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Micrometer Heads

SERIES 148 — Fine Spindle Feeding of 0.1mm/rev

FEATURES

- Fine spindle feeding of just 0.1mm/rev for extra-fine adjustment and positioning.
- External dimensions are compatible with conventional 0.5mm pitch heads.







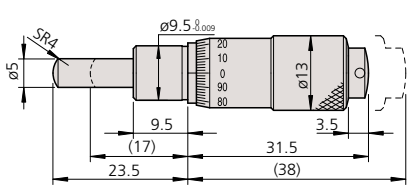
SPECIFICATIONS

Metric

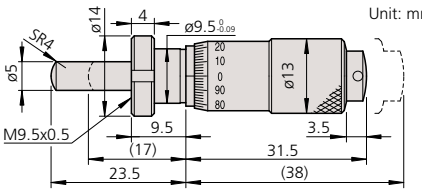
Range	Order No.	Accuracy	Stem dia.	Stem	Spindle face	Remarks
0 - 6.5mm	**148-142**	±2µm	9.5mm	Plain	Spherical (SR4)	—
0 - 6.5mm	**148-143**	±2µm	9.5mm	w/clamp nut	Spherical (SR4)	—
0 - 6.5mm	**148-342**	±2µm	9.5mm	Plain	Spherical (SR4)	Thicker & shorter thimble
0 - 6.5mm	**148-343**	±2µm	9.5mm	w/clamp nut	Spherical (SR4)	Thicker & shorter thimble
0 - 6.5mm	**148-242**	±5µm	6mm	Plain	Spherical (SR3)	Small thimble diameter
0 - 6.5mm	**148-243**	±5µm	6mm	w/clamp nut	Spherical (SR3)	Small thimble diameter

DIMENSIONS AND MASS

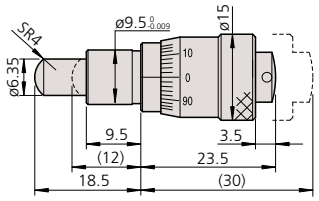
Unit: mm



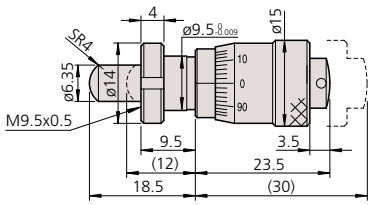
148-142 Mass: 31g



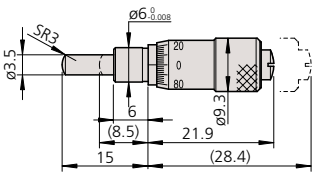
148-143 Mass: 34g



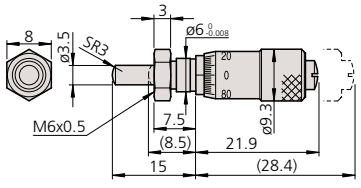
148-342 Mass: 29g



148-343 Mass: 31g



148-242 Mass: 10g



148-243 Mass: 10g

( ): when retracting the spindle until its stroke end.

Technical Data

Graduations: 0.002mm
Spindle pitch: 0.1mm
Spindle face: Spherical of SKS3 (more than HRC60), lapped surface
Scale surface: Hard-chrome plating
Fixture thickness for clamp nut: 6mm (**148-243**: 4mm)

Spindle pitch



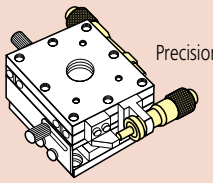
Screw Thread pitch= 0.1mm



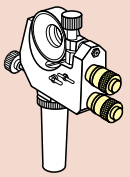
Screw Thread pitch= 0.5mm

Applications

Semiconductor wafer positioning machinery and optical component alignment units, etc.



