

RZ Series

Zoom Stereo Microscopes



The RZ series delivers an ergonomic, high performance and modular design built to suit any researcher's application needs.

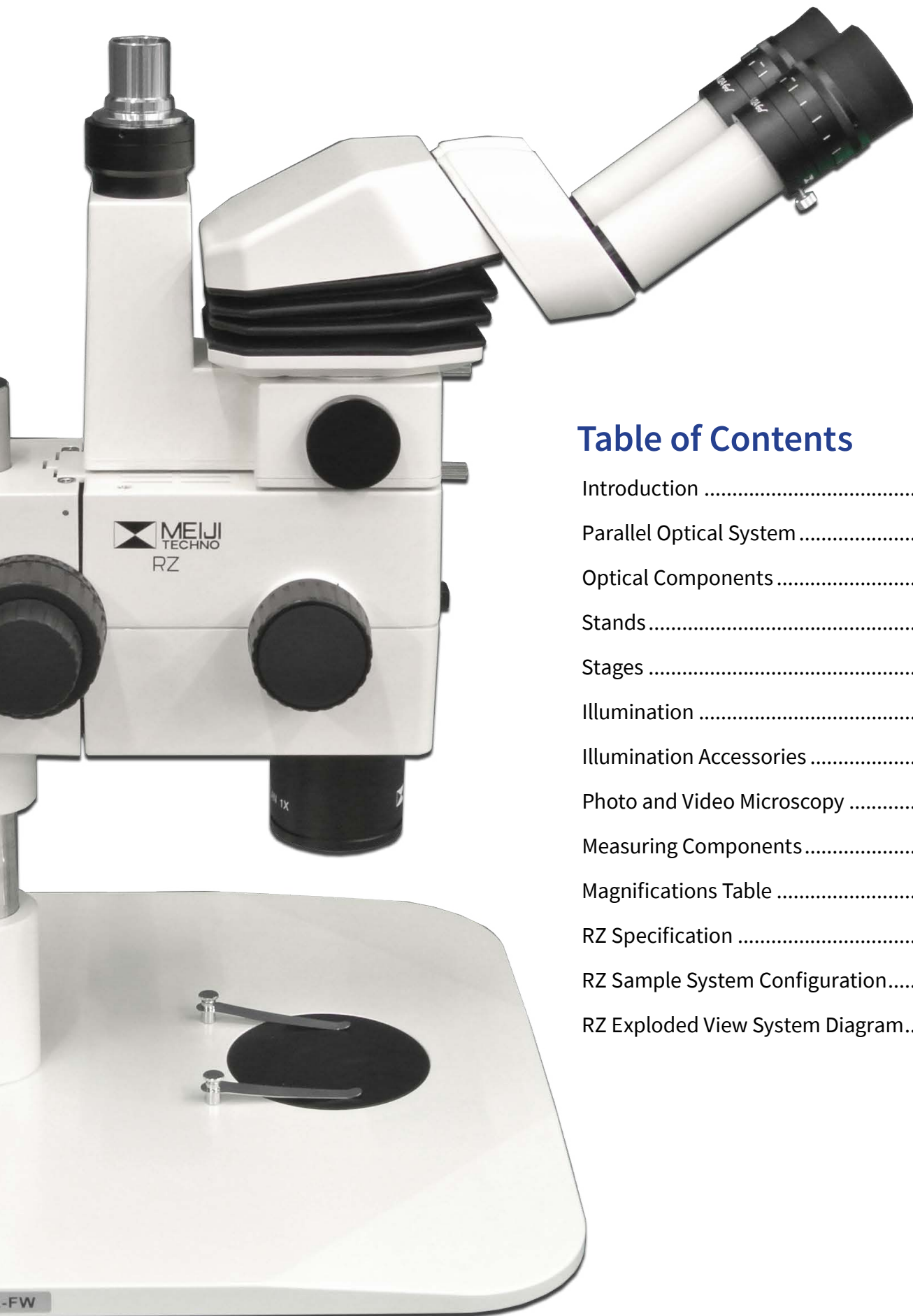


Table of Contents

Introduction	2
Parallel Optical System	3
Optical Components	4-5
Stands	6-7
Stages	9
Illumination	10
Illumination Accessories	11
Photo and Video Microscopy	12
Measuring Components	14
Magnifications Table	15
RZ Specification	16-18
RZ Sample System Configuration	19
RZ Exploded View System Diagram	20-21

