MEIJI TECHNO

Compact Zoome Microscope

DZ4-T

Instruction Manual

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Thank you for purchasing Meiji Techno’s DZ4-T.

Through reading of this User's manual prior to operating the DZ4-T, will certainly reward the user with a full understanding of the operational procedures, and performance of the system.

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Contents

Safety Precautions 1

In order to eliminate any potential causes of troubles, please care for the following safety information.

1) Please don't attempt to disassemble lens unit and stand.
2) Please keep the product in a clean condition where there is minimum humidity.
3) Please try to eliminate any chances of foreign materials like metal chips entering inside.
4) Please try to minimize any of heavy vibration and shock load onto the product.

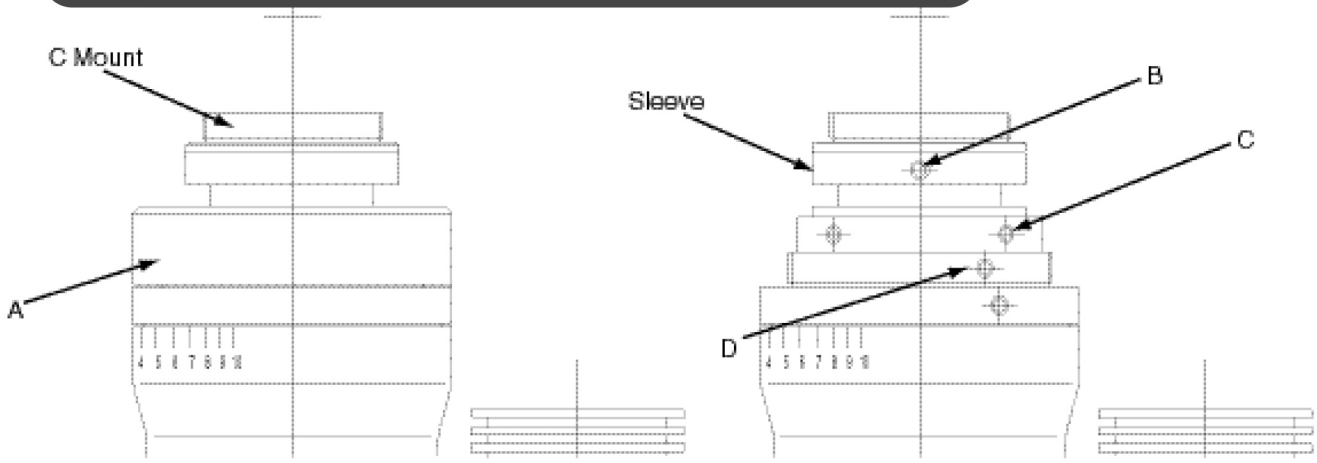
Caution

1) High magnification zoom lens is very precise optical device. Therefore, please be careful handling while transporting. In case of long distance transportation, please utilize packing materials used for original shipment.

2) Recommend not to grab any portion of lens unit itself, coarse & fine focusing handles.

2

Adjustment of Back Focus and CCD Centering



A : Cover
B : Set Screws for C Mount Fixing
C : Set Screws for Back Focus Adjustment.
D : Set Screws for CCD Centering.

【Adjust the back focus before adusting the centering】

1. Back Focus Adjustment (Set CCD camera and sample)
   1) Set zoom to highest magnifiation and adjust to focus.
   2) Set zoom to lowest magnification. If the image is out of focus, loosen set screws B and C. Hold the CCD camera and rotate the sleeve CW (to lower) or CCW (to lift) until the image is in focus. (To check wether the focal point is above or lower carefully lift up the CCD camera and see how the image changes.)
   3) After the adjustment, tighten set screws B and C.

2. CCD Centering
   1) Set zoom to highest magnification. Display an cross scale on the center of the monitor. Choose a dot or corner of a pattern and move the sample so the dot (corner) and cross scale overlap.
   2) Set zoom to lowest magnification. Use set screws D to overlap the cross scale and dot (corner).
   3) After adjustment tighten all three set screws.

2 Name of Components / Specifications

	Item	Description
Optical Tube	Zoom Ratio	12 (0.63~10X) 140°
	Image Size	φ9mm (Applicable to 1/2" CCD Camera)
	Wave Range	Visible Region (400~700nm)
Illumination	Method	Koehler Illumination
	Light Source	Spot LED or Exclusive Light Guide (Optional)
	Filters (Option)	Green Filter, Color Temperature Conversion Filter, Partial Shield Illumination, Filter Holder (Standard)