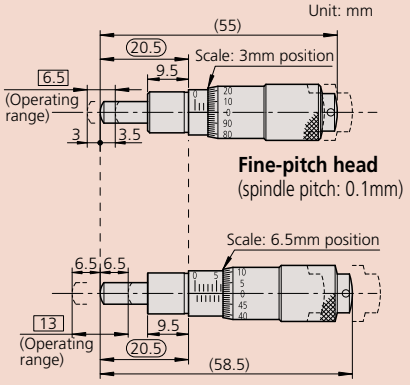
Precision X-Y table positioning



Precision adjustment of mirror in holder

Comparison of mounting dimensions between a standard fine-pitch head and a standard conventional pitch head at the mid-range travel position

Unit: mm



While the fine-pitch micrometer head has a measuring range of 6.5mm, the conventional head has a larger range of 13mm. When replacing a conventional head, the fine-pitch type can use the common range in the middle of the spindle travel. The standard and compact types of fine-pitch head are completely interchangeable.

Micrometer Heads

SERIES 148 — Fine Spindle Feeding of 0.25 mm / rev

Technical Data

Graduations: 0.01mm
Spindle pitch: 0.25mm
Spindle face: Spherical of SKS3 (more than HRC60), lapped surface
Scale surface: Hard-chrome plating
Fixture thickness for clamp nut: 6mm

FEATURES

- Fine spindle feeding of just 0.25mm/rev for fine adjustment and positioning.



148-132

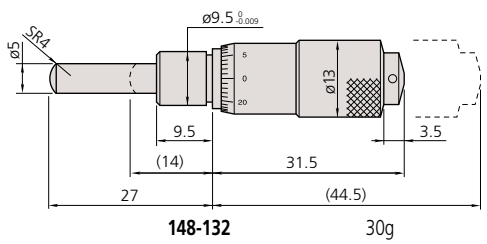
SPECIFICATIONS

Metric

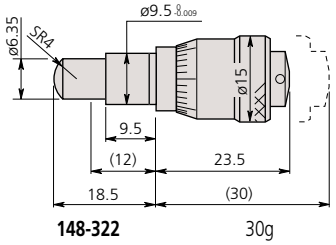
Range	Order No.	Accuracy	Stem dia.	Stem	Spindle face
0 - 13mm	**148-132**	2µm	9.5mm	Plain	Spherical (SR4)
0 - 13mm	**148-133**	2µm	9.5mm	w/clamp nut	Spherical (SR4)
0 - 6.5mm	**148-322**	2µm	9.5mm	Plain	Spherical (SR4)
0 - 6.5mm	**148-323**	2µm	9.5mm	w/ clamp nut	Spherical (SR4)

DIMENSIONS AND MASS

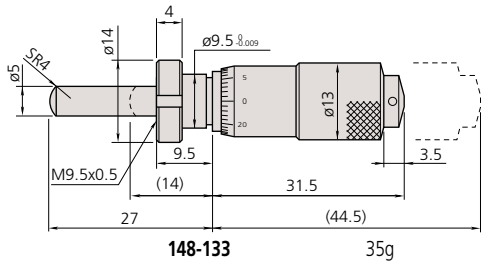
Unit: mm



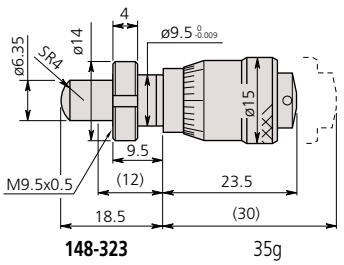
148-132 30g



148-322 30g



148-133 35g



148-323 35g

( ): when retracting the spindle until its stroke end.

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Micrometer Heads

SERIES 148 — Ultra-Small/Small Type

FEATURES

- Miniature micrometer heads for ease of incorporating into machines.



