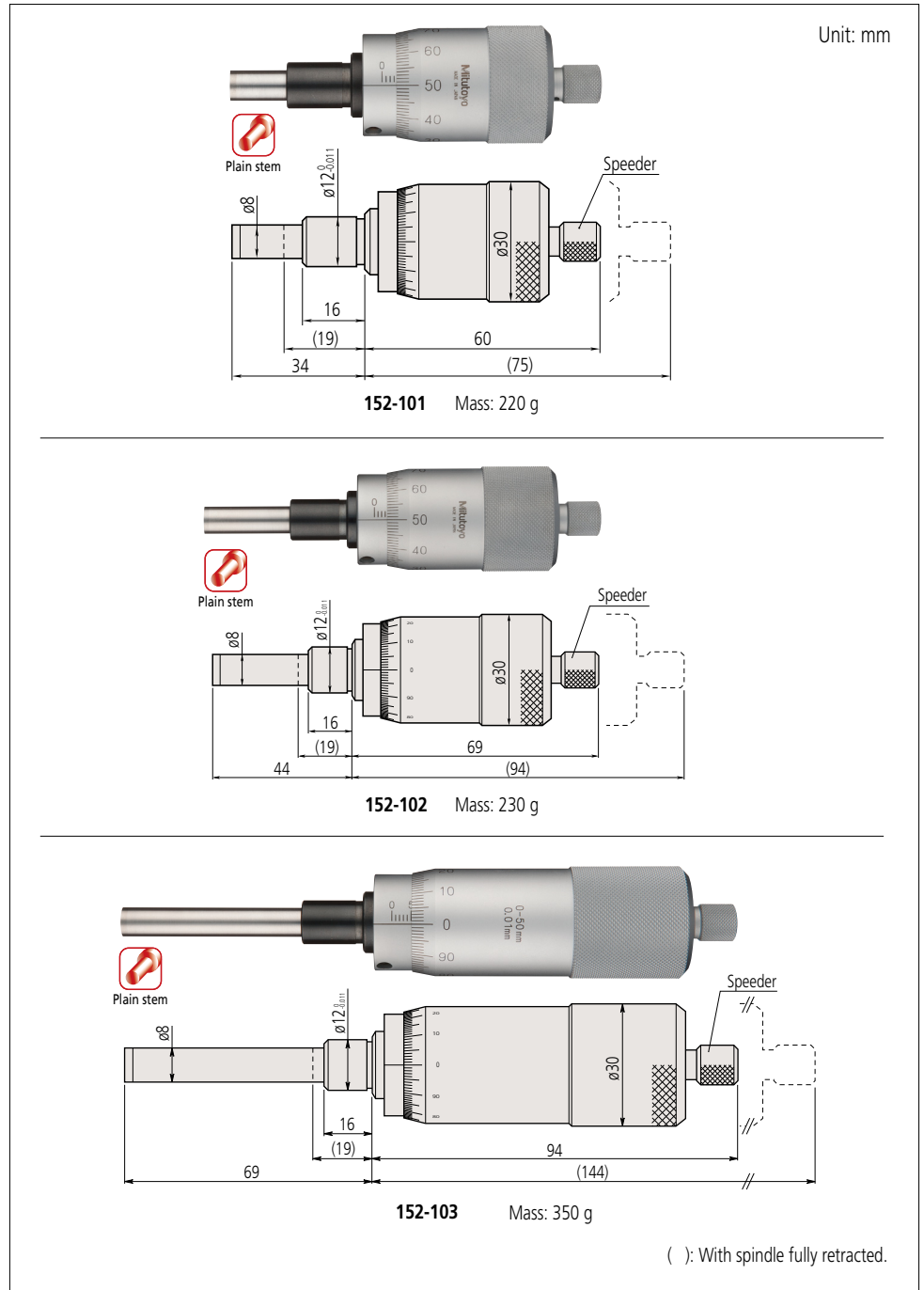
* with ratchet stop ** made-to-order model

Micrometer Heads SERIES 152 — Quick Spindle Feed of 1mm/rev

- Quick spindle feed of 1 mm/rev.

- The larger screw thread also provides greater load-bearing capacity than does a standard head.

DIMENSIONS



SPECIFICATIONS

Metric							
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Spindle pitch
152-101	15 mm	0.01 mm	±2 μm	12 mm	Plain	Flat (carbide tip)	1 mm
152-102	25 mm		±2 μm				
152-103	50 mm		±4 μm				

Micrometer Head

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

Micrometer Heads

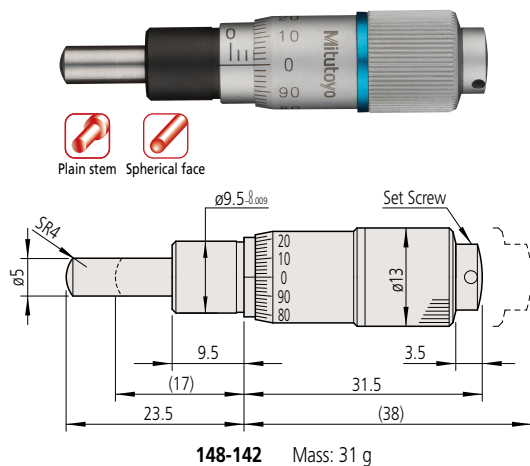
SERIES 148 — Fine Spindle Feed of 0.1 mm/rev

- Highly accurate 0.1 mm pitch thread is only one-fifth of that used for a standard-pitch head (0.5 mm).
- External dimensions are compatible with standard 0.5 mm pitch heads.

