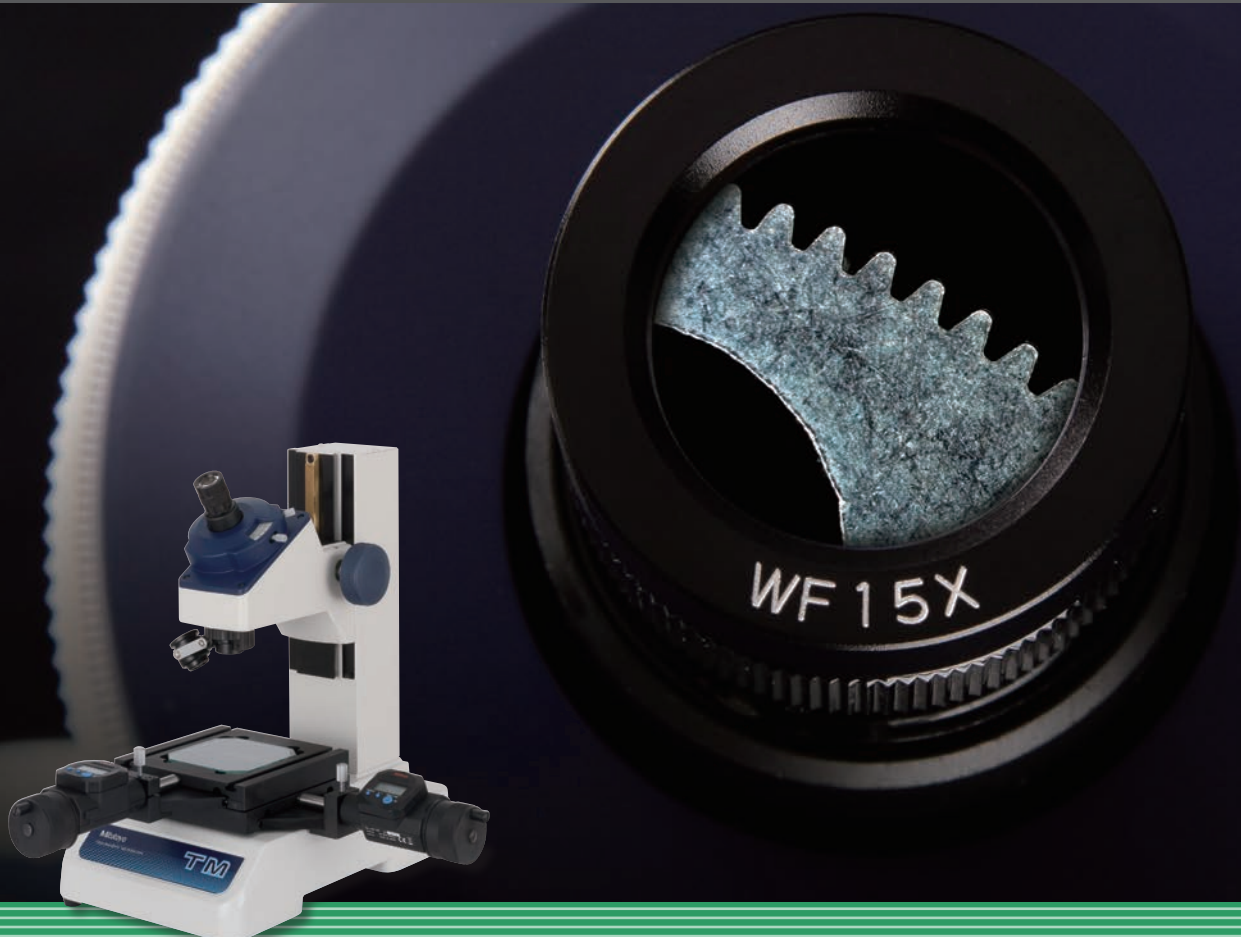




## Toolmakers' Microscopes TM Series

Optical Measuring



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# Bright and Clear Field of View. Best Performance in Small-model Class.

- Newly designed LED illuminators provide enhanced observation for higher accuracy and resolution.



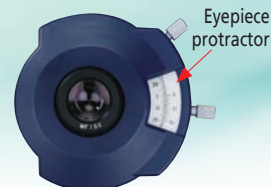
Conventional illumination



Newly designed LED illumination



Optional LED circular illuminator available for applications requiring all-round lighting.  
**176-208A**



A vernier scale mounted outside the eyepiece enables simple angle measurement.