148-215 148-201 148-203

Technical Data

Graduations: 0.02mm (**148-215**, **148-216**), 0.01mm or .001"
Spindle pitch: 0.5mm
Spindle face: Flat or spherical of SKS3 (more than HRC60), lapped surface
Scale surface: Hard-chrome plating
Fixture thickness for clamp nut: 3mm (**148-216**, **148-218**), 4mm



Shown actual size

SPECIFICATIONS

Metric

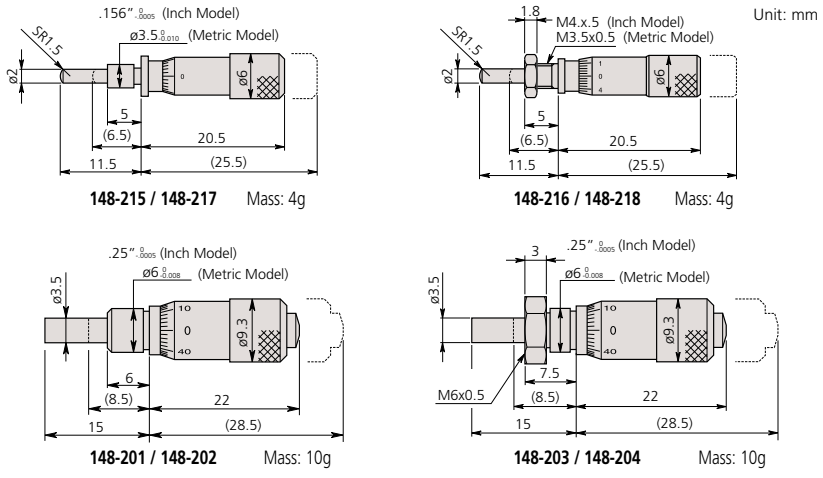
Range	Order No.	Accuracy	Stem dia.	Stem	Spindle face	Remarks
0 - 5mm	**148-215**	±5µm	3.5mm	Plain	Spherical (SR1.5)	—
0 - 5mm	**148-216**	±5µm	3.5mm	w/clamp nut	Spherical (SR1.5)	—
0 - 6.5mm	**148-201**	±5µm	6mm	Plain	Flat	—
0 - 6.5mm	**148-203**	±5µm	6mm	w/clamp nut	Flat	—
0 - 6.5mm	**148-205**	±5µm	6mm	Plain	Spherical (SR3)	—
0 - 6.5mm	**148-207**	±5µm	6mm	w/clamp nut	Spherical (SR3)	—
6.5 - 0 mm	**148-209**	±5µm	6mm	Plain	Flat	Reverse reading
6.5 - 0 mm	**148-211**	±5µm	6mm	w/ clamp nut	Flat	Reverse reading

Inch

Range	Order No.	Accuracy	Stem dia.	Stem	Spindle face	Remarks
0 - .2"	**148-217**	±5µm	.156"	Plain	Spherical (SR1.5)	—
0 - .2"	**148-218**	±5µm	.156"	w/clamp nut	Spherical (SR1.5)	—
0 -.25"	**148-202**	±5µm	.25"	Plain	Flat	—
0 -.25"	**148-204**	±5µm	.25"	w/clamp nut	Flat	—
0 -.25"	**148-206**	±5µm	.25"	Plain	Spherical (SR3)	—
0 -.25"	**148-208**	±5µm	.25"	w/clamp nut	Spherical (SR3)	—
.25 - 0"	**148-210**	±5µm	.25"	Plain	Flat	Reverse reading
.25 - 0"	**148-212**	±5µm	.25"	w/ clamp nut	Flat	Reverse reading

DIMENSIONS AND MASS

Unit: mm



148-215 / 148-217 Mass: 4g

148-216 / 148-218 Mass: 4g

148-201 / 148-202 Mass: 10g

148-203 / 148-204 Mass: 10g

( ): when retracting the spindle until its stroke end.

Micrometer Heads

SERIES 148 — Large Thimble Diameter for Easy Reading


148-301


148-303


148-305

FEATURES

- Easy reading due to the large thimble diameter. (Three types of thimble diameters can be selected.)