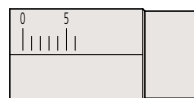
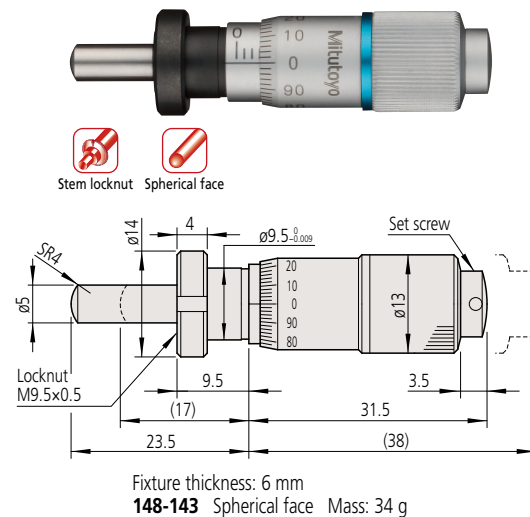
DIMENSIONS

Plain Stem

Unit: mm



Stem Locknut

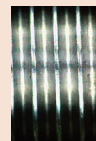


Sleeve marker

Spindle Pitch



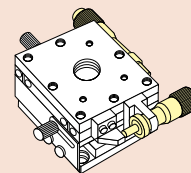
Pitch = 0.1 mm



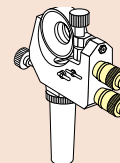
Pitch = 0.5 mm

Applications

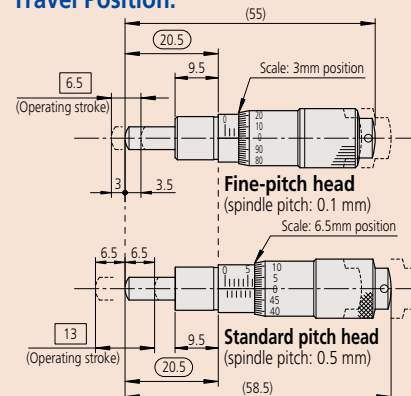
- Semiconductor-wafer positioning machinery and optical component alignment units, etc.
- Precision X-Y table positioning



- Precision adjustment of mirror in holder



Comparison of Mounting Dimensions Between a Fine-pitch Head and a Standard-pitch Head at the Midstroke Travel Position.



While the fine-pitch micrometer head has a measuring stroke of 6.5 mm, the standard head has a larger range of 13 mm.

When replacing a standard head, the fine-pitch type can use the common stroke in the middle of the spindle travel. The standard and compact types of fine-pitch head are otherwise completely interchangeable.

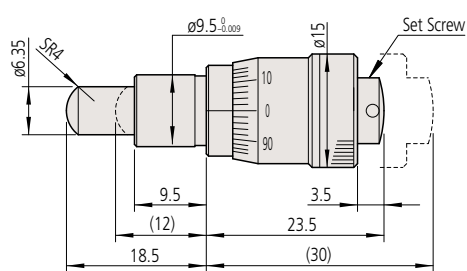
SPECIFICATIONS

Metric								
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Spindle pitch	Special features
148-142	6.5 mm	0.002 mm	±2 μm	9.5 mm	Plain	Spherical (SR4)	0.1 mm	—
148-143					w/ clamp nut			
148-342					Plain			Thicker & shorter thimble
148-343					w/ clamp nut			
148-242	5 mm	0.004 mm	±5 μm	6 mm	Plain	Spherical (SR3)		Small thimble diameter
148-243					w/ clamp nut			
148-244				3.5 mm	Plain	Spherical (SR1.5)		
148-245					w/ clamp nut			

Micrometer Heads SERIES 148 — Fine Spindle Feed of 0.1 mm/rev

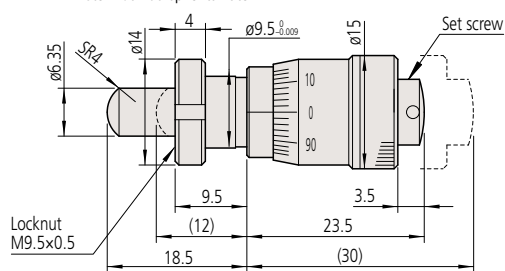
DIMENSIONS

Plain Stem



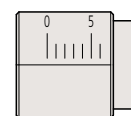
148-342 Mass: 29 g

Stem Locknut



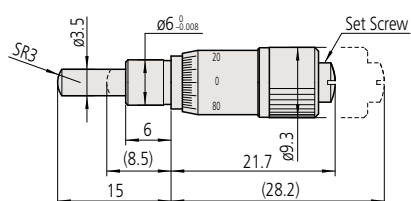
Fixture thickness: 6 mm
148-343 Spherical face Mass: 31 g

Unit: mm



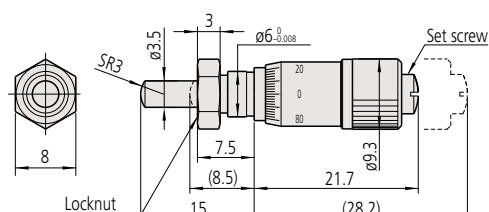
Sleeve marker

Plain Stem



148-242 Mass: 10 g

Stem Locknut

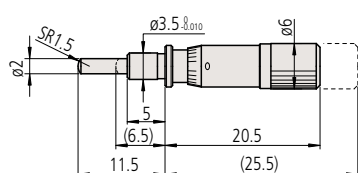


Fixture thickness: 4 mm
148-243 Spherical face Mass: 10 g



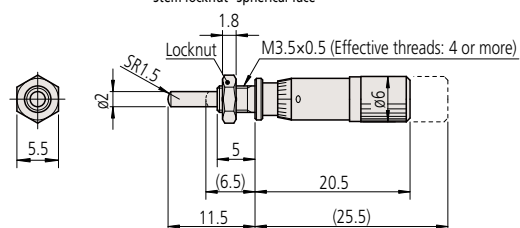
Sleeve marker

Plain Stem



148-244 Mass: 4 g

Stem Locknut



Fixture thickness: 3 mm
148-245 Spherical face Mass: 5 g



Sleeve marker

(): With spindle fully retracted.

Micrometer Head

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

Micrometer Heads SERIES 148 — Fine Spindle Feed of 0.25 mm/rev

- Miniature micrometer heads for ease of incorporating into machines.