A Researcher's Dream Microscope

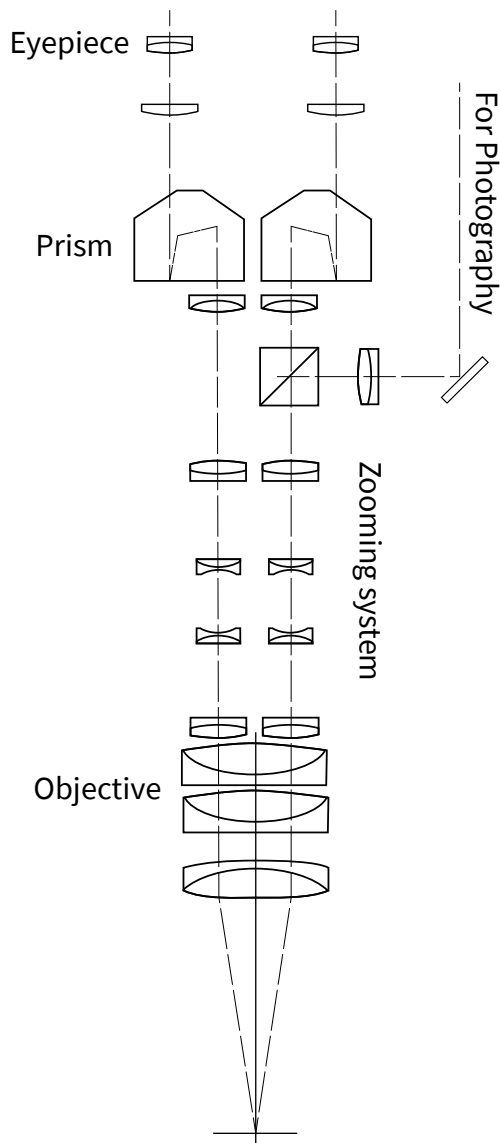
In any research field of microscopy such as life science or industrial manufacturing, it is fundamental to have high optics and ergonomic tools to consistently reproduce clear crisp images. With this demand in mind, Meiji Techno created the RZ Stereo Series that offers an advanced, high performance and modular design to meet any researcher's need. This series revolves around a Common Main Objective that creates parallel optical paths producing crisp and distortion-free resolution images. It has ergonomic components such as zoom knobs, heads and stands that have a user-friendly design which provides ease of use for any task or repetitive work. In addition, the series offers a full range of optional accessories such as interchangeable objectives, interchangeable eyepieces, various illuminator choices, various types of stands and more. This series provides researchers opportunities to customize their stereo microscopes based on their needs while having quality optics and ergonomics.



Modularity that Maintains a Parallel Optical System

The RZ Series is a modular stereo microscope, which means you can build a system to meet your needs and your budget. The heart of the system is the RZ-B zoom stereo body with a double iris diaphragm and 1:10 zoom range. Add to this your choice of objectives, viewing heads, eyepieces, stands and a host of other accessories. In doing so, you can create instruments for a wide variety of specialized applications.

The RZ Series is designed around two parallel optical paths which pass through a common main objective. The infinity system design allows for the quick change and easy introduction of intermediate optical components such as an independent beam-splitter, coaxial illuminator, drawing tube, video or photo attachment which results in an instrument that can be configured for a wide range of applications.



Specifications

Type

Common Main Objective (CMO)
Parallel Zoom System

Total Magnification

From 3.75X to 225X
(With optional eyepieces and objectives)

Eyepieces

Ultra Wide Field, focus-able, 10X
Ultra Wide Field, focus-able, 15X
Ultra Wide Field, focus-able, 20X
(10X, 15X, 20X accept reticles)

Objectives

Plan Achromat 0.5X
Plan Achromat 0.7X
Plan Achromat 1.0X
Plan Achromat 1.5X

Zoom

Zoom Ratio of 1:10

Optical Viewing Heads

Standard 45° Binocular
Adjustable Ergonomic Range 10° to 50°

Optical Components

Adjustable Viewing

Keeping the users in mind, Meiji Techno designed different viewing heads based on the users' budgetary and ergonomic needs. The RZ series offers standard or ergonomic viewing heads that each have their own adjustability.



MA748 Head + MA730 Eyepieces

The standard head is inclined at 45° with an interpupillary distance adjustment ranging from 46mm to 75mm. It accepts 30mm eyepieces.



MA749 Ergo Head + MA730 Eyepieces

The ergonomic head features low positioned eyetubes that can incline from 10° to 50° for comfortable, reduced fatigue and minimal stress viewing. Its interpupillary distance is adjustable from 52mm to 75mm.

The Heart of the RZ System

The RZ body features a 10:1 zoom ratio, built-in variable double iris diaphragms, and positive detent click-stops at twelve magnification ranges. Two perpendicular columns with eight zoom lenses divided into four groups that move in a smooth continuous motion by rotation of the ergonomically sized and positioned zoom control. A magnification indicator is conveniently located on the zoom control.



RZ-B Body

Zoom Control with Magnification Indicator

Double Iris Diaphragm

Interchangeable Eyepieces

Distortion-free, ultra widefield eyepieces (with dioptric adjustment of plus or minus 5 diopters) are available in powers of 10X, 15X and 20X. All eyepieces are provided with reticle mounts, and are also available with a crossline reticle factory installed.



