

# Di-Li DIGITAL-Mikroskope

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Ausgezeichnet beim Industriepreis + Innovationspreis



## Bedienungsanleitung Stereomikroskop **Di-Li 900 + Di-Li 900-T**



Danke, dass Sie sich für ein Di-Li Stereomikroskop entschieden haben. Di-Li Mikroskope sind Präzisionsinstrumente. Vor der Auslieferung werden Sie einer genauen Prüfung unterzogen. Sie sind einfach zu bedienen und bieten umfangreiche Funktionen.

Stereomikroskope werden dazu verwendet, dreidimensionale Objekte zu untersuchen, kleine Teile anzuschauen oder biologische Proben zu präparieren. Mit ihnen können auch Proben auf Objektträgern betrachtet werden.

Bitte diese Anleitung vor Gebrauch sorgfältig lesen.

**Entnehmen und handhaben Sie alle Komponenten des Mikroskops mit großer Vorsicht.**

**Vermeiden Sie die Berührung der Linsen. Vermeiden Sie auch den Kontakt mit Staub, Wasser oder anderen verunreinigenden Substanzen, da die Linsenoberflächen verschmutzen oder beschädigen und die Qualität des Bildes beeinträchtigen können.**

## **1. Vorbereitungen**

Die Einzelteile vorsichtig auspacken..

### **Packliste:**

1. Mikroskopkopf
2. Stativ mit Säule und Kopfhalter
3. 2 Stück Okulare mit Okularmuscheln
4. Ringleuchte (Ist außen am Styropor befestigt)

## **2. Montage**

- Den Fuß des Mikroskops aufrecht auf eine gerade Oberfläche stellen
- Mikroskopkopf einsetzen, Feststellschraube für Kopfhalter festdrehen
- Ringleuchte unten am Objektiv festschrauben.

## **3. Inbetriebnahme**

- Objektivabdeckung abschrauben abziehen
- Okulare einsetzen
- Beleuchtung einschalten
- Objektabstand etwa 90mm.
- Mit dem Fokussierknopf kann jetzt die Schärfe eingestellt werden.  
Gegebenenfalls die Höhe des Kopfhalters korrigieren und mit dem Haltering sichern.

## **5. Technische Eigenschaften**

### **Stereo-Zoom-Mikroskop:**

Stereo-Kopf: 45° Schrägeinblick, 360° drehbar, einstellbarer Augenabstand von 54-74 mm

Ständer: Flachsockel 250 x 170 mm

Vergrößerung: 7x – 45x

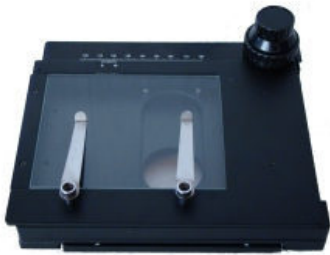
Okulare: Weitfeld 10 x, Okulartubus mit Okularmuscheln

Objektive: 0,7 – 4,5 Scharfstellung: beidseitig

Stativ: Stabiles Metallstativ, Säulenlänge 240 mm, schwarz-weiße Kunststoffplatte für Auflicht.