SPECIFICATIONS

Metric

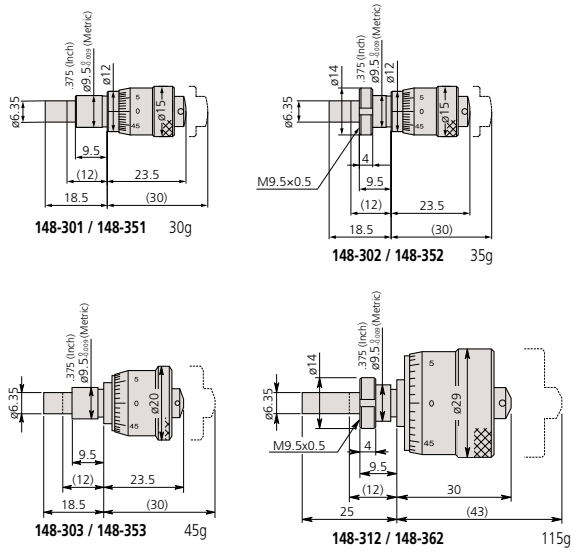
Range	Order No.	Accuracy	Stem dia.	Stem	Spindle face	Thimble Dia.
0 - 6.5mm	**148-301**	±2μm	9.5mm	Plain	Flat	15mm
0 - 6.5mm	**148-302**	±2μm	9.5mm	w/clamp nut	Flat	15mm
0 - 6.5mm	**148-303**	±2μm	9.5mm	Plain	Flat	20mm
0 - 6.5mm	**148-304**	±2μm	9.5mm	w/clamp nut	Flat	20mm
0 - 6.5mm	**148-305**	±2μm	9.5mm	Plain	Flat	29mm
0 - 6.5mm	**148-306**	±2μm	9.5mm	w/clamp nut	Flat	29mm
0 - 13mm	**148-307**	±2μm	9.5mm	Plain	Flat	15mm
0 - 13mm	**148-308**	±2μm	9.5mm	w/clamp nut	Flat	15mm
0 - 13mm	**148-309**	±2μm	9.5mm	Plain	Flat	20mm
0 - 13mm	**148-310**	±2μm	9.5mm	w/clamp nut	Flat	20mm
0 - 13mm	**148-311**	±2μm	9.5mm	Plain	Flat	29mm
0 - 13mm	**148-312**	±2μm	9.5mm	w/ clamp nut	Flat	29mm

Inch

Range	Order No.	Accuracy	Stem dia.	Stem	Spindle face	Thimble Dia.
0 - .25"	**148-351**	±.0001"	.375"	Plain	Flat	.59"
0 - .25"	**148-352**	±.0001"	.375"	w/clamp nut	Flat	.59"
0 - .25"	**148-353**	±.0001"	.375"	Plain	Flat	.79"
0 - .25"	**148-354**	±.0001"	.375"	w/clamp nut	Flat	.79"
0 - .25"	**148-355**	±.0001"	.375"	Plain	Flat	1.14"
0 - .25"	**148-356**	±.0001"	.375"	w/clamp nut	Flat	1.14"
0 - .5"	**148-357**	±.0001"	.375"	Plain	Flat	.59"
0 - .5"	**148-358**	±.0001"	.375"	w/clamp nut	Flat	.59"
0 - .5"	**148-359**	±.0001"	.375"	Plain	Flat	.79"
0 - .5"	**148-360**	±.0001"	.375"	w/clamp nut	Flat	.79"
0 - .5"	**148-361**	±.0001"	.375"	Plain	Flat	1.14"
0 - .5"	**148-362**	±.0001"	.375"	w/ clamp nut	Flat	1.14"

DIMENSIONS AND MASS

Unit: mm



( ): when retracting the spindle until its stroke end.

Technical Data

Graduations: 0.01mm or .001"
Spindle pitch: 0.5mm or .025"
Spindle face: Flat of SKS3 (more than HRC60), lapped surface
Scale surface: Hard-chrome plating
Fixture thickness for clamp nut: 6mm