Eyepieces	Description	Field Number	Eye-Relief	Focal Length	Reticle Acceptance (O.D.*)
MA730	UWF 10X	24	21mm	25mm	25mm
MA731	UWF 10X with crossline	24	21mm	25mm	N/A
MA732	UWF 15X	16	17mm	16.6mm	19mm
MA733	UWF 15X with crossline	16	17mm	16.6mm	N/A
MA734	UWF 20X	12	12mm	12.5mm	19mm
MA735	UWF 20X with crossline	12	12mm	12.5mm	N/A

*O.D. means Outer Diameter

The Common Main Objectives (CMO)

High resolution, flat field, plan-achromatic common main objectives are available in the following magnification: 0.5X, 0.75X, 1.0X, and 1.5X



Objectives	Description	Working Distance
MA740	Plan Achromat Objective 0.5X	164mm
MA741	Plan Achromat Objective 0.75X	101mm
MA742	Plan Achromat Objective 1.0X	76mm
MA743	Plan Achromat Objective 1.5X	43mm

Stands for the RZ Series



RZP Plain Stand

The RZP plain stand contains an aluminum alloy base that is coated with an anti-static finish. The stage holds a 94.5mm diameter black and white plastic stage plate and two stage clips.

Base Dimensions: 280mm wide x 255mm deep x 35mm high

Pillar Height: 325mm



RZ-FW Plain Wide-Surface Ergonomic Stand

The RZ-FW plain wide surface stand is used for brightfield observation for small to medium sized specimens. The stage holds a 94.5mm diameter black and white plastic stage plate and two stage clips.

Base Dimensions: 380mm wide x 300mm deep x 32mm high

Pillar Height: 325mm



RZT Transmitted Light Stand

The RZT transmitted light stands are used for brightfield observation of transparent specimens. The RZT features a 6V, 30W halogen lamp with variable intensity control, 94.5mm diameter clear glass stage plate, two stage clips and an anti-static finish. A second transformer is incorporated into the base for use with the optional COX illuminator or auxiliary light source.

Base Dimensions: 280mm wide x 255mm deep x 85mm high

Pillar Height: 325mm



RZBD/LED Brightfield/Darkfield Transmitted Light Stand

The RZBD/LED transmitted light stand is used for brightfield/darkfield observation of transparent specimens. The RZBD/LED stand incorporates a rotatable and sliding Y-axis mirror in base with a locking ring tension, a clear glass stage plate, and two stage clips. It also features a “pseudo” LED transmitted light darkfield illumination and an integrated automatic voltage sensing power supply of 115/240V. Quick change over from brightfield to dark-field observation is facilitated by an easy-to-reach front-mounted controls.

Base Dimensions: 380mm wide x 300mm deep x 95mm high

Pillar Height: 325mm



BAS-1 Heavy Duty Boom Stand

The BAS-1 is a heavy duty dual arm industrial-type boom stand that comes with a 32mm diameter drop down mounting post. The BAS-1 provides complete flexibility for smooth horizontal and vertical adjustment. It uses linear ball bearings to support the horizontal arm, allowing it to glide over the work surface with none of the binding inherent in other boom stands. This heavy duty boom stand is made in the U.S.A.

Base Dimensions: 300mm wide x 300mm deep x 38.1mm high

Weight: 80lbs



RZ Configuration:

MA749: Ergonomic viewing head

MA730: UWF 10X eyepieces (2)

MA751: Photo/video attachment with sliding 80/20 beam splitter

RZ-B: 10:1 Zoom body with built-in dual iris diaphragm and click stops

MA742: 1.0X Plan Achromat objective

RZBD/LED: Brightfield/Darkfield LED transmitted light stand

MA964: LED ring illuminator with auto voltage sensing transformer

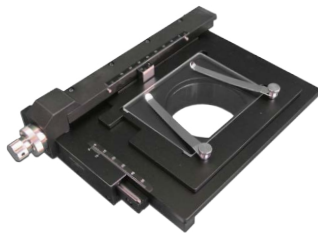
Stages

Meiji Techno offers various mechanical stages that have precise controls to view mounted specimens easily. Depending on their functionality, each stage is compatible to specific RZ stands.



Graduated Mechanical Stage for RZP and RZ-FW Stands

This stage has 0.1mm graduations and coaxial controls for precise control of mounted specimens. Features 116mm x 137mm work surface with stage clips, 50mm x 75mm X-Y travel. - MA578



Graduated Mechanical Stage for RZT and RZBD Stands

This stage has 0.1mm graduations and coaxial controls for precise control of mounted specimens. Features 116mm x 137mm work surface with stage clips and 74mm x 96mm clear glass plate for use with transmitted light stands, 50mm x 65mm X-Y travel. - MA578/05



Ungraduated Sliding Mechanical Stage for RZP and RZ-FW Stands

This stage features a 125mm x 170mm work surface with stage clips. Roller bearing mount allows smooth, easy fingertip control over 100mm x 100mm X-Y travel. - MA565



Ungraduated Sliding Mechanical Stage for RZT and RZBD Stands

This stage features a 125mm x 170mm work surface with stage clips and a 94.5mm diameter clear glass plate for use with transmitted light stands. Roller bearing mount allows smooth, easy, fingertip control over 100mm x 100mm X-Y travel. - MA565/05



Polarizing Stage for RZT and RZBD Stands

This is a 150mm diameter rotatable stage with vernier markings to 1°. Includes stage clips and 1/4 wave plate in sliding mount. Optional first order red plate is also available. - MA761

Illumination

The RZ series provides different illuminators that are designed to help view certain groups of specimen depending on the researcher's job field.