DIMENSIONS

Plain Stem

Unit: mm

148-132 Mass: 30 g

148-322 Mass: 30 g

Stem Locknut

Fixture thickness: 6 mm

148-133 Mass: 35 g

148-323 Mass: 35 g

() : with spindle fully retracted

SPECIFICATIONS

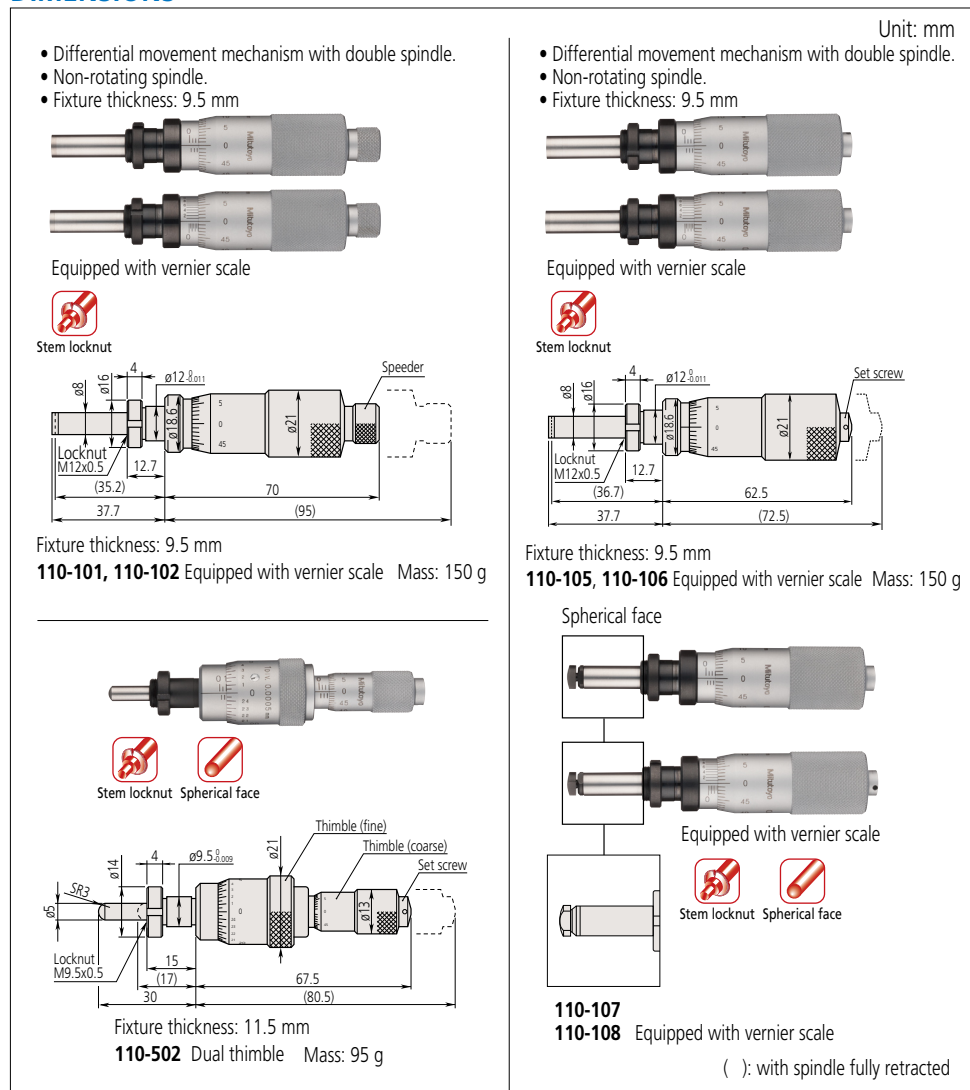
Metric							
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Spindle pitch
148-132	13 mm	0.01 mm	±2 μm	9.5 mm	Plain	Spherical (SR4)	0.25 mm
148-133					w/ clamp nut		
148-322	6.5 mm				Plain		
148-323					w/ clamp nut		

Micrometer Heads

SERIES 110 — Differential Screw Thread Translator (Extra-Fine Feed) Type

- The differential movement of spindle threads and nuts allows ultra-fine feeding.

DIMENSIONS



SPECIFICATIONS

Metric									
Order No.	Stroke		Graduation		Accuracy**	Stem dia.	Stem	Spindle end	Graduation features
110-101	2.5 mm		0.001 mm		±5 µm/±1.5 µm	12 mm	w/ clamp nut	Flat (carbide tip)	Standard
0.0001 mm			Fine						
0.001 mm			Standard						
0.0001 mm			Fine						
110-105	1 mm		0.001 mm		±3 µm/±1.5 µm			Spherical (SR10) (carbide tip)	Standard
0.0001 mm			Fine						
0.001 mm			Standard						
0.0001 mm			Fine						
110-107	Thimble (fine) 0.2 mm Thimble (coarse) 13 mm		Thimble (fine) 0.0005 mm		±3 µm/±1.5 µm	9.5 mm		Spherical (SR3)	Dual scales; 0.2 mm fine-feed stroke
Thimble (coarse) 0.01 mm									
Inch									
Order No.	Stroke		Graduation		Accuracy**	Stem dia.	Stem	Spindle end	Graduation features
110-111	0.05 in		0.00002 in		±0.00025 in/±0.00006 in	0.5 in	w/ clamp nut	Flat (carbide tip)	Standard
0.000005 in			Fine						
0.00002 in			Standard						
0.000005 in			Fine						
110-115*	0.02 in		0.000005 in		±0.00015 in/±0.00006 in			Spherical (SR10) (carbide tip)	Standard
0.00002 in			Fine						
0.000005 in			Standard						
0.000005 in			Fine						
110-504	Thimble (fine) 0.006 in		Thimble (fine) 0.00002 in		±0.00015 in/±0.00006 in	0.375 in		Spherical (SR3)	Dual scales; 0.2 mm/0.006 in fine-feed range
	Thimble (coarse) 0.5 in		Thimble (coarse) 0.001 in						