Beleuchtung: LED-Ringlicht für schattenfreies Auflicht, Montage am Objektiv

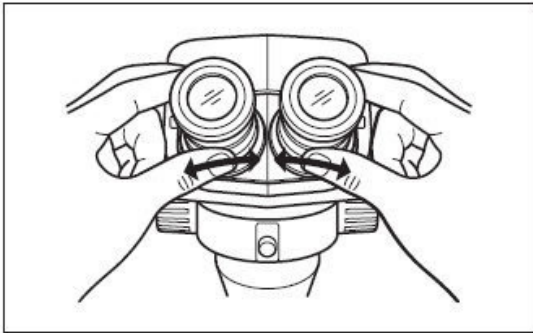
## 6. Zubehör



- **Kreuztisch Di-Li 1050**

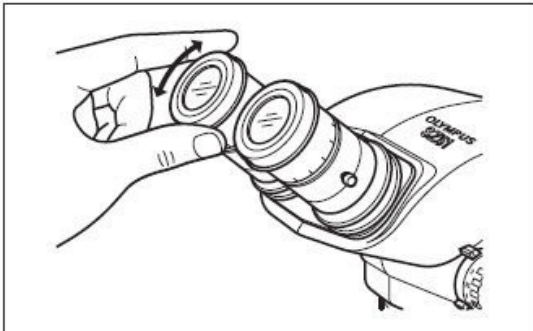
Aufsetzbarer Präzisions-Kreuztisch, Tischplatte 180 x 155 mm. Bewegung mittels horizontal montierten, coaxialen Triebknöpfen. Mit Teilung. Passend für alle Stative.

## Mikroskopieren

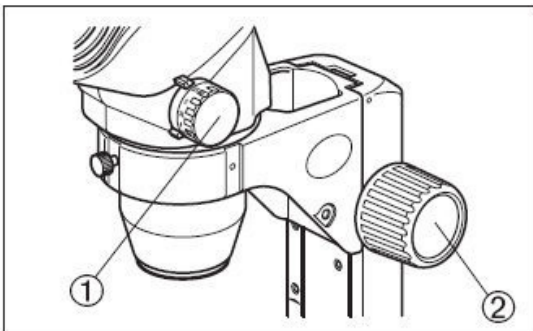


1. Das Objekt auf die Tischeinlage auflegen.

2. Den Augenabstand einstellen.



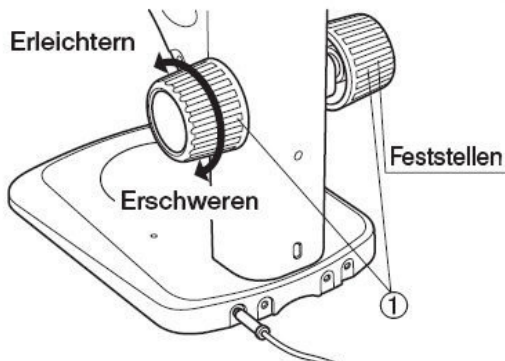
3. Die Dioptrien am Okular einstellen.



4. Den Zoom-Trieb auf die kleinste Vergrößerungsstufe einstellen und den Fokustrieb drehen, um das Objekt scharfzustellen.

5. Den Zoom-Trieb auf die gewünschte Vergrößerungsstufe einstellen und den Fokustrieb drehen, um das Objekt exakt scharfzustellen.

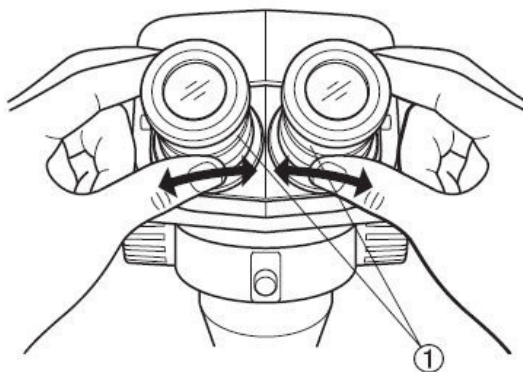
## Einstellen der Gängigkeit des Fokustriebs



Diese Einstellung bewirkt, dass die Drehung der Triebe erleichtert und gleichzeitig ein spontanes Absenken des Mikroskopstativs verhindert wird. Es wird empfohlen, die Gängigkeit etwas schwerer einzustellen als an der Stelle, an der ein spontanes Absenken stattfindet.

· Die linken und rechten Fokustriebe mit beiden Händen fassen, den linken Trieb festhalten und den rechten Trieb drehen. Die Gängigkeit der Triebe wird je nach Drehrichtung des rechten Triebs schwerer oder leichter.

## Einstellen des Augenabstands



Den linken und den rechten Okularstützen @ mit beiden Händen fassen, durch die Okulare blicken und den Okularabstand einstellen, bis das linke und das rechte Sehfeld vollständig zur Deckung gebracht sind.

## Verwendungszweck

Dieses Gerät dient der Darstellung vergrößerter Bilder von Objekten in Routine- und Forschungsanwendungen.