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Micrometer Heads

SERIES 148 — Common Type in Small Size

SPECIFICATIONS

Metric

Range	Order No.	Accuracy	Stem dia.	Stem	Spindle face	Remarks
0 - 13mm	**148-104**	±2µm	9.5mm	Plain	Flat	—
0 - 13mm	**148-103**	±2µm	9.5mm	w/clamp nut	Flat	—
0 - 13mm	**148-121**	±2µm	9.5mm	Plain*	Flat	—
0 - 13mm	**148-120**	±2µm	9.5mm	w/clamp nut*	Flat	—
0 - 13mm	**148-801**	±2µm	9.5mm	Plain	Spherical (SR4)	—
0 - 13mm	**148-802**	±2µm	9.5mm	w/clamp nut	Spherical (SR4)	—
0 - 13mm	**148-803**	±2µm	9.5mm	Plain*	Spherical (SR4)	—
0 - 13mm	**148-804**	±2µm	9.5mm	w/clamp nut*	Spherical (SR4)	—
13mm - 0	**148-821**	±2µm	9.5mm	Plain	Flat	Reverse reading
13mm - 0	**148-822**	±2µm	9.5mm	w/clamp nut	Flat	Reverse reading
13mm - 0	**148-823**	±2µm	9.5mm	Plain*	Flat	Reverse reading
13mm - 0	**148-824**	±2µm	9.5mm	w/ clamp nut*	Flat	Reverse reading

*with spindle lock

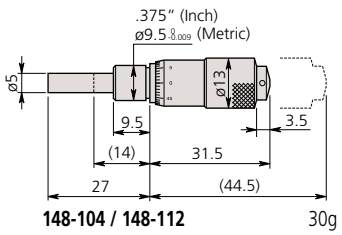
Inch

Range	Order No.	Accuracy	Stem dia.	Stem	Spindle face	Remarks
0 - .5"	**148-112**	±.0001"	.375"	Plain	Flat	—
0 - .5"	**148-111**	±.0001"	.375"	w/clamp nut	Flat	—
0 - .5"	**148-123**	±.0001"	.375"	Plain*	Flat	—
0 - .5"	**148-122**	±.0001"	.375"	w/clamp nut*	Flat	—
0 - .5"	**148-811**	±.0001"	.375"	Plain	Spherical (SR4)	—
0 - .5"	**148-812**	±.0001"	.375"	w/clamp nut	Spherical (SR4)	—
0 - .5"	**148-813**	±.0001"	.375"	Plain*	Spherical (SR4)	—
0 - .5"	**148-814**	±.0001"	.375"	w/clamp nut*	Spherical (SR4)	—
.5" - 0	**148-831**	±.0001"	.375"	Plain	Flat	Reverse reading
.5" - 0	**148-832**	±.0001"	.375"	w/clamp nut	Flat	Reverse reading
.5" - 0	**148-833**	±.0001"	.375"	Plain*	Flat	Reverse reading
.5" - 0	**148-834**	±.0001"	.375"	w/ clamp nut*	Flat	Reverse reading

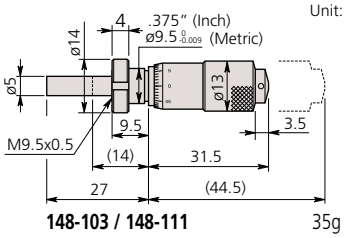
*with spindle lock

DIMENSIONS AND MASS

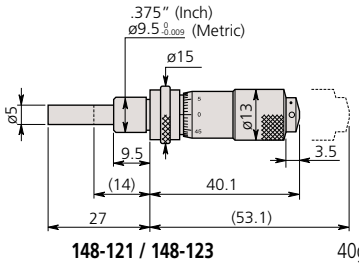
Unit: mm



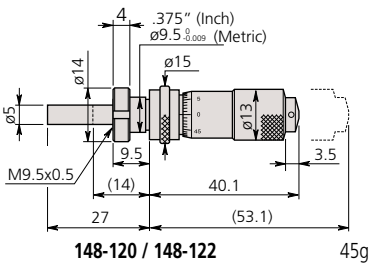
148-104 / 148-112 30g



148-103 / 148-111 35g



148-121 / 148-123 40g



148-120 / 148-122 45g

( ): when retracting the spindle until its stroke end.