* made-to-order models

** Wide range / narrow range

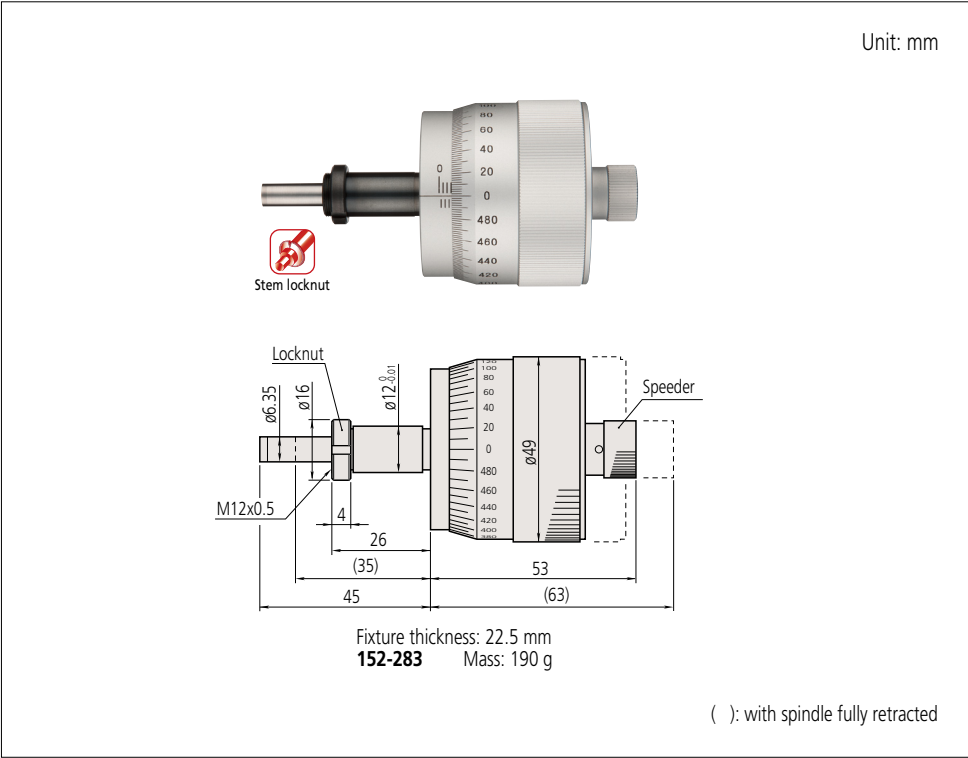
Micrometer Head

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

Micrometer Heads SERIES 152 — Large Thimble Type

- Large-diameter thimble for fine adjustment and positioning.

DIMENSIONS



SPECIFICATIONS

Metric								
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Spindle pitch	Graduation features
152-283	10 mm	0.002 mm	±2 μm	12 mm	w/ clamp nut	Flat (carbide tip)	0.5 mm	Standard
152-332	25 mm				Plain			Bidirectional
152-348	50 mm		±4 μm					
152-380	50 mm							
Inch								
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Spindle pitch	Graduation features
152-372	1 in	0.0001 in	±0.0001 in	0.5 in	w/ clamp nut	Flat (carbide tip)	0.025 in	Bidirectional
152-388	2 in							