Das Gerät darf ausschließlich für den vorgesehenen Zweck verwendet werden.



Dieses Gerät entspricht den Anforderungen der Richtlinie 98/79/EC über medizinische Geräte für die In-vitro-Diagnostik. Das CE-Kennzeichen weist auf die Übereinstimmung mit der Richtlinie hin.

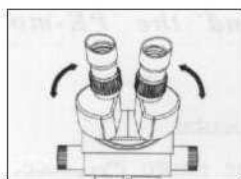
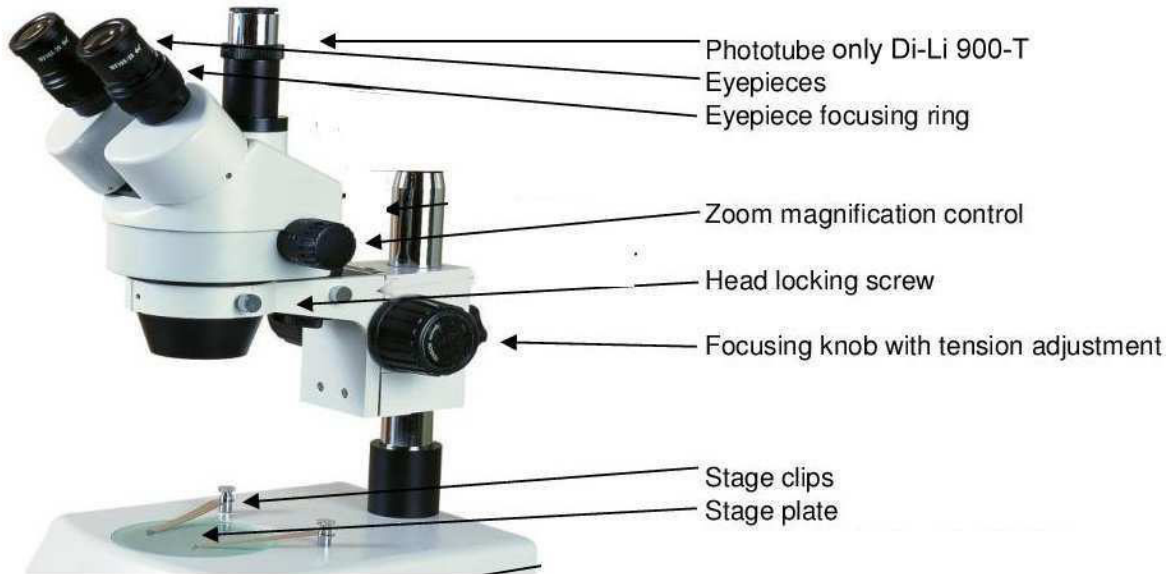
**Di-Li®** DIGITAL-Microscopes

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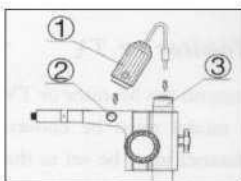
## STEREO ZOOM MICROSCOPE Di-Li 900 + Di-Li 900-T

### Manual Instruction

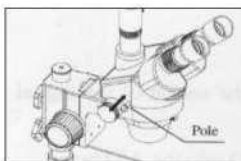




Adjust the interpupillary distance until it suits the viewer



Install the top lighting lamp unit: (1) insert the lamp and locate with the lamp tilt locking screw (2), Put the lamp cable plug into the socket on the pillar stand (3)



The control for switching the image to the phototube is located as shown

### Adjusting the zoom range:

- ⇒ Set the eyepiece focusing ring to zero i.e. to the white line.
- ⇒ Focus, using the focusing knob, on the specimen at the highest zoom setting i.e. 4.5x
- ⇒ Zoom to lowest zoom position i.e. 0.7x and refocus using the eyepiece focusing ring

*The zoom range will now be parfocal*

### Magnifications - Fields of view - working distances

Eyeiece	Auxiliary lens	None	0.5x	1.5x	2x
WF 10x/20	Magnification	7x – 45x	3.5x – 22.5x	10.5x – 67.5x	14x – 90x
	Field of view	28.6 – 4.4mm	51.7 – 8.9mm	19 – 3mm	14.3 – 2.2mm

Thank you for your purchasing.