## Optional Accessories

Eyepieces and Objectives see page 4

Order No.	Description
<b>64AAB429</b>	MOTICAM 2, 2.0 MEGAPIXEL-1/3" CMOS, USB
<b>64AAB529</b>	MOTICAM 3+, 3.0 MEGAPIXEL-1/2" CMOS, USB
<b>64AAB431</b>	MOTICAM 5, 5.0 MEGAPIXEL-1/2.5" CMOS, USB
<b>64AAB526</b>	MOTICAM 1080, 2.0 MEGAPIXEL-1/2.8" CMOS, USB/HDMI
<b>63AAA060</b>	.37x C-Mount Eyetube Adapter



**LED ring light**  
**64AAB214**



**Digimatic Micrometer Heads**  
(LCD readout)



**164-164**  
(Two units are required for an XY table.)

## SPECIFICATIONS

Model No.		TM-505B	TM-A505B	TM-1005B	TM-A1005B
Order No.		176-818A	176-820A	176-819A	176-821A
Optical tube		Monocular type (Vertical tilt angle: 60°)			
Observation image		Erect			
Eyepiece protractor		Resolution (graduation) : 1°, Rotation angle: 360°, Resolution (angle): 6', Adjustable zero point			
Eyepiece		Standard accessory: 15X (field number: 13), Options: 10X, 20X			
Objective lens		Standard accessory: 2X, Options: 5X, 10X			
Microscope head	Maximum height of workpiece	4.53" / 115mm		4.21" / 107mm	
	Focusing method	Manual (Coarse feed)			
Illumination unit	Transmitted illumination	Stepless brightness adjustment, White LED light source, With green filter			
	Surface illumination	Oblique single-source type, Stepless brightness adjustment, White LED light source			
Cross-travel stage	Measuring range	2" x 2" / 50x50mm		4" x 2" / 100x50mm (An optional 2"/50mm gauge block is required to cover full range. A CERA block is recommended.)	
	Table size	6" x 6" / 52x152mm		9.44" x 6" / 240x152mm	
	Usable area of the stage glass	3.8" x 3.8" / 96x96mm		6" x 3.8" / 154x96mm	
	Maximum stage glass loading	11 lbs. / 5kg			
Linear measurement method		Micrometer heads optional	Micrometer heads included	Micrometer heads optional	Micrometer heads included
Resolution		N/A	.00005"/1μm	N/A	.00005"/1μm
Micrometer head travel range		N/A	2"/50mm	N/A	2"/50mm
Power supply		120VAC Maximum power consumption: 4.2W			
Main unit mass		31 lbs. / 14ka		33 lbs. / 15ka	



TM-A505B  
176-820A

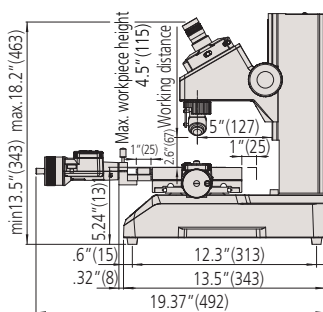
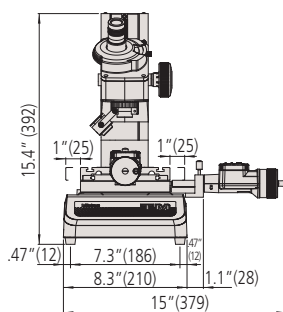


TM-A1005B  
176-821A

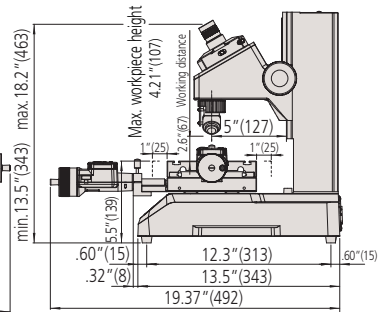
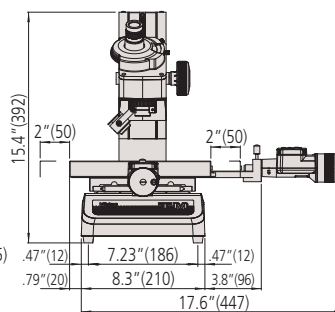
(Micrometer heads shown are optional on other models)