DIMENSIONS

Unit: mm

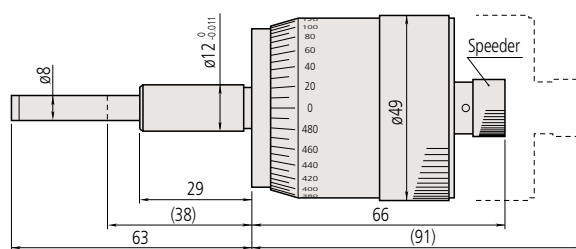


Plain stem



Plain stem

Bidirectional



152-332

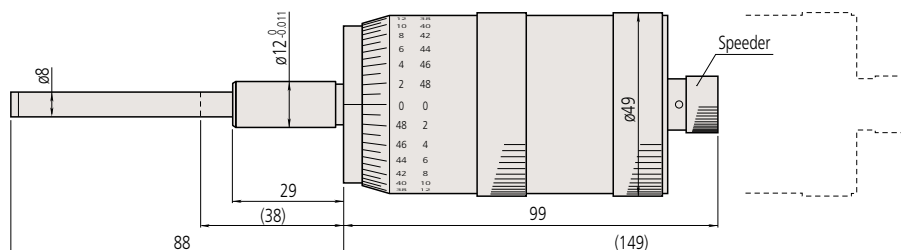
152-348

Bidirectional

Mass: 310 g



Plain stem



152-380

Mass: 460 g

(): with spindle fully retracted

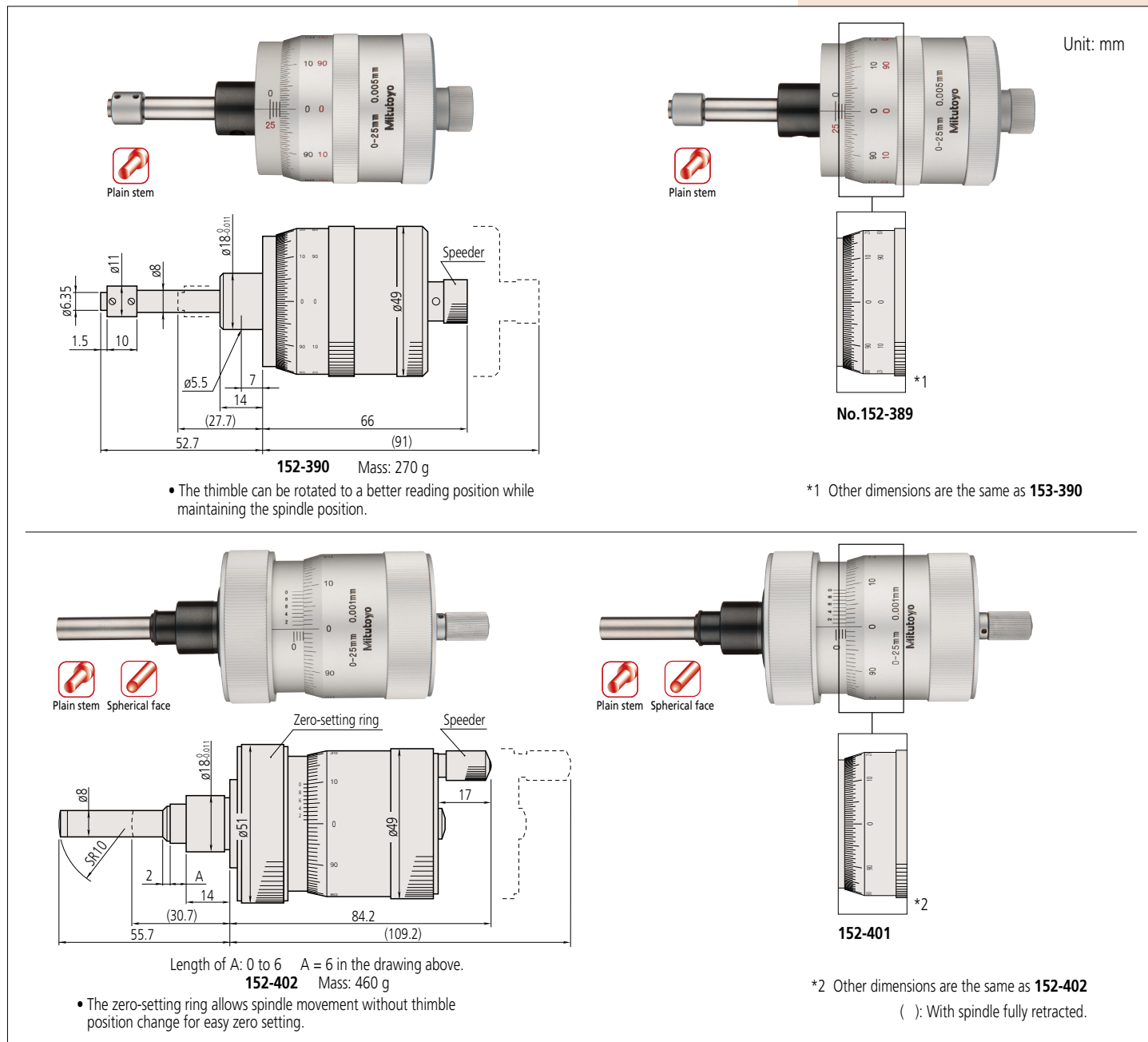
Micrometer Head

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

Micrometer Heads SERIES 152 — XY-Stage Type

- Micrometer heads especially designed for accurate cross-travel stage translation in X and Y axes.
- Spindle end: Flat form and hardened, or spherical with carbide tip (more than HRA90), lapped surface.

DIMENSIONS

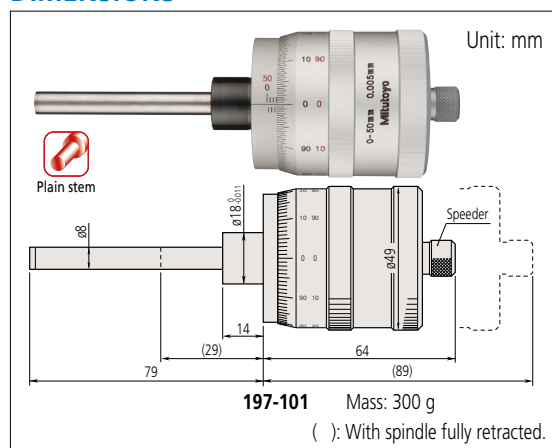


SPECIFICATIONS

Metric							
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle pitch	Graduation features
152-390	25 mm	0.005 mm	$\pm 2 \mu\text{m}$	18 mm	Plain	1 mm	for Y-axis, bidirectional
152-389		0.001 mm					for Y-axis, with Vernier
152-402		Vernier graduation					
152-401							
Inch							
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle pitch	Graduation features
152-392	1 in	0.0001 in	± 0.0001 in	0.709 in	Plain	0.025 in	for Y-axis, bidirectional
152-391							

Micrometer Heads SERIES 197 — Long Stroke Non-rotating Spindle

DIMENSIONS



- 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/rev (standard models: 0.5 mm/rev).

SPECIFICATIONS

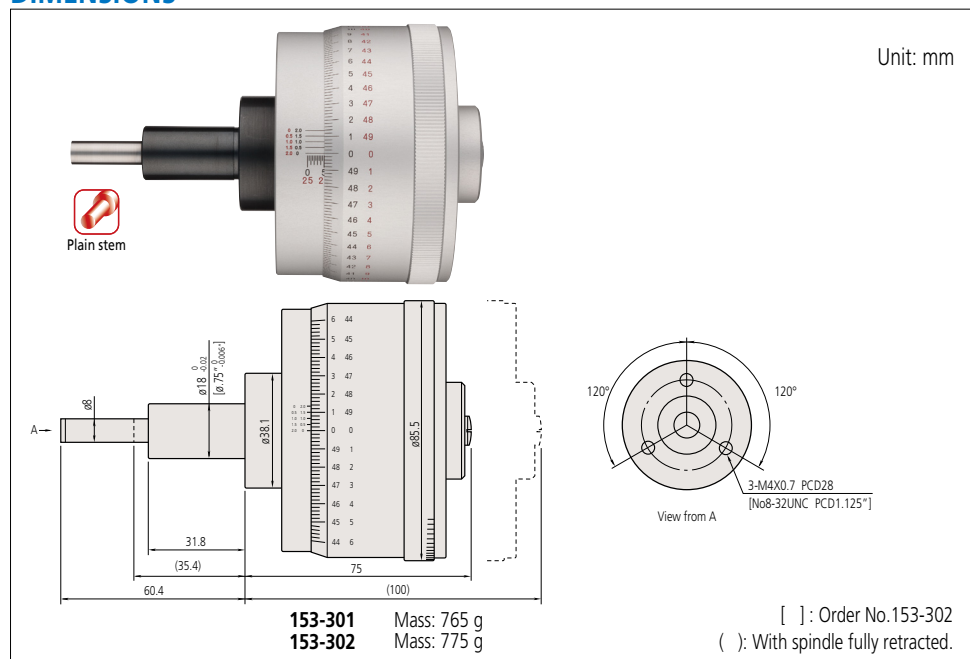
Metric									
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Spindle pitch	Graduation features	
197-101	50 mm	0.005 mm	$\pm 5 \mu\text{m}$	18 mm	Plain	Flat (carbide tip)	1 mm	Bidirectional	

Inch									
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Spindle pitch	Graduation features	
197-201	2 in	0.0002 in	± 0.0001 in	0.709 in	Plain	Flat (carbide tip)	0.05 in	Bidirectional	

Micrometer Heads SERIES 153 — High Accuracy and Resolution

- Fine graduation and high resolution model.
- Non-rotating spindle type.