148-103



148-104



148-121



148-120

Technical Data

Graduations: 0.01mm or .001"
Spindle pitch: 0.5mm
Spindle face: Flat or spherical of SKS3 (more than HR60), lapped surface
Scale surface: Hard-chrome plating
Fixture thickness for clamp nut: 6mm

Micrometer Heads

SERIES 148 — Common Type in Small Size with Zero-Adjustable Thimble



148-503



148-504

Technical Data

Graduations: 0.01mm or .001"
Spindle pitch: 0.5mm
Spindle face: Flat or spherical of SKS3 (more than HRC60), lapped surface
Scale surface: Hard-chrome plating
Fixture thickness for clamp nut: 6mm

FEATURES

- The thimble can be set to zero at any position by loosening the setscrew

SPECIFICATIONS

Metric

Range	Order No.	Accuracy	Stem dia.	Stem	Spindle face	Remarks
0 - 13mm	**148-503**	±2µm	9.5mm	Plain	Flat	—
0 - 13mm	**148-513**	±2µm	9.5mm	Plain	Flat	Stainless steel throughout
0 - 13mm	**148-508**	±2µm	9.5mm	w/clamp nut	Flat	—
0 - 13mm	**148-506**	±2µm	9.5mm	Plain*	Flat	—
0 - 13mm	**148-504**	±2µm	9.5mm	w/clamp nut*	Flat	—
0 - 13mm	**148-853**	±2µm	9.5mm	Plain	Spherical (SR4)	—
0 - 13mm	**148-854**	±2µm	9.5mm	w/clamp nut*	Spherical (SR4)	—
13mm - 0	**148-863**	±2µm	9.5mm	Plain	Flat	Reverse reading
13mm - 0	**148-864**	±2µm	9.5mm	w/ clamp nut*	Flat	Reverse reading

*with spindle lock

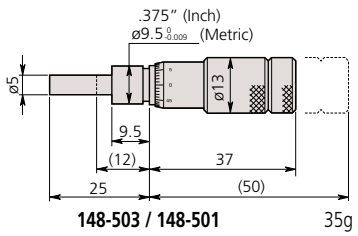
Inch

Range	Order No.	Accuracy	Stem dia.	Stem	Spindle face	Remarks
0 - .5"	**148-501**	±.0001"	.375"	Plain	Flat	—
0 - .5"	**148-511**	±.0001"	.375"	Plain	Flat	Stainless steel throughout
0 - .5"	**148-507**	±.0001"	.375"	w/clamp nut	Flat	—
0 - .5"	**148-505**	±.0001"	.375"	Plain*	Flat	—
0 - .5"	**148-502**	±.0001"	.375"	w/clamp nut*	Flat	—
0 - .5"	**148-851**	±.0001"	.375"	Plain	Spherical (SR4)	—
0 - .5"	**148-852**	±.0001"	.375"	w/clamp nut*	Spherical (SR4)	—
.5" - 0	**148-861**	±.0001"	.375"	Plain	Flat	Reverse reading
.5" - 0	**148-862**	±.0001"	.375"	w/ clamp nut*	Flat	Reverse reading

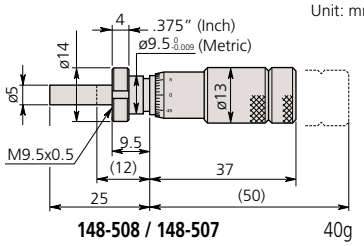
*with spindle lock

DIMENSIONS AND MASS

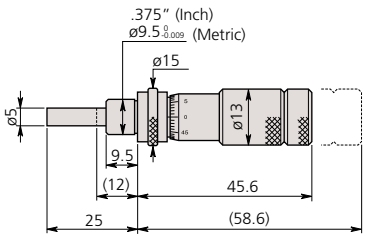
Unit: mm



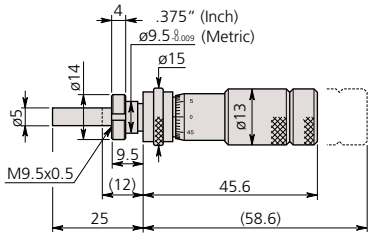
148-503 / 148-501 35g



148-508 / 148-507 40g



148-506 / 148-505 35g



148-504 / 148-502 40g

( ): when retracting the spindle until its stroke end.

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