Cox Vertical Illumination

Meiji Techno's coaxial illuminators are used for observing flat, high reflective specimens such as integrated circuits, semiconductor wafers, polished metal specimens, solder ball, or magnetic recording heads. The unit, COX illuminator, comes in halogen with a 6V, 30W halogen lamp and has an optional free-standing transformer (MA651/05 or MA651/10). The other unit called COX/LED also comes in LED.



Oblique Illumination

A dual arm fiber optic illumination system is available for any RZ stereo microscope in the series. This system composes of either a Halogen/LED power supply (different voltages), a self-supporting dual arm light guides, connecting adapters and focusing lenses.



Annular Illumination

An annular fiber optic light system is also available for any RZ stereo microscope system. Depending on the researcher's need, this light system will be composed of either a Halogen/LED supply (different voltages), connecting adapter and an annular light guide.



Ring Illumination

The RZ series has various ring light illuminators available depending on the user's needs. This series is compatible with various ring lights such as halogen, fluorescent and LED illumination. Depending on the ring light, we provide ring lights that can illuminate cool, warm and daylight illumination. Though, some ring lights would need an adapter accessory such as the MA308 to attach to the RZ objective.

Additional Illuminator Accessories



1/4 Waveplate

A 1/4 wave plate is required when using the coaxial vertical illuminator to view reflective specimens. The quarter wave plate is attached to the bottom of the objective and is rotated to achieve the desired effect.



Adapter Mount

An adapter mount is required when using specific ring illuminators to mount directly on RZ objectives. This mount has an inner diameter of 45mm and an outer diameter of 52mm.

Filter Sets

The following optional paired optical filter sets are available.



Filter	Description
MA754	LB100 Blue clear filter in 18mm diameter mount
MA755	G533 Green clear filter in 18mm diameter mount
MA756	Y48 Yellow clear filter in 18mm diameter mount
MA757	ND2 Neutral density filter in 18mm diameter mount
MA758	ND8 Neutral density filter in 18mm diameter mount

Photo and Video Microscopy

The RZ series is capable of turning its binocular stereo systems into trinocular versions by including additional photo/attachment accessories below. A RZ photo digital trinocular system usually includes a MA751 photo/video attachment, a C-mount and a camera (while its binocular sibling does not)

MA751 Photo/Video Attachment



The primary component necessary for photo or video work with RZ stereo microscopes is the MA751 photo/video attachment. It allows you to take 35mm or large-format Polaroid photographs of your specimens, or to display your specimens on a video monitor. The MA751 photo/video attachment contains a beam-splitter prism which can be slid into the light path to redirect 80% of the light that would normally go to the eyepieces into the vertical photo tube behind the viewing head. This allows the user to view the specimen through the eyepieces while also taking photographs and/or displaying the image on a video monitor.

NOTE: Additional accessories are needed to attach 35mm or video cameras to the MA751.

Video C-mounts

C-mounts are used to connect the video camera to the MA751 photo/video attachment and use the projection lenses of various magnifications.

NOTE: C-mounts with reduction lenses (i.e. magnification factors less than 1.0X) are commonly used to compensate for the magnification increase inherent in CCD cameras and monitors.

C-mount Adapters	Description
MA151/35/03	0.3X Lens
MA151/35/04	0.45X Lens
MA151/35/05	0.5X Lens
MA151/35/20	0.7X Lens
MA151/35/15	1.0X Lens
MA151/35/25	2.5X Lens





RZ Configuration:

MA748: Binocular viewing head

MA730: UWF 10X eyepieces (2)

MA751: Photo/video attachment with sliding 80/20 beam splitter

RZ-B: 10:1 Zoom body with built-in dual iris diaphragm and click stops

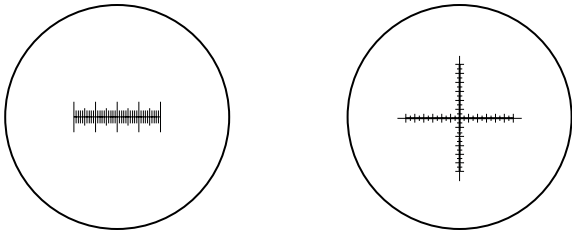
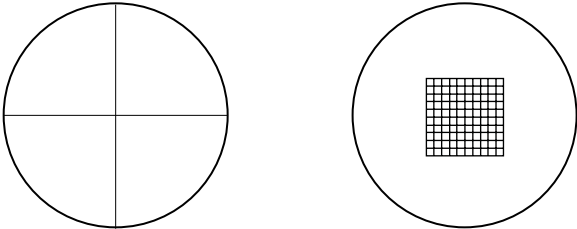
MA742: 1.0X Plan Achromat objective

