



# TC5000

Series

INVERTED BIOLOGICAL MICROSCOPES



With Infinity Corrected Optical System  
For Cell Culture, Routine IVF, GFP, Fluorescence



# TC5000 Series

## INVERTED BIOLOGICAL MICROSCOPES

The Meiji Techno TC5000 Series inverted biological microscopes have been designed to be versatile, modular, ergonomic, microscopes systems which are ideal for use in research, educational and clinical applications. Meiji's TC Series are well suited for a wide variety of routine examination of tissue cultures, precipitates, sediments, deposits, and for clinical applications such as live cell observation, in-vitro fertilization, epi-fluorescence observation, and high resolution video microscopy.

The TC5000 Series Microscopes deliver crisp, distortion-free, high resolution images in multiple modes of operation. A wide range of components, objectives and contrasting methods are available to suit your specific application. Contrast methods available include: Brightfield, Phase Contrast, or Epi-fluorescence.

### GENERAL FEATURES & OPTIONS

#### Optical System:

All microscopes come standard with an infinity corrected optical design (F=200)

#### Viewing Heads:

Units are supplied with either a standard Siedentopf type binocular head inclined at 30° or a trinocular Siedentopf head inclined at 45°. Interpupillary distance is adjustable from 53mm to 75mm. A graduated diopter adjustment is provided as a standard feature on the left eye-tube of all units.

#### Eyepieces:

Paired SWH10X, widefield, high eye-point eyepieces, F.N 22, with a 25mm reticle mount is standard on all units. Optional SWH15X, SWH20X and SWH10X-F focusing eyepieces are available.

#### Nosepiece:

Quintuple, side facing nosepiece, with positive precision click stops.

#### Objectives:

TC Planachromat, TC Planachromat Phase or TC Planachromat fluorescence objectives are provided on respective models.

#### Plain Stage:

A 180mm(X) x 245mm(Y) plain stage with replaceable glass insert with 45mm opening.

#### Optional Attachable Mechanical Stage:

112mm (X) x 72mm (Y) movement with built in test plate holder and drop down ergonomic coaxial controls.

#### Optional Specimen holder Include:

1" x 3" Slide, chamber, 35mm, 55mm, 65mm Petri dish, Terasaki plate, and Hemacytometer holder.

#### Focus Mechanism:

Ergonomically low positioned, coaxial, coarse and fine focus knobs with adjustable tension control. Range of travel: 9mm total, 1.0mm up and 8mm down. Rotation of fine focus : 0.2mm per revolution.

#### Illumination:

All units come equipped with a 6V/30W halogen lamp. An aspheric condenser lens, a diffusion filter and heat absorbing filter are also incorporated into the lamphouse. A lever type iris diaphragm is provided for aperture control.

#### Condenser:

All microscopes come equipped with an ELWD (extra long working distance) condenser, N.A. 0.30, W.D. 73mm. Optional Condenser: N.A.0.55, W.D. 20.5mm is available for more demanding work with 40X objectives.

#### Photo port:

All models are equipped with a front mounted camera port suitable for CCD, 35mm, or digital cameras. Optional camera adapters are available to facilitate a wide range of camera and video equipment.

#### Body:

Cast aluminum alloy body for rigidity and exceptional stability.

### FEATURES COMMON TO ALL MODELS

Exchangeable observation tubes. Compact wedge shaped cast aluminum alloy frame for exceptional stability and a small footprint. Chemical resistant baked enamel finish. Flexible and modular design for system expansion. Transparent stage plate for easy objective identification. Low profile coaxial coarse and fine focus controls with tension adjustment. Pre-centered 30W Halogen bulb (Brightfield & Phase models) Front mounted CCD, 35mm, digital camera port. Automatic voltage sensing power supply. Removable power cord.

### Specifications

•Footprint : 364mm (D) x 220mm (W) •Overall Dimensions : 485mm (D) x 411mm (H) x 220mm(W) •Shipping Weight : 23 lbs/10.5kg





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## FEATURES OF PHASE CONTRAST MODELS

Newly designed infinity corrected TC Planachromat Phase objectives, 45mm par-focal distance, F=200mm. Green interference filter, 546nm in metal mount. Phase centering telescope.