## DIMENSIONS (including digital micrometer heads)

## TM-505B

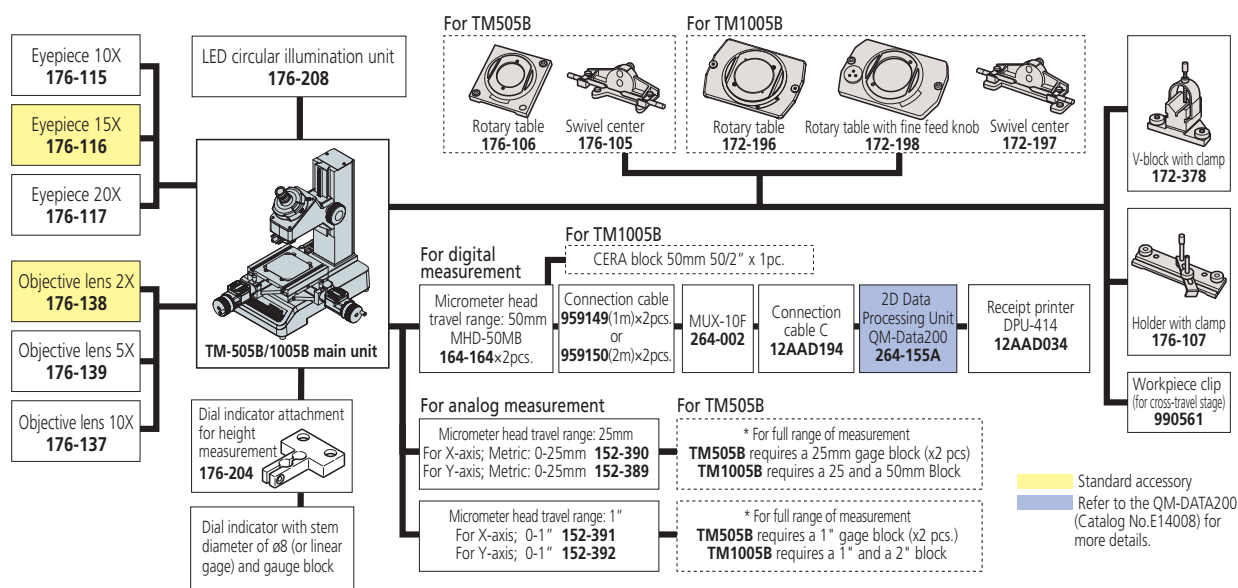


## TM-1005B



Unit: Inch(mm)

## System configuration (accessories are optional)



Notes: 1) One or two micrometer heads are required for linear dimension measurement.

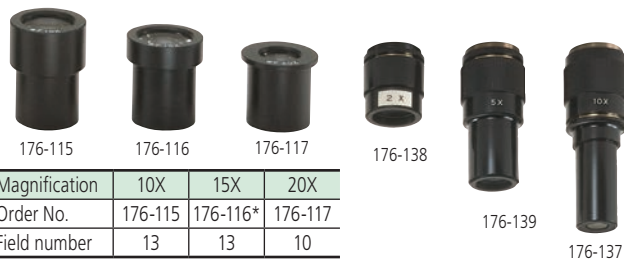
- 2) If a measuring range longer than the micrometer head travel range is to be used, a gauge block accessory is required.

- 2) If a measuring range longer than the micrometer head travel.
- 3) Some order numbers differ depending on the connector form.



## Eyepiece-Objective Performance Table

	Eyepiece 10X (176-115)			Eyepiece 15X (Standard accessory)			Eyepiece 20X (176-117)		
	Total magnification	Viewing field	Depth of focus	Total magnification	Viewing field	Depth of focus	Total magnification	Viewing field	Depth of focus
Objective 2X (Standard accessory)	20X	ø.256" (ø6.5mm)	158µm	30X	ø.256" (ø6.5mm)	124µm	40X	ø.197" (ø5mm)	107µm
Objective 5X (176-139)	50X	ø.102" (ø2.6mm)	56µm	75X	ø.102" (ø2.6mm)	47µm	100X	ø.079" (ø2mm)	42µm
Objective 10X (176-137)	100X	ø.051" (ø1.3mm)	24µm	150X	ø.051" (ø1.3mm)	21µm	200X	ø.039" (ø1mm)	19µm

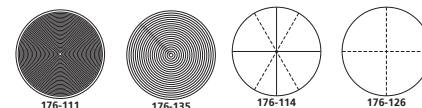


Magnification	10X	15X	20X
Order No.	176-115	176-116*	176-117
Field number	13	13	10

\*Standard accessory

Magnification	2X	5X	10X
Order No.	176-138*	176-139	176-137
Numerical aperture	0.07	0.10	0.14
Working distance	2.638" (67mm)	1.299" (33mm)	.551" (14mm)

\*Standard accessory



Reticles	
<b>176-111</b>	concentric circle (up to ø4mm, 0.05mm increment)
<b>176-135</b>	concentric circle (up to ø2mm, .01" increment)
<b>176-114</b>	60° angle
<b>176-126</b>	90° broken cross-hair* (Standard accessory)

Coordinate Measuring Machines

Vision Measuring Systems

Form Measurement

Optical Measuring



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