RZ-FW: RZ Plain stand

MA151/35/03: C-mount 0.3X lens

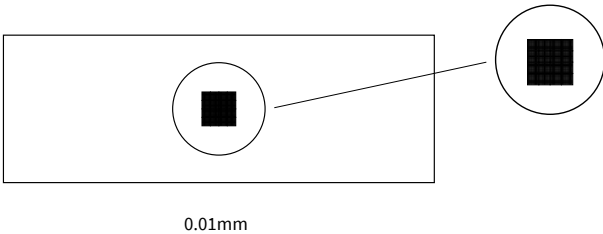
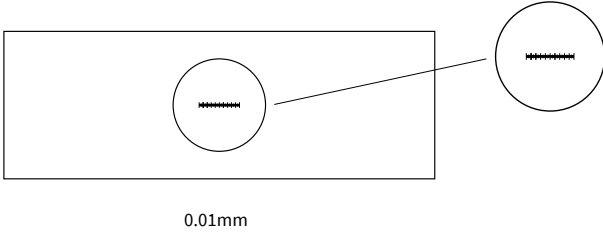
HD1500MET-M-AF: Auto-focusing measurement HD camera monitor

Measuring Components



Eyepiece Micrometers

Eyepiece micrometers can be inserted into the 10X, 15X, or 20X eyepieces for the purpose of specimen measurement. Linear scales, counting grids, and crossline micrometers are just a few of the choices available to facilitate measurement of your specimens.



Stage Micrometers

Stage micrometers are used to calibrate the eyepiece micrometers. Stage micrometers are available with both English and metric scales for reflected and transmitted light.

RZ SPECIFICATIONS

RZ-B Zoom Microscope Body	
Key Feature	Zoom body with focusing block
Zoom Ratio	10:1
Iris Diaphragm	Built-In
Click Stops	Included

Eyepieces	Description	Field Number	Eye-Relief	Focal Length
MA730	UWF 10X	24	21mm	25mm
MA731	UWF 10X with crossline	24	21mm	25mm
MA732	UWF 15X	16	17mm	16.6mm
MA733	UWF 15X with crossline	16	17mm	16.6mm
MA734	UWF 20X	12	12mm	12.5mm
MA736	UWF 20X with crossline	12	12mm	12.5mm

Objectives	Description	Working Distance
MA740	Plan Achromat objective 0.5X	164mm
MA741	Plan Achromat objective 0.75X	101mm
MA742	Plan Achromat objective 1.0X	76mm
MA743	Plan Achromat objective 1.5X	43mm

Viewing Heads	Description	Angle
MA748	RZ binocular head	45°
MA749	RZ binocular head, ergonomic type	10° – 50° adjustable

Photo/Video Attachment	Description
MA751	RZ photo tube attachment with 80/20 beam-splitter
C-mounts	
MA151/35/03	0.3X Lens
MA151/35/04	0.45X Lens
MA151/35/05	0.5X Lens
MA151/35/15	1.0X Lens
MA151/35/20	0.7X Lens
MA151/35/25	2.5X Lens

Stands	Stands Type	Key Features	Illumination	Dimensions
RZP	Plain	Includes white/black stage plate, 12.79" (325mm) pillar	N/A	280mm wide x 255mm deep x 35mm high, 11" x 10" x 1.38"
RZT/100	Plain Light Stand	12.79" (325mm) pillar, main Voltage: 110/120V (available in 220V/240V - RZT/200)	Transmitted illumination, halogen 6V, 30W	280mm wide x 255mm deep x 85mm high, 11" x 10" x 3.35"
RZ-FW	Plain Wide Surface	Ergonomic plain stand, includes black and white stage plate	N/A	380mm wide x 300mm deep x 32mm high, 15" x 11.875" x 1.26"
RZBD/LED	Brightfield/Darkfield Light Stand	Rotatable and sliding Y-axis mirror base with locking tension ring, includes auto sensing power supply, main voltage: 115/240V	"Pseudo" Transmitted LED illumination	380mm wide x 305mm deep x 95mm high, 15" x 12" x 3.74"
BAS-1	Boom	Ball bearing stand with dual horizontal arms, 25" vertical post, 32mm straight mounting post	N/A	330mm wide x 330mm deep x 38mm high, 13" x 13" x 1.5"