TC5300

**Model TC5300**  
Binocular Phase contrast inverted Microscope with optional mechanical stage



TC5400

**Mode TC5400**  
Tinocular Phase contrast inverted Microscope with optional mechanical stage, MA877 "C" mount adapter, DK3000 Digital camera, MA150/50 Camera attachment, Photo eyepiece T-2 adapter and Canon SLR Digital camera

## Fluorescence Filter Information

The epi-fluorescence equipped TC5500 and TC5600 include the following filter sets:

Excitation Type	Exciter Filter 25mm diameter	Dichroic Mirror 25.7mm x 36mm	Emitter Filter 25mm diameter	Applications
Blue Chroma P/N: 11001v 2	D470/40x	495DCLP	E515LPv2	FITC Acridine Orange Auramine EGFP,S65T, RSGFP
Green Chroma P/N: 11002v 2	D546/10x	565DCLP	E590LPv2	Rhodamine TRITC Propidium iodine RFP



Model TC5500

## FEATURES OF EPI-FLUORESCENT MODELS

Newly designed infinity corrected TC Planachromat F Series objectives, 45mm par-focal distance, F=200mm. Fluorescent illuminator attachment with UV exciter filter, lamp-house, and power supply for HBO 100W Mercury lamp. Three position epi-fluorescent slider, Basic Blue excitation filter set. Basic Green excitation filter set. ND50 Neutral density filter.



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## COMPONENTS & ACCESSORIES FOR TC5000 Series INVERTED MICROSCOPE

### VIEWING HEADS

- MA814** Siedentopf type binocular head, I.P. adjustment 53mm to 75mm graduated diopter on left eyetube (30mm I.D. eyetubes) (included in Models TC5100, TC5300 & TC5500)
- MA816** Inclined Siedentopf type trinocular head, inclined at 30° .I.P. adjustment 53mm to 75mm graduated diopter on left eyetube (30mm I.D. eyetubes) (Included in Models TC5200, TC5400 and TC5600)



MA816

### OBJECTIVES

Meiji Techno's new TC Plan infinity corrected objectives are designed using the latest computer aided lens design software, advanced glass formulation technology, and multilayer anti-reflection coatings.

### FEATURES OF TC PLAN BRIGHTFIELD OBJECTIVES

Meiji Techno's TC Plan objectives are made with extra-low-dispersion glass and utilize new advanced multilayer anti-reflection coatings. The advanced technology used in designing and creating the TC Plan objective lenses result in an objective with a higher resolving power, higher image contrast, wider field of view, improved flatness of field, and a sharp image with a minimum of flare and ghosting. The TC Plan Achromatic objectives are color corrected for chromatic aberration in the red and blue regions of the spectrum and offer an exceptional flat field of view.

### OBJECTIVES FOR BRIGHTFIELD (Infinity/1.0)

Cat.No.	Mag.	N.A.	W.D.	F.L.
MA820	4X	0.13	17.3mm	50.0mm
※ WA821	10X	0.25	7.6mm	20.0mm
※ MA822	20X	0.40	7.0mm	10.0mm
MA823	40X	0.65	2.8mm	5.0mm

The items with asterisk (※) are included in the Model TC5100 & TC5200



### FEATURES OF TC PLAN PHASE OBJECTIVES

Meiji Techno's TC Plan Phase contrast objectives are made with extra-low-dispersion glass and utilize new advanced multilayer anti-reflection coatings. Five layers of a dielectric thin film are applied to the glass phase plate using a special vacuum deposition technique. The multiple anti-reflection coatings in combination with the thin film reduce the amount of stray light and glare reflected back into the system. The resulting high contrast image is described as a negative or bright contrast phase image. The use of a 546nm green interference filter helps the achromatic objectives produce their best image because they are spherically corrected for green light.

### OBJECTIVES FOR PHASE CONTRAST (Infinity/1.0)

Cat.No.	Mag.	N.A.	W.D.	F.L.
MA825	Ph4X	0.13	17.3mm	50.0mm
※ WA826	Ph10X	0.25	7.6mm	20.0mm
※ MA827	Ph20X	0.40	7.0mm	10.0mm
MA828	Ph40X	0.65	2.8mm	5.0mm

The items with asterisk (※) are included in the Model TC5300 & TC5400



### FEATURES OF TC PLAN FLUORESCENT OBJECTIVES

Meiji Techno's TC Plan F, Epi-Fluorescence objectives are made using carefully selected extra-low-dispersion, non-fluorescing glass. Series layers of a new advanced multilayer anti-reflection coating are applied to minimize surface lens reflections. The TC Plan F objectives have a high light transmission which extends into the ultra-violet excitation range. The result is an objective that provides an extremely bright, high contrast image, with high UV transmission and impeccable color correction