DIMENSIONS



SPECIFICATIONS

Metric									
Order No.	Stroke	Graduation	Accuracy*	Stem dia.	Stem	Spindle end	Spindle pitch	Graduation features	
153-301	25 mm	0.0005 mm	$\pm 1/\pm 0.5 \mu\text{m}$	18 mm	Plain	Flat (carbide tip)	0.5 mm	Bidirectional	

Inch									
Order No.	Stroke	Graduation	Accuracy*	Stem dia.	Stem	Spindle end	Spindle pitch	Graduation features	
153-302	1 in	0.00001 in	± 0.00005 in/ ± 0.00003 in	0.75 in	Plain	Flat (carbide tip)	0.025 in	Bidirectional	

* Wide range / narrow range

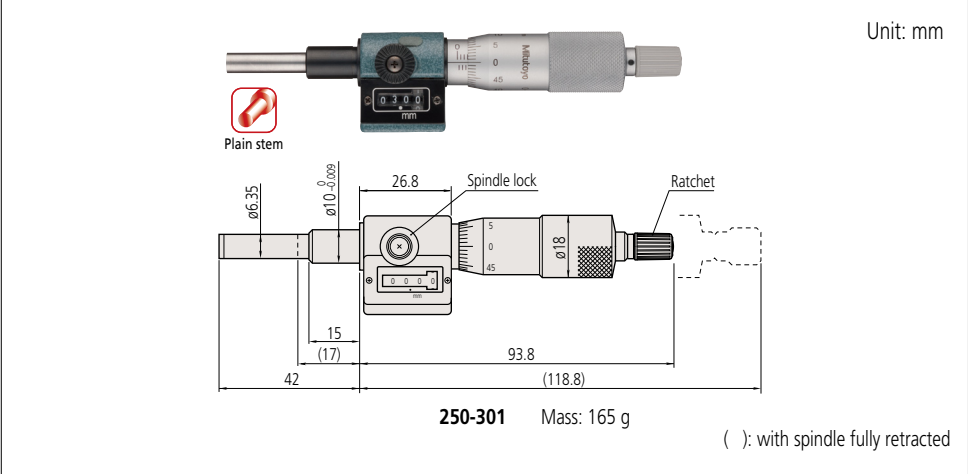
Micrometer Head

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

Micrometer Heads SERIES 250 — Digit Counter Type

- Digit counter for easy reading of spindle movement.
- Carbide measuring face.

DIMENSIONS



SPECIFICATIONS

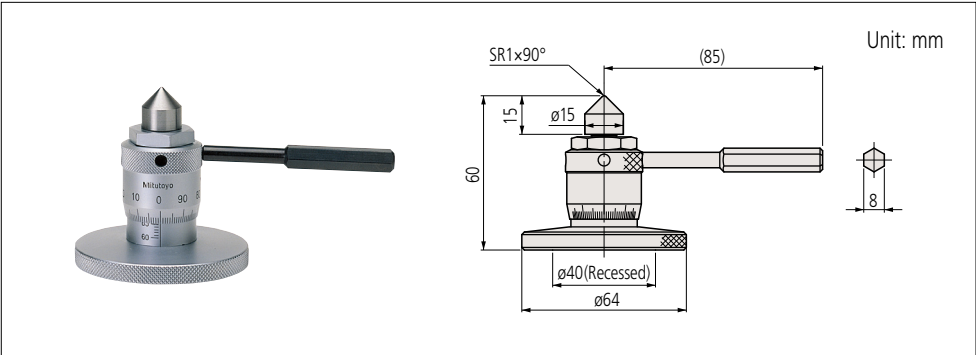
Metric								
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Spindle pitch	Graduation features
250-301	25 mm	0.01 mm	$\pm 2 \mu\text{m}$	10 mm	Plain	Flat (carbide tip)	0.5 mm	—

Inch								
Order No.	Stroke	Graduation	Accuracy	Stem dia.	Stem	Spindle end	Spindle pitch	Graduation features
250-312	1 in	0.0001 in	$\pm .0001$ in	0.375 in	Plain	Flat (carbide tip)	0.025 in	Vernier scale

Micro Jack SERIES 7

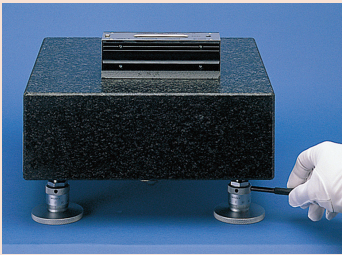
- Used for accurate leveling of machines, surface plates, and other precision instruments.
- Zero-setting is possible at any position.
- Easy adjustment under heavy load.