This instruction manual is written for the users of Stereo Zoom Multiple Microscopes.

To ensure correct usage, read this manual carefully before operating the instruments

- Our Exclusive Distributors are authorized to reproduce or transmit this manual according to his/her Markets demands.
- The contents of this manual are subject to change without notice.
- Although every effort has been made to ensure the accuracy of this manual, if you note any points that are unclear or incorrect, contact us please.
- Some of the products described in this manual may not be included in the set you have purchased.

We are indicated to provide you with the utmost safety during use. Incorrect usage or disregard of the instructions may cause personal injury or property damage. For your own Safety, read the instruction manual carefully and thoroughly before using the product. Do not discard this manual. Always keep it near the product for easy reference. Be sure to follow the instructions marked with these symbols for your safety.

## **Be sure to always follow the below Rules:**

### **Warning**

#### **1. Intended use of this product**

This product is intended only for microscope. Do not use it for any other purpose.

#### **2. Do not disassemble**

Disassembly may result in damage to the instrument.

Never disassemble any part except as described in this operation manual. Contact us if you notice any malfunction of this instrument.

#### **3. Check the input voltage**

When using an illuminator, check that the input voltage displayed on the power supply of the illuminator matches the operating voltage. Contact us if the displayed voltage does not match the operating voltage. Use of an improperly matched illuminator may result in damage to equipment.

#### **4. Power cord**

Always turn the power switch off and unplug the power cord when replacing the lamp of an illuminator as failure to do so may result in electric shock or equipment damage.

#### **5. Heat from the light source**

When using an illuminator, do not place cloth or paper or highly flammable materials, such as gasoline, benzene, thinner or alcohol, near the lamp as there is a danger of fire.

Always use lamps that are of the specified rating only. For the lamp rating, please refer to the operation manual.

## **IV. Assembly**

**1 Place the stand on the level surface.**

**2 Mount the stage plate.**

Fit the stage plate into the stand base in the direction shown by the arrow in the illustration.

**3 The stand arm can be Raised or lowered. (If you do not need to lower the arm, jump to step 4.)**

Use the hexagonal wrench (large – supplied with the focusing stand) to loosen the arm fixing screw. Assemble the arm again using the screw hole at the lower side of the vertical slider. The arm will become 55 mm lower than its original position. Before tightening the screw, make sure that the two pins on the arm fit in the grooves on the vertical slider.

**4 Mount the zooming body.**

Lightly tighten the zooming body clamp screw to hold the zooming body on the arm.

Note) Do not over-tighten the zooming body clamp screw since it may cause damage to the instrument.

**5 Insert the eyepieces into the eyepiece sleeves.**

Be sure that it is inserted all the way until it touches the end of the sleeve.

Note: When inserting the 10X eyepiece, assure that it touches the end of the sleeve, because the rubber cover of the 10X eyepiece will obstruct the view of the sleeve end. When inserting, hold the rubber cover not the diopter ring. If not, a failure could result.

**6 The hexagonal wrenches can be stored in the rear of the pillar.**

(Refer to the diagram of the foregoing structure)

## **V. Usage**

**1. Preparation for Observation**

Adjust the torque of the focus knob.

Adjust the torque of the focus knob so as not to fall down the zooming body on its own weight.

**2. Adjust the interpupillary distance.**

This adjustment should be performed every time the observer is changed since the interpupillary distance differs between individuals. Adjust the interpupillary distance so that the view field for each eye is merged into one. Move while holding each sleeve with both hands.

**3. Adjust the diopter.**

This adjustment should be performed every time the observer is changed since the eyesight differs between individuals.

1. Turn the diopter rings on both eyepieces to set them at the 0 position

(match the 0 line with the index line).

2. Turn the zooming knob to 5X. Focus on the sample using the focus knob. (Refer to “2. Focusing”.)

3. Turn the zooming knob to 0.8X. Peering through the left eyepiece with the left eye, focus on the sample using the diopter ring on the left eyepiece. Then, peer through the right eyepiece with your right eye and focus on the sample using the diopter ring on the right eyepiece.