Weight Optical Tube+ Coaxial Reflecting Illuumination :900g

Specifications of Objectives

Type of Objectives	Optical Magnification	Total Magnification	N.A.	W.D	Resolution	Focal Depth	Weight
ZO5	0.42~5x	25.2~300x	0.01~0.07	45mm	33.55~4.79μm	±2750~56.12μm	190g
ZO15	1.25~15x	75~900x	0.03~0.2	46.2mm	11.18~1.68μm	±305.56~6.88μm	150g
ZO30	2.5~30x	150~1800x	0.06~0.35	35.25mm	5.59~0.93μm	±76.39~2.12μm	396g
ZO50	4.16~50x	249.6~3000x	0.1~0.45	14mm	3.36~0.75μm	±27.50~1.36μm	250g
ZO70	5.83~70x	349.8~4200x	0.14~0.7	7.1mm	2.40~0.48μm	±14.03~0.56μm	550g

The above total magnification is obtained with 1/2"CCD & 19"TV Monitor

How to use simple Focus Block DZ4-T - T/20 and DZ-T/38

Tightening Ring

To adjust weight of coarse handle. Note that being too tightened would be causes of malfunction on this Ring.

Coarse handle

Operation range: approx.37.5mm

Clamp knob

Fine handle

Operation range: approx.2mm
0.17mm/one rotation

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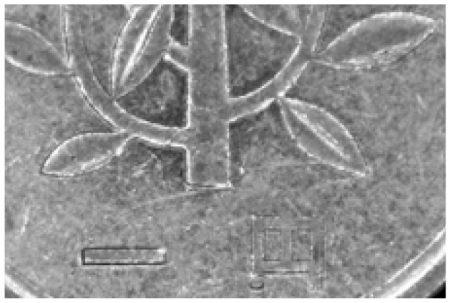
Remarks on Objective lens ZC5（0.5x to 7ｘ）;

Please be informed that among 4 objectves, only in case of ZC5, 4 corners on an image becomes darker when zoom ratio 1 to 3 under coaxial & transmitted illumination. This phenomenon is not faulty; this is because of optical limitation. Using it under zoom ratio 4 or up, 4 corners become normal. In case of using Ring Light, the above phenomenon does not occur.

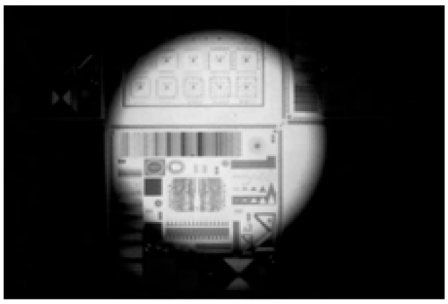
Coaxial Reflecting Illumination 0.5 x
（zoom ratio 1）



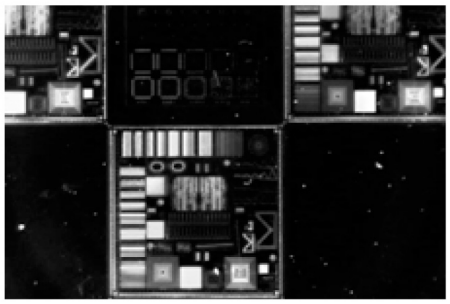
Ring Light 0.5 x （zoom ratio 1）

Coaxial Reflecting Illumination 1.5 x
（zoom ratio 3）

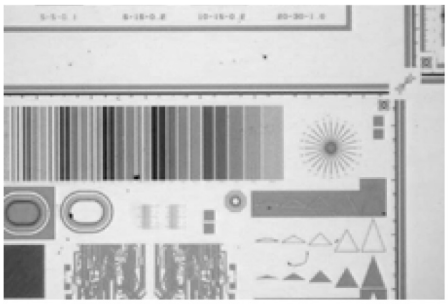
Sample in photo is a 1 YEN coin.
Size of a CCD camera is 1/2 type
(ø 8mm).