DIMENSIONS



SPECIFICATIONS

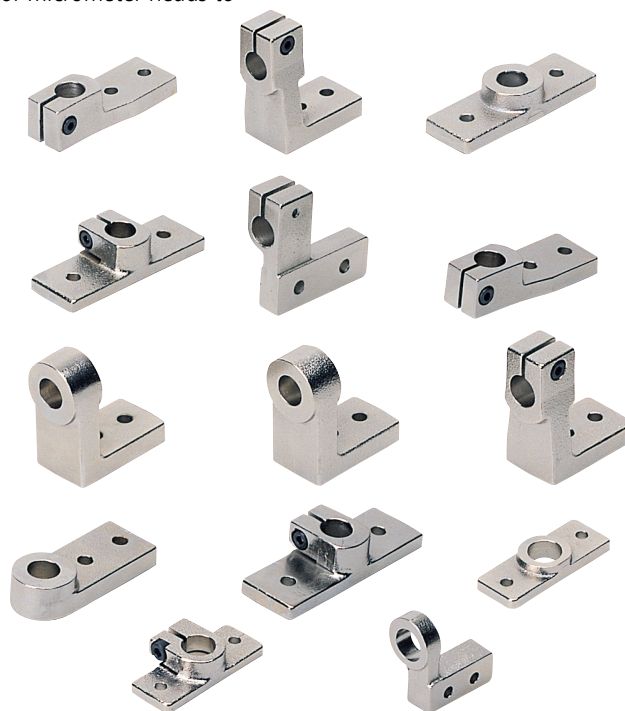
Metric				
Order No.	Stroke	Graduation	Handle power at the max. loading	Remarks
7850	60 - 75 mm	0.01 mm	90 N	Max. load: 400 kg



Micrometer Heads Mounting Fixtures

- Manufacturing brackets to mount micrometer heads for each particular application can be laborious and costly. Mitutoyo offers various types of fixtures for micrometer heads to

meet a wide range of applications. These fixtures are made of nickel-plated cast iron.

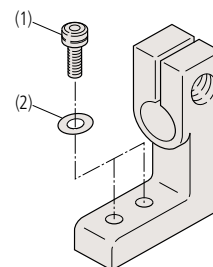
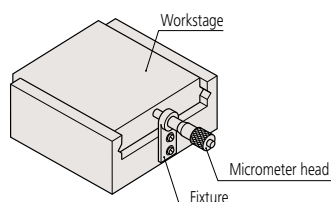


SPECIFICATIONS

Mounting hole size

Micrometer Head	Fixtures (Order No.)	Mounting hole size
148 Series	303560, 303562, 303564, 303566 303559, 303561, 303563, 303565	ø9.5×9.5 long for plain stem or stem locknut type micrometer heads
149 Series	303569, 303571, 303573, 303575 303568, 303570, 303572, 303574	ø9.5×15 long for plain stem or stem locknut type micrometer heads
150 Series	303579, 303581, 303583, 303585 303578, 303580, 303582, 303584	ø10×15 long for plain stem or stem locknut type micrometer heads

* Supplied with a socket head screw (M3 x 0.5 x 12) for fixtures to be used with a micrometer head without stem locknut (plain stem type micrometer head).



SPECIFICATIONS

Recommended socket head screws for the fixtures

Fixtures (Order No.)	Socket head screw (1)	Washer (2)
303559, 303560, 303561, 303562, 303563, 303564 303565, 303566	M3×0.5×8 M3×0.5×12	Small, Nominal dia.: 3 Small, Nominal dia.: 3
303568, 303569, 303570, 303571, 303572, 303573 303578, 303579, 303580, 303581, 303582, 303583	M4×0.7×10	Small, Nominal dia.: 4
303574, 303575 303584, 303585	M4×0.7×12	Small, Nominal dia.: 4

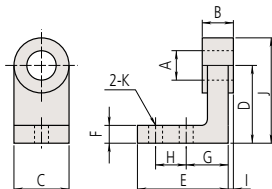
(): with spindle fully retracted

Micrometer Head

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

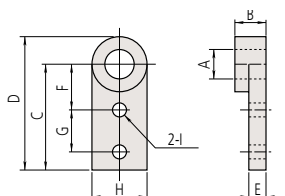
Micrometer Heads Mounting Fixtures

Fixtures for micrometer heads with stem locknut



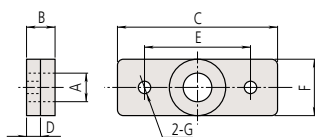
(Unit: mm)

Order No.	A	B	C	D	E	F	G	H	I	J	K
303559	ø9.5	6	15	20	24	5	11	8	0.5	27.5	ø3.4
303568		11.5	20	30	35	7	16	12	1.75	40	ø4.5
303578	ø10										



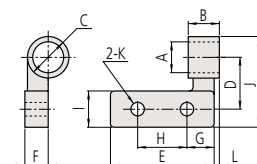
(Unit: mm)

Order No.	A	B	C	D	E	F	G	H	I
303563	ø9.5	6	30	37.5	4.5	15	10	15	ø3.4
303572		11.5	40	50	6.5	18	15	20	ø4.5
303582	ø10								



(Unit: mm)

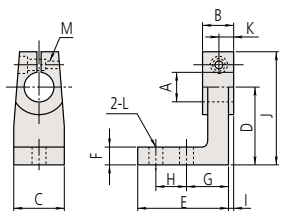
Order No.	A	B	C	D	E	F	G
303561	ø9.5	6	40	3.5	30	15	ø3.4
303570		11.5	60	5.5	40	20	ø4.5
303580	ø10						



(Unit: mm)

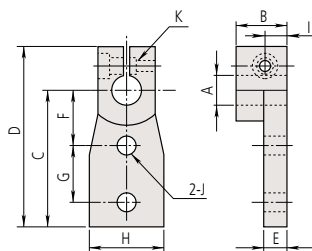
Order No.	A	B	C	D	E	F	G	H	I	J	K	L
303565	ø9.5	6		15	25		7.5	10	10	27.5	ø3.4	0.75
303574		11.5	ø15	20	40	8.5	10	20	15	35	ø4.5	1.25
303584	ø10											

Fixtures for plain stem type micrometer heads



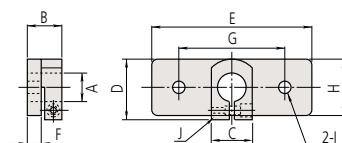
(Unit: mm)

Order No.	A	B	C	D	E	F	G	H	I	J	K	L	M
303560	ø9.5	9	15	20	23	5	11	8	1.5	3.25	4.5	ø3.4	
303569		14.5	20	30	35	7	16	12	3.25	4.25	7.25	ø4.5	M3×0.5
303579	ø10												