Illuminators	Illuminator Type	Light Type	Description
COX	Coaxial Vertical Illuminator	Halogen	6V, 30W without transformer, requires MA762 1/4 waveplate in mount for RZ plan objective
COX/LED	Coaxial Vertical Illuminator	LED	Includes a transformer, requires MA762 1/4 wave plate in mount for RZ plan objective, also cannot be used with MA751 photo attachment
FL151	Dual Arm Fiber Optic	Halogen	150W fiber optic, 110/115V (available in 220/240V - FL151/220)
FL152	Annular Fiber Optic	Halogen	150W fiber optic, 110/115V (available in 220/240V - FL152/220)
FT191	Dual Arm Fiber Optic	Halogen	150W fiber optic, 110/115V (available in 220/240V - FT191/220)
FT192	Annular Fiber Optic	Halogen	150W fiber optic, 110/115V (available in 220/240V - FT192/230)
MA305/100	Ring Light	Fluorescent	Includes starter 110V, needs MA308 adapter (available in 220/230V - MA305/200)
MA964	Ring Light	LED	10W, includes auto voltage sensing power supply, 150V or 240V with 60 LED Array, adapter not needed
MA961/S/ESD	Ring Light	LED	Includes 40 LED array, supplied with controller and power supply, available in Daylight, Cool White, and Warm White, needs MA308 adapter
MA961/40	Ring Light	LED	Includes 40 LED array, 66mm inner diameter, supplied with 4 quadrant controller and auto voltage sensing supply, available in Daylight, Cool White and Warm White
MA961/80/ESD	Ring Light	LED	Includes 80 LED array, adjustable intensity, 5W, supplied with dual quadrant controller and power supply

Stage Components	Description
MA578	Coaxial controlled graduated mechanical stage for RZP and RZ-FW stands, 50mm x 75mm
MA578/05	Coaxial controlled graduated mechanical stage with clear glass plate for RZT and RZBD Stands, 50mm x 75mm
MA565	Ungraduated sliding mechanical stage for RZP and RZ-FW stands, 100mm x 100mm
MA565/05	Ungraduated sliding mechanical stage with clear glass stage plate for RZT and RZBD stands, 100mm x 100mm
MA761	Rotatable stage with polarizer and 1/4 wave plate in sliding mounts, reading to 1° rotation, 150mm diameter for RZT and RZBD stands
MA761/05	Thin specimen plate (use with MA761 when viewing thin sections)
MA762	1/4 wave plate for use with COX illuminator
MA763	Replacement polarizer in sliding mount for use with MA761
MA764	1st order red compensating plate in sliding mount for use with MA761
MA771	Replacement 1/4 wave plate in sliding mount for use with MA761
MA567	Acrylic stage plate, frosted, 94.5mm diameter for RZT and RZBD stands
MA568	Black and white plastic stage plate, 94.5mm diameter for RZP and RZ-FW stand
MA569	Glass stage plate, clear, 94.5mm diameter for RZT and RZBD stands

Other Accessories	Description
MA550/15	Polarizing filter (analyzer) in mount for RZ plan objective
MA667	Polarizing plate (polarizer) for use with RZT stands (recommended to use with MA550/15)
MA555	Gem clamp
MA593	Stage clips (paired)
MA688	Replacement pillar, 500mm long
MA767	Blue clear filter for RZT and RZBD stands, 59.8mm diameter
MA766	Heat protecting filter for RZT and RZBD stands, 59.8mm diameter

Sample System Configurations



MA748: Binocular viewing head
 MA730: UWF 10X eyepieces (2)
 RZ-B: 10:1 Zoom body with built-in dual iris diaphragm and click stops
 MA742: 1.0X Plan Achromat objective
 RZP: RZ Plain stand



MA748: Binocular viewing head
 MA730: UWF 10X eyepieces (2)
 MA751: Photo/video attachment with sliding 80/20 beam splitter
 RZ-B: 10:1 Zoom body with built-in dual iris diaphragm and click stops
 MA742: 1.0X Plan Achromat objective
 BAS-1: Heavy duty boom stand



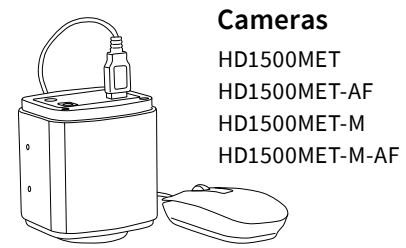
MA749: Ergonomic viewing head
 MA730: UWF 10X eyepieces (2)
 RZ-B: 10:1 Zoom body with built-in dual iris diaphragm and click stops
 MA742: 1.0X Plan Achromat objective
 RZBD/LED: Brightfield/Darkfield LED transmitted light stand



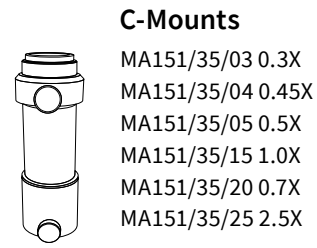
MA749: Ergonomic viewing head
 MA730: UWF 10X eyepieces (2)
 MA751: Photo/video attachment with sliding 80/20 beam splitter
 RZ-B: 10:1 Zoom body with built-in dual iris diaphragm and click stops
 MA742: 1.0X Plan Achromat objective
 RZT/100: Brightfield 100V, 30W transmitted light stand