### OBJECTIVES FOR PHASE CONTRAST (Infinity/1.0)

Cat.No.	Mag.	N.A.	W.D.	F.L.
MA849	F4X	0.13	17.5mm	50.0mm
※ WA850	F10X	0.30	7.5mm	20.0mm
※ MA851	F20X	0.40	7.5mm	10.0mm
MA852	F40X	0.65	2.9mm	5.0mm

The items with asterisk (※) are included in the Model TC5500 & TC5600



### SWH EYEPIECES

Meiji Techno's newly developed SWH Series Eyepieces are specifically designed to provide sharp, chromatic-aberration-free images with ultra flat fields of view. These specially designed, anti reflection coated, high eye-point eyepieces have been manufactured with large diameter lenses, more optical elements and a high eye-point to reduce eye fatigue and accommodate eyeglass wearers. The standard 10X SWH Series eyepiece has an eye relief of 20.7mm and a field number of 22mm. The SWH Series eyepieces are available in three different magnifications and come equipped with fold-down rubber eye-guards.

Cat.No.	Mag.	Field No.	Eye Reling.	F.L.
MA817	SWH10X	22	20.7mm	25.0mm
WA818	SWH15X	16	16.4mm	16.67mm
MA819	SWH20X	12	11.5mm	12.5mm
MA859	SWH10X-F	22	20.7mm	25.0mm
	Focusing Widefield High Eyepoint			





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## DIGITAL CAMERA ADAPTERS VIDEO, AND 35MM SLR CAMERA ATTACHMENT

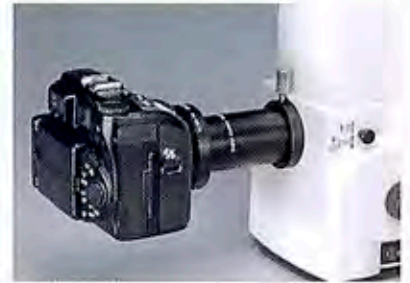
### MA868 Digital Camera Adapter for TC5000 Series

(Requires a DC adapter ring for your specific model of camera which are listed below)

- DC-B6 For : Nikon Coolpix 5000
- DC-B13 For : NIKON Coolpix 5400
- DC-B7 For : Nikon Coolpix 5700,8700
- DC-B1 For : Olympus Camedia C-2000,C-2020,C-3000,C-3030,C-3040,C-4040,C-3100,C-4100,C-5050
- DC-B5 For : Olympus Camedia C-700,C-720,C-730,C-740,C-750,C-760,C-770
- DC-B4 For : Fuji Finepix S602,4900Z,6900Z,S5000
- DC-B2 For : Sony S70,S75,S85,CD300,CD400,CD500



MA868  
Digital Camera Adapter



### MA869 35mm SLR Camera Attachment for front photo port.

Magnification at film plane is 2.23X of objective in use. (Requires a T2 adapter ring for your specific model of camera which are listed below)



MA869  
35mm SLR Camera Attachment



### MA877 "C" mount camera adapter for CCD camera

(Magnification factor 0.66X).



MA877  
"C" mount adapter



### MA150/50 35mm SLR Camera Attachment for Trinocular head

(Requires one of photo eyepieces and a T2 adapter ring for your specific model of camera listed below.)

#### Photo Eyepiece

- MA512 Photo eyepiece 2.5X  
(Magnifies objective power by 2.5X at the film plane)
- MA508 Photo eyepiece 5X  
(Magnifies objective power by 5X at the film plane)
- MA500 Photo eyepiece 3.3X  
(Magnifies objective power by 3.3X at the film plane, with reticle mount)

#### T-2 Adapter Ring

- T2-1 Adapter ring for CANON camera
- T2-2 Adapter ring for MINOLTA camera
- T2-3 Adapter ring for PENTAX K,RICOH-XR camera
- T2-4 Adapter ring for PENTAX S camera
- T2-5 Adapter ring for NIKON camera
- T2-6 Adapter ring for OLYMPUS camera
- T2-7 Adapter ring for CONTAX,YASHIKA camera
- T2-8 Adapter ring for KONICA camera
- T2-9 Adapter ring for CANON EOS camera
- T2-10 Adapter ring for MINOLTA α, MAXIM2000 camera



## CCD VIDEO & USB 2.0 DIGITAL CAMERAS

- CK3100N CCD Color TV camera. 1/3" CCD, 450 TV lines of resolution, NTSC system with DC12V adapter
- CK3100P CCD Color TV camera. 1/3" CCD, 450 TV lines of resolution, PAL system with DC12V adapter
- CK3900N CCD Color TV camera. 1/2" CCD, 450 TV lines of resolution, NTSC system with DC12V adapter
- CK3900P CCD Color TV camera. 1/2" CCD, 450 TV lines of resolution, PAL system with DC12V adapter



CK3900

### DK3000

3.0 megapixel, color digital video microscopy camera with high speed USB 2.0 interface, 1/2 format 6.5mm x 4.9mm image sensor with 2048 x 1536 resolution.