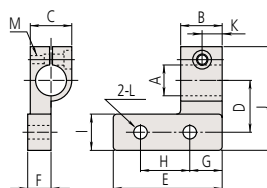
(Unit: mm)

Order No.	A	B	C	D	E	F	G	H	I	J	K
303564	ø9.5	9		4.25	4	15	10	15	4.5	ø3.4	
303573		14.5	30	5.25	6	18	15	20	7.25	ø4.5	M3×0.5
303583	ø10										



(Unit: mm)

Order No.	A	B	C	D	E	F	G	H	I	J
303562	ø9.5	9		20	40	3	30	15	ø3.4	
303571		14.5	15	22.5	60	5	40	20	ø4.5	M3×0.5
303581	ø10									

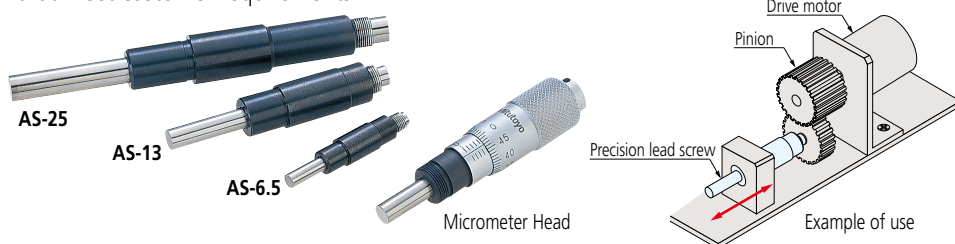


(Unit: mm)

Order No.	A	B	C	D	E	F	G	H	I	J	K	L	M
303566	ø9.5	9	15	25		7.5	10	10	32.5	4.5	ø3.4		
303575		14.5	15	20	40	8.5	10	20	15	40	7.25	ø4.5	M3×0.5
303585	ø10												

Precision Leadscrews

- Mitutoyo manufactures simple and less expensive precision leadscrews for precise positioning mechanisms and fine-feed mechanisms, in addition to standard micrometer heads.
- Mitutoyo also manufactures leadscrews with special specifications, such as 0.25 mm pitch, as well as those with the standard 0.5 mm feed pitch and with dimensions and forms that meet customer requirements.
- Durability: 100,000 operations are guaranteed (use condition: 4 kg load; 2 kg for **AS-6.5** and **BS-6.5**)
- Main applications:
 - Precision feed stages
 - Fine adjustment of optical elements (mirrors, prisms)
 - Fiber optic centering devices
 - Various assembly and adjustment jigs

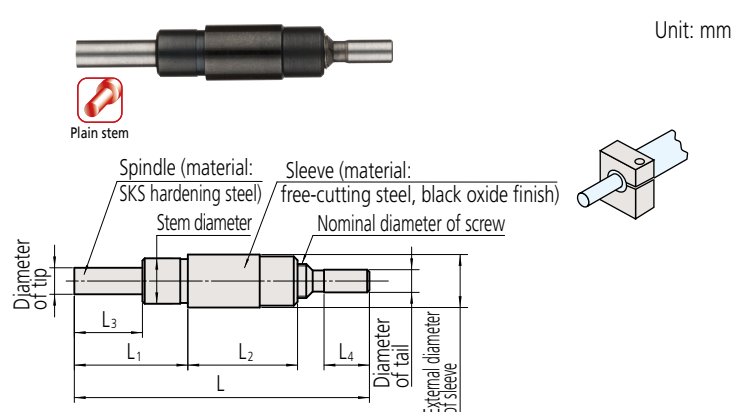


SPECIFICATIONS

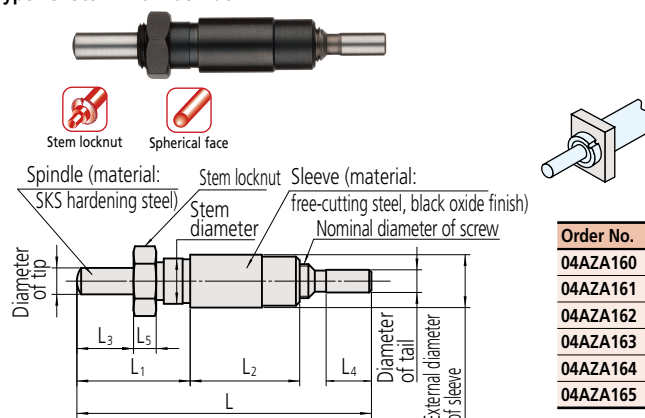
Order No.	Model	Stroke (mm)	Feed pitch (mm)	Feed accuracy (μm)	Stem diameter (mm)	Tip diameter (mm)	Tail diameter (mm)	Screw nominal diameter	Sleeve diameter (mm)	Measuring face	Mass	Others				
04AZA160	AS-6.5	6.5	0.5	±5	ø6 ^{+0.008} ₀	ø3.5	ø3 ^{+0.01} ₀	M4.5 x 0.5	ø7	Hardened	10 g	• AS type: Flat spindle tip without nut • BS type: Spherical spindle tip with nut				
04AZA161	BS-6.5										11 g					
04AZA162	AS-13	13		±2	ø9.5 ^{+0.009} ₀	ø5	ø5 ^{+0.012} ₀	M7.35 x 0.5	ø10.5		27 g					
04AZA163	BS-13										30 g					
04AZA164	AS-25	25								ø10 ^{+0.009} ₀	ø6.35		ø6 ^{+0.015} ₀	ø12	Carbide	61 g
04AZA165	BS-25															64 g

DIMENSIONS

Type AS: Plain Stem



Type BS: Stem with Locknut



Order No.	L	L1	L2	L3	L4	L5
04AZA160	39	15	14.5	9	6	—
04AZA161				7.5		3
04AZA162	57.5	25	21.5	15.5	8	—
04AZA163						4
04AZA164	96.5	42	39.5	27	10	—
04AZA165						4