4 Repeat steps 2 and 3 until the image is kept focused even though the zooming magnification is



changed. This adjustment ensures sharp image throughout the zooming range. Increasing the torque. (To reduce the torque, turn the knob in the direction opposite to the arrow.)

## **5. Focusing**

### **1) Check the working distance.**

The distance between the focus plane and the bottom surface of the zooming body is called “the working distance”. Since the working distance is 115 mm, the focusing will become easier if you set the zooming body at the position where its bottom surface is 115 mm apart from the sample surface. Refer to the Table 1 () for the changes in working distances when the auxiliary objective is attached.

### **2) Focus on the sample.**

Turning the left and right focus knobs in the same direction will move the arm (on which the zooming body is mounted) up and down. Thus you can focus on the sample.

## **6. Zoom**

### **Change the zooming magnification.**

Turning the zooming knobs on the left and right side of the zooming body will change the magnification of the sample image.

#### **■ Total Magnification**

The zooming knob on the right has the indication of the zooming magnification. Total magnification can be calculated by multiplying the eyepiece magnification by the zooming magnification.

**Note: When the auxiliary objective is attached, multiply its magnification as well.**

## **7. If You Cannot Focus On The Sample Though The Zooming Body Is At The Highest Position.**

When you use the 0.5X auxiliary objective or observe a tall sample, you may not be able to focus on the sample though turning the focus knob to raise the zooming body to its highest position. In this case, use the C- auxiliary adapter available as an option.

Note: Attach the auxiliary objective first to the zooming body, and then mount the zooming body on the auxiliary adapter. for the sample heights which may be viewed.

## **VI. Using Accessories**

### **Auxiliary Objective**

Using auxiliary objective allows you to continuously change the eye level through a 40 mm range. Rotate the focus knobs on the focusing stand to raise or lower the zooming body to set to the height best suited for viewing.

## **VIII. Maintaining**

### **1. Installation location**

Note the following points when installing the stereoscopic microscope.

Install the microscope in a location with the temperature between 0° and 40°C, and humidity of less than 80%. If installed in a hot and humid location, mold may form on the lenses or condensation may occur inside, resulting in reduced performance or damage to the microscope.

Do not install the microscope in a location subject to direct sunlight.

Install the microscope in a location that is not subject to vibration.

Install the microscope in a location that is free from dust and dirt.

### **2. Handle the microscope carefully**

The stereoscopic microscope is a precision optical instrument. Handle it carefully and do not subject it to impact. Shock from impact during transportation or operation as well as forcible operations may cause damage to the instrument.

### **3. Cleaning the lenses**

Do not let dust, fingerprints, etc. to get on the lenses. Dirt on the lenses will adversely affect the view of the image. If any lenses become dirty, clean them as described below. Use an air blower to blow dust away. If this does not suffice, brush away the dust with a soft brush or gently wipe it away with a piece of gauze. Only if the lenses become dirty with fingerprints or grease stains, slightly dampen a piece of soft, clean cotton cloth with absolute alcohol (ethyl alcohol or methyl alcohol) and gently wipe away the dirt. Do not use the same part of the cloth more than once. Since absolute alcohol is highly flammable, be careful in handling it so that it does not ignite. Observe the manufacturer's handling instructions when handling absolute alcohol.

### **4. Cleaning painted or plastic parts**

Use of silicon cloth is recommended when cleaning painted parts, plastic parts and printed parts. If such a part becomes excessively dirty, wipe it gently with gauze dampened in a mild detergent solution. Do not use organic solvents (such as alcohol, ether, or paint thinner) as this may result in deformation of the part or remove of lettering.

### **5. Storage**

Store the microscope in a location with low humidity where mold is unlikely to form. Do not store the microscope in a location subject to direct sunlight or high temperature and humidity. During storage, place a plastic cover over the equipment to prevent dust accumulation.

### **6. Regular inspections**

Regular inspections are recommended in order to maintain peak performance.