DK3000

## COMPONENTS & ACCESSORIES FOR TC5000 Series

### CONDENSERS

- MA853** TC Condenser, N.A. 0.30, W.D. 73mm (Included in all Model)
- MA854** TC Condenser, N.A. 0.55, W.D. 20.5mm
- MA855** Phase slider (Included in Models TC5300 and TC5400)
- MA458/05** Centering telescope (O.D.=30.0mm)  
(Included in Models TC5300 & TC5400)



**MA854**



**MA855**  
Phase Slider



**MA458/05**

### FILTERS

- MA861** Green interference filter in 51mm mount (546nm) (Included in TC5300 & TC5400)
- MA863** Cobalt clear filter in 51mm mount (Included in all Model)
- MA856** LB100 Blue clear filter in 51mm mount
- MA857** G533 Green clear filter in 51mm mount
- MA858** ND25 Neutral density filter in 51mm mount



### SPECIMEN HOLDERS

- MA378** Hemacytometer holder
- MA382** Slide glass holder, 1" x 3"
- MA383** Chamber holder
- MA864** Terasaki Holder
- MA384** Petri dish holder, 35mm diam.
- MA385** Petri dish holder, 55mm diam.
- MA387** Petri dish holder, 65mm diam.



**MA387**



**MA864**



**MA384**



**MA382**

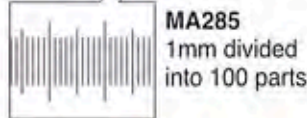
### MECHANICAL STAGE

- MA380/05** Mechanical stage, movement 112mm(X) x 72mm(Y) with test plate holder with drop-down coaxial controls



### STAGE MICROMETERS

- MA285** Objective micrometer, 0.01mm ruling
- MA286** 0.04" divided into 40 units, 0.001



**MA285**  
1mm divided into 100 parts

### EYEPIECE MICROMETERS (FOR USE WITH MA817 AND MA859 EYEPIECE)

- MA523** Cross-line reticule, 25mm diameter
- MA506** Eyepiece micrometer, 10mm divided into 100 units, 25mm diameter
- MA509** Eyepiece micrometer 5mm divided into 100 units, 25mm diameter
- MA524** 10mm square divided into 100 parts, 1.0mm square, 25mm diameter
- MA542** Cross-line with 0.1mm graduations, 21mm diameter



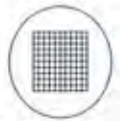
**MA523**



**MA506**



**MA509**



**MA524**

### TC5000 Series ORDERING INFORMATION

MODEL	BODY	OBJECTIVES	EYEPIECE(S)	CONDENSER	ILLUMINATOR
TC5100	Binocular	TC Plan LWD 10X TC Plan LWD 20X	SWH10X (F.N.22) (2 pcs)	N.A.0.30 W.D.73mm	Koehler by 6V30W Halogen, w/o Iris
TC5200	Trinocular				
TC5300	Binocular	TC Plan Phase LWD 10X LWD 20X	SWH10X (F.N.22) (2 pcs) [Centering Telescope]	N.A.0.30 W.D.73mm w/Phase annuli on Slider	
TC5400	Trinocular				
TC5500	Binocular	TC Plan Fluorescent LWD 10X LWD 20X	SWH10X (F.N.22) (2 pcs)	N.A.0.30 W.D.73mm	Koehler by 6V30W Halogen, w/o Iris Epi-Fluorescent Attachment Mercury 100W Blue and Green Excitation filter sets
TC5600	Trinocular				

Agent :



**MEIJI TECHNO CO.,LTD.**

322-1, Chikumazawa Miyoshi-machi, Iruma-gun  
Saitama 354-0043, Japan

Phone : (0)49-259-0111 Fax : (0)49-259-0113

E-mail : meiji@meijitechno.co.jp

http://www.meijitechno.co.jp

**MEIJI TECHNO AMERICA**

2186 Bering Drive, San Jose, CA., 95131, USA

Phone : 408-428-9654 Fax : 408-428-0472

Toll free : 800-832-0060

E-mail : sales@meijitechno.com

http://www.meijitechno.com