RZ System Diagram

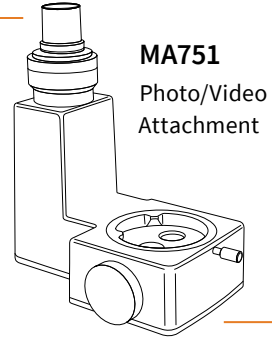
Cameras
 HD1500MET
 HD1500MET-AF
 HD1500MET-M
 HD1500MET-M-AF

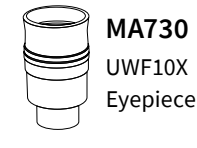
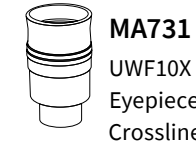
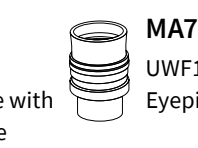
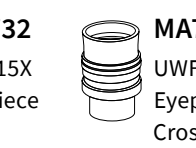
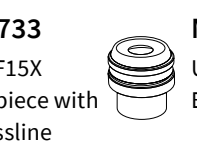



C-Mounts
 MA151/35/03 0.3X
 MA151/35/04 0.45X
 MA151/35/05 0.5X
 MA151/35/15 1.0X
 MA151/35/20 0.7X
 MA151/35/25 2.5X



MA751
 Photo/Video Attachment

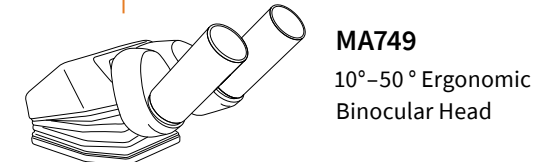


 **MA730** UWF10X Eyepiece
 **MA731** UWF10X Eyepiece with Crossline
 **MA732** UWF15X Eyepiece
 **MA733** UWF15X Eyepiece with Crossline
 **MA734** UWF20X Eyepiece
 **MA735** UWF20X Eyepiece with Crossline

MA748
 45° Binocular Head

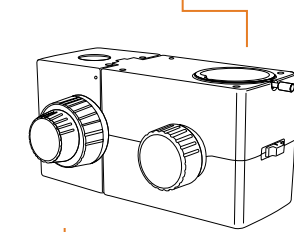


MA749
 10°-50° Ergonomic Binocular Head

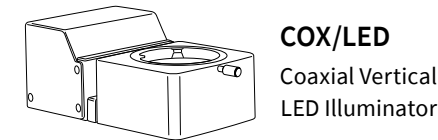


 **MA550/15** Polarizing Filter (Analyzer)
 **MA762** 1/4 Wave Plate

RZ-B
 Zoom Body

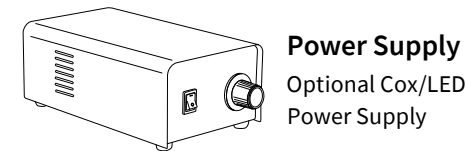


COX/LED
 Coaxial Vertical LED Illuminator



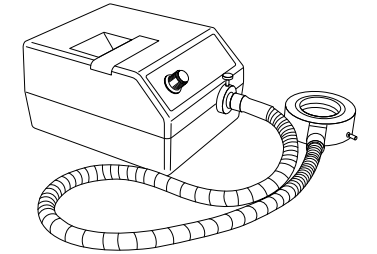
Optional Filters for COX Lights

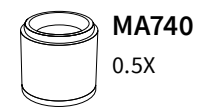


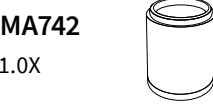
Power Supply
 Optional Cox/LED Power Supply



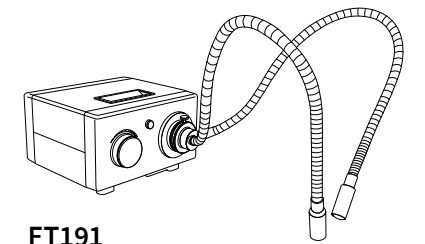
Optional Filters for COX Lights
 MA754 LB100 Clear Blue
 MA755 G533 Clear Green
 MA756 Y48 Clear Yellow
 MA757 ND2 Neutral Density
 MA758 ND8 Neutral Density

FL152
 Annular Fiber Optic Illumination System

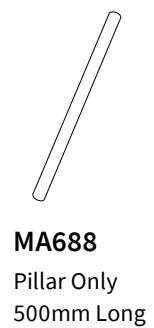


 **MA740** 0.5X
 **MA741** 0.75X
 **MA742** 1.0X
 **MA743** 1.5X

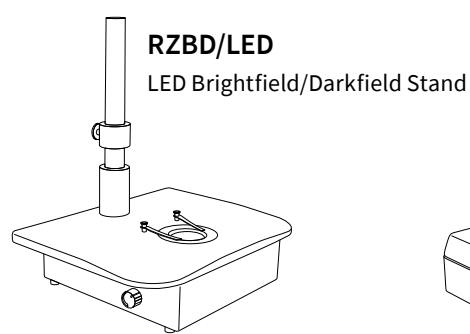
FT191
 Dual Arm Fiber Illumination System