Coaxial Reflecting Illumination 0.5 x
（zoom ratio 1）



Ring Light 0.5 x （zoom ratio 1）



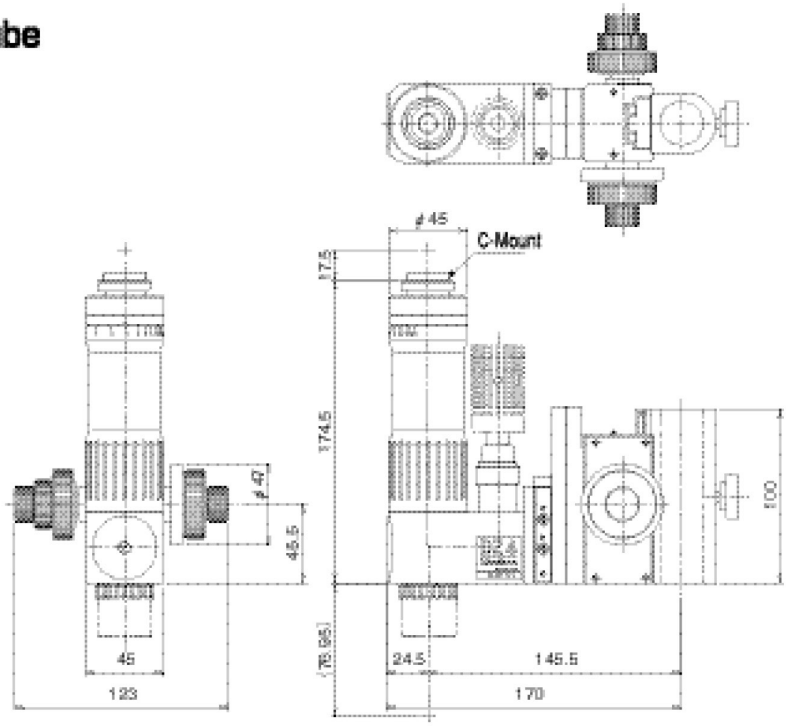
Coaxial Reflecting Illumination 1.5 x
（zoom ratio 3）

Sample in photo is a wafer. If the surface is mirror finish, this phenomenon (becoming 4 corners darker) appears noticeably, becoming circled image like a photo left above. Size of circled image is ø 3mm under 0.5X.

3 External Dimensions

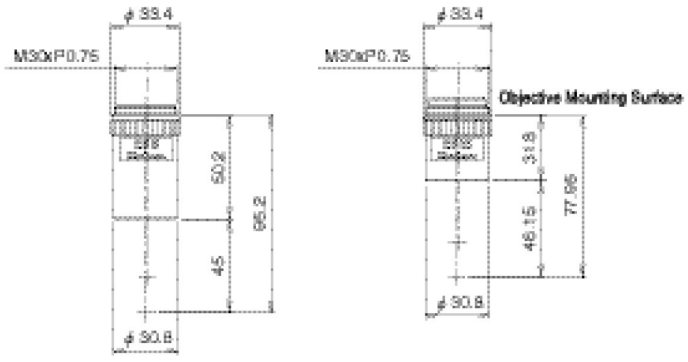
■ Outline View ■

Optical Tube

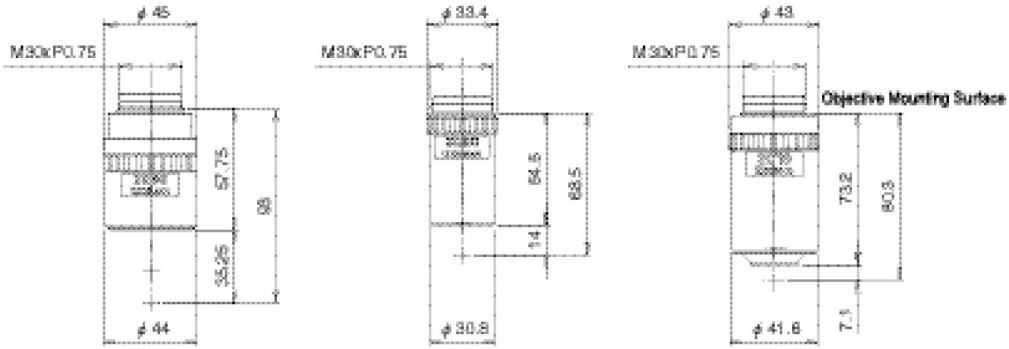


With ZC15 Objective Lens

Objectives



ZC5 ZC15



ZC30 ZC50 ZC70

4 Routine Maintenance

Microscope should be handled carefully and always kept clean.

1. Maintenance of lens surface

Wipe off dust deposited on the lens surface with a soft brush or blow it off with a blower. Lightly and carefully wipe off fingerprints or oily stains with a soft, clean, cotton cloth, gauze, or lens paper moistened with a suitable lens cleaner. Do not directly saturate the lens surface with cleaners that might creep into the optical system and impair their performance. Never use strong solvents to clean lens, mirrors and painted surfaces. When wiping the glass surface, do it lightly several times by sequentially using a new, unused portion of the cloth each time.

2. Maintenance of painted surfaces

When cleaning painted or plastic parts, do not use an organic solvent, but wipe them with a soft cotton cloth. The silicon cloth supplied with the microscope can be washed and reused when it becomes stained.

3. Disassembling of components

Do not attempt to disassemble the components because it will cause deterioration in the function and performance.

4. When not in use

When the microscope is not used for a short period, protect it from by covering it with the plastic dustcover, and store it in a dry place. When the microscope is not used for a long period, clean it, then detach the objectives and eyepieces, install the eyepiece tube caps, and revolving nosepiece caps, and cover it with a vinyl sheet for storage.

Put the objectives into the case and store them together with the eyepieces in a desiccation.

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