

MF Microscope

SERIES 176 – Measuring Microscopes

- The MF measuring microscopes' expandability, such as when used in combination with Mitutoyo's vision unit to boost its performance or data management on a PC, promises further improved measuring efficiency.
- Observation with a clear and flare-free erect image and a wide field of view.
- Measuring accuracy that is the highest in its class (and conforms to JIS B 7153).
- ML series, high-NA objectives that are specially designed for the MF series (long working distance type).
- Illumination unit (reflected/transmitted) selectable from a high-intensity LED or halogen bulb (required).
- Variable aperture diaphragm (reflected/transmitted) allows observation measurement while suppressing light diffraction.
- Variety of standardized stages in sizes to suit practically any application.
- Quick-release mechanism useful for moving the stage quickly when measuring workpieces that are large in size or quantity.
- Coarse/fine feed handles equipped as standard on both sides allow precise focus and observation measurement regardless of handedness.
- High-magnification observation up to 2000X.
- Standard measuring microscope that has a wide variety of optional accessories including a Vision Unit and various digital CCD cameras.



MF-B2017C
XY stage travel range: 200 x 170 mm
(with optional binocular tube)



Using optional slide type nosepiece with 2-lens mount (factory set option)

SPECIFICATIONS

Model (XY stage size)	1010C	2010C	2017C	3017C	4020C	
Code No.	MF-A	176-662-10	176-663-10	176-664-10	176-665-10	176-666-10
	MF-B	176-682-10	176-683-10	176-684-10	176-685-10	176-686-10
XY stage travel range	100 x 100 mm	200 x 100 mm	200 x 170 mm	300 x 170 mm	400 x 200 mm	
Z-axis travel range	150 mm		220 mm			
Focusing method	Manual focussing (coarse focussing: 30 mm/rev., fine focussing: 0.2 mm/rev.)					
Measurement method	Linear encoder (2-axis model: X / Y-axis, 3-axis model: X / Y / Z-axis)					
Resolution (switchable)	0.001 mm / 0.0005 mm / 0.0001 mm / .0001" / .00005" / .00001"					
Measuring accuracy (at 20°C)	XY-axis: (2.2+0.02L) µm, L = measuring length (mm) when not loaded, JIS B 7153					
Indication accuracy (at 20°C)	Z-axis: (5+0.04L) µm, L = measuring length (mm)					
Floating function	X and Y axes with Quick-release mechanism					
XY stage top size	280 x 280 mm	350 x 280 mm	410 x 342 mm	510 x 342 mm	610 x 342 mm	
Effective glass size	180 x 180 mm	250 x 150 mm	270 x 240 mm	370 x 240 mm	440 x 240 mm	
Swivel function	—		±5° (left)		±3° (left)	
Max. stage loading	10 kg		20 kg		15 kg	
Max. workpiece height	150 mm		220 mm			
Price	£POA	£POA	£POA	£POA	£POA	

Selection of machine type

Machine type	MF-A	MF-B
Measurement system	X and Y-axis (2-axis type)	X, Y and Z-axis (3-axis type)

Illumination Unit

Applicable Illumination Unit	LED	Halogen
Code No.	176-345E	176-347E

Technical Data

Observation image:	Erect image
Optical tube (optional):	Monocular or binocular tube (depression: 25°), Reticle projection method, with TV mount, Optical path ratio (eyepiece/TV mount: 50/50)
Eyepiece (optional):	10X, 15X, 20X
Objective:	3X (375-037), W.D.: 72.5 mm
Optional:	1X, 5X 10X, 20X, 50X, 100X
Transmitted illumination	
Light source:	Halogen bulb (12V, 50W)
Optical system:	Telecentric illumination with adjustable aperture diaphragms
Functions:	Light intensity adjustable, Non-stepped brightness adjustment
Surface illumination	
Light source:	Halogen bulb (12V, 150W)
Optical system:	Koehler illumination with adjustable aperture diaphragms
Functions:	Light intensity adjustable, Non-stepped brightness adjustment
Display unit	
No. of axis:	2 axes (MF-A type) or 3 axes (MF-B type)
Resolution:	0.001 mm / 0.0005 mm / 0.0001 mm / .0001" / .00005" / .00001"
Functions:	Zero-setting, Direction switching, Data output (via RS-232C interface)
Power supply:	100/110/120/220/240V AC, 50/60 Hz
Mass:	65.5 kg (1010C) / 69.5 kg (2010C) / 130 kg (2017C) / 138 kg (3017C) / 144 kg (4020C)

Optional Accessories

176-392:	Monocular tube with 10X eyepiece £323.00
176-393:	Binocular tube with 10X eyepiece set £1120.00
378-856-5:	10X eyepiece set (view field dia.: 24 mm) £282.00
378-857-5:	15X eyepiece set (view field dia.: 16 mm) £313.00
378-858-5:	20X eyepiece set (view field dia.: 12 mm) £326.00
375-043:	Protractor eyepiece (10X) £818.00
176-313E:	Digital protractor eyepiece (10X) £2080.00
375-036-2:	1X objective (W.D.: 61 mm, N.A.: 0.03) £1210.00
375-037-1:	3X objective (W.D.: 77 mm, N.A.: 0.09) £500.00
375-034-1:	5X objective (W.D.: 61 mm, N.A.: 0.13) £767.00
375-039:	10X objective (W.D.: 51 mm, N.A.: 0.21) £635.00
375-051:	20X objective (W.D.: 20 mm, N.A.: 0.42) £1650.00
375-052:	50X objective (W.D.: 13 mm, N.A.: 0.55) £1980.00
375-053:	100X objective (W.D.: 6 mm, N.A.: 0.7) £2210.00
176-314-1:	Slide type nosepiece (2-mount, parfocal) £450.00
176-314-2:	Slide type nosepiece (2-mount, mag. adjusted) £450.00
12AAA643:	ND2 colour filter (transmitted / surface) £56.90
12AAA644:	ND8 colour filter (transmitted / surface) £30.00
12AAA645:	GIF filter (transmitted / surface) £60.40