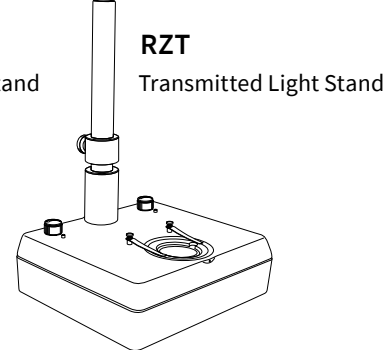
MA688
 Pillar Only
 500mm Long



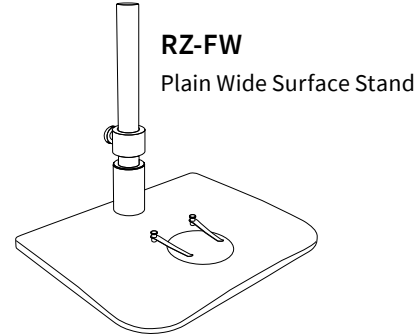
RZBD/LED
 LED Brightfield/Darkfield Stand



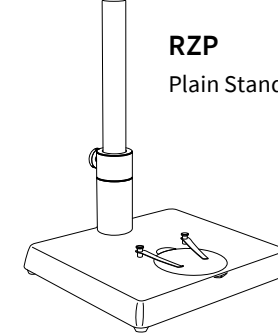
RZT
 Transmitted Light Stand



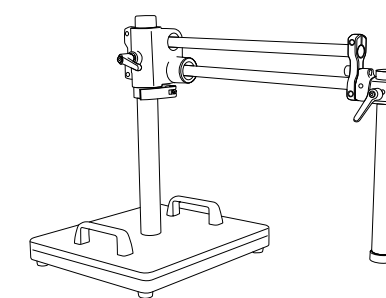
RZ-FW
 Plain Wide Surface Stand



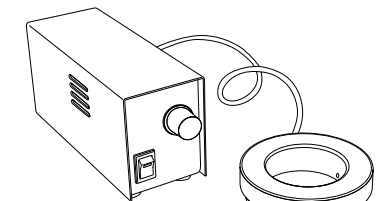
RZP
 Plain Stand



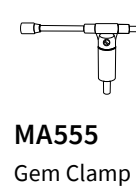
BAS-1
 Heavy Duty Boom Stand



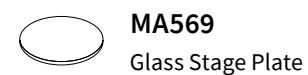
MA964
 LED Ring Illuminator with Auto Voltage Sensing Transformer



MA555
 Gem Clamp



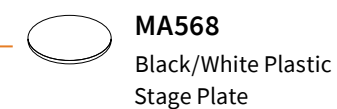
MA569
 Glass Stage Plate



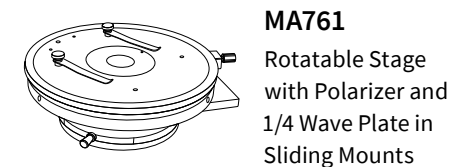
MA567
 Acrylic Frosted Stage Plate



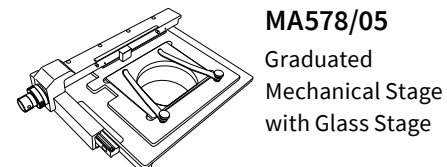
MA568
 Black/White Plastic Stage Plate



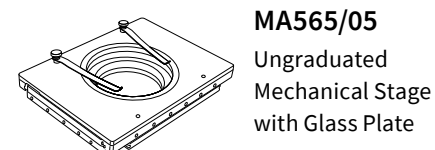
MA761
 Rotatable Stage with Polarizer and 1/4 Wave Plate in Sliding Mounts



MA578/05
 Graduated Mechanical Stage with Glass Stage




MA565/05
 Ungraduated Mechanical Stage with Glass Plate



MA578
 Graduated Mechanical Stage



MA565
 Ungraduated Mechanical Stage



MA308
 Adapter Mount



Specifications and design are subject to change without notice for improvements



Meiji Techno Co. Ltd.

-  322-1, Chikumazawa Miyoshi-machi,
Iruma-gun Saitama, 354-0043, Japan
-  (0)49-259-0111
-  (0)49-259-0113
-  meiji@meijitechno.co.jp
-  meijitechno.co.jp

Meiji Techno America

-  5895 Rue Ferrari,
San Jose, CA 95138, USA
-  408-226-3454
-  1-800-832-0060
-  408-226-0900
-  info@meijitechno.com
-  meijitechno.com



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