



Original FINO

Germany

FINO Stereo-Mikroskop

86000

86001

86000

mit Stativ
with table stand
avec trépied de table
con el pie de sobremesa
con stativo
met statief
se stativem
med stativ
állványal

86001

mit Gelenkarm
with articulated arm
avec un bras articulé
con el brazo articulado
con braccio snodato
met scharnierarm
s kloubovým ramenem
med ledad arm
csuklós karral



FINO · der feine Unterschied · the fine difference · la fine différence · la fina diferencia · la fine differenza

Gebrauchsinformation · User Information · Mode d'emploi
Información sobre el uso · Informazioni d'uso
Gebruiksaanwijzing · Instrukcja stosowania

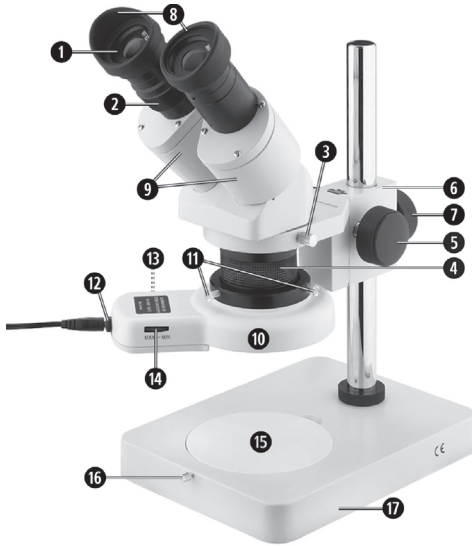
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1. Fields of application

For optimum control over all laboratory work. The adjustable magnification enables maximum micro-metre (μm) precision. Fine-tuning of the objective height using the round adjustment screws provided on both sides.

2. Device setup



- 1 Ocular
- 2 Dioptre compensation
- 3 Clamping screw for microscope head
- 4 Objective tube
- 5 Drive knob for height adjustment
- 6 Drive box with stand compartment
- 7 Locking knob (for locking when using the table stand)
- 8 Ocular viewfinders
- 9 Objectives
- 10 Episcopic illumination (ring light)
- 11 Plastic screws for episcopic illumination (ring lights)
- 12 Socket for connecting the mains adapter cable
- 13 On/off switch for episcopic illumination (ring light)
- 14 MAX-MIN control
- 15 Specimen stage
- 16 Clamping screw for specimen stage
- 17 Table stand

3. Safety precautions



It is essential to read the instructions for use carefully prior to operation and to keep these readily available.



This symbol indicates safety precautions where non-compliance can lead to damage of the device and its function.



This symbol indicates safety precautions where non-compliance can lead to risks for persons.



Warning! Failure to observe this safety information can result in electric shock! Keep the device out of the reach of children.

- Only connect the episcopic illumination (ring light) of the device to a properly connected mains socket with a mains voltage of 230 V/50 Hz using the mains adapter supplied.
- Check the mains adapter, power cable and device for damage prior to operation.
- If damage is identified, take the device out of service and ensure that it cannot be put back into operation. Have the device repaired by an authorised specialist or by FINO GmbH.
- Do not open or repair the adapter housing, otherwise safety is not ensured and the warranty will become void.
- Protect the device against damp and moisture.
- The mains adapter includes protection against overheating and switches itself off automatically after four hours of continuous operation. The device must be allowed to stand for approx. one hour before it may be switched on again.

Information on disconnecting from the mains:

- Unplug the mains adapter from the mains socket in order to fully disconnect the device from the mains.
- So that the mains adapter can be unplugged immediately in an emergency, position the device so that access to the mains socket is never obstructed.
- When the device is not in use, disconnect the mains adapter from the mains socket in order to exclude the risk of fire, prevent unintended activation, and save energy.
- Do not touch the mains adapter when your hands are wet as this could cause a short circuit or electric shock.
- Disconnect the mains adapter directly from the socket; do not pull on the power cable.
- Do not squash the power cable, knot it, or tie it to another cable.
- When laying the power cable, ensure that no-one can trip over it.

4. Getting started

4.1 Prior to commissioning

Before first operation check the item for transport damages. Claim any transport damages immediately with the supplier.



Check the device for its proper condition. In particular, check the mains connection for damage, such as pinching, cracks or ageing! Do not commence operation if the mains connection is damaged! Check the nominal voltage of the device prior to connecting to the mains. The voltage given on the type plate must correspond to the local mains voltage. The mains connection plug is to be plugged into a grounded, protected mains socket.

4.2 Location



Only operate the device in enclosed areas that are not exposed to environmental factors. Install the device on a dry, even surface. Select the location so that the device is not exposed to high temperatures, direct sunlight, strong vibrations, blows or impacts.

5. Handling

5.1 Using with a stand (item no. 86000)

The device is supplied almost entirely pre-assembled.

- Raise the microscope knob a few centimetres using the drive knob (5).
- Loosen the clamping screw for the microscope head (3) and turn the microscope knob so that the oculars (1) are facing the user. Secure the clamping screw (3) again.
- Place both ocular viewfinders (8) on the oculars (1).
- Unscrew the protective cap from the objective tube (4) by turning it anticlockwise.
- Look through both oculars (1) and adjust the ocular distance in line with the interpupillary distance by turning the objectives (9) inwards or outwards.
- For the required contrast in each case, select either the black or the white side of the specimen stage (15). To secure the stage, turn the clamping screw (16) tightly by hand.
- Place the specimen to be viewed under the microscope on the specimen stage.
- In the case of larger specimens, the distance setting selected using the drive knobs at the side may not be sufficient.

Adjust the distance using the locking knob (7).

Guide values:

Objective magnification	Ocular magnification	Overall magnification	Working distance(mm)	Field of view ø (mm)	Field number = Field of view ø (mm) x objective magnification
1x	W 5x	5x	79	20	20
2x	W 5x	10x	84	10	20
1x	W 10x	10x	83	19	19
2x	W 10x	20x	83	9,5	19
1x	W 15x	15x	83	12,4	12,4
2x	W 15x	30x	83	6,2	12,4
1x	W 20x	20x	83	9,6	9,6
2x	W 20x	40x	82	4,8	9,6

W= Widefield; Oculars 10x (supplied), other magnifications optionally available.

- Required magnification (1x or 2x) by turning the objective tube (4) by 90° in each case.
- For fine adjustment, use the drive button (5) to modify the distance to the object in order to achieve maximum image precision.
- Set dioptre compensation (2) to suit individual requirements.

- The working distance and field of vision can be further increased using the optional FINO add-on lens with 0.5x reducing optics (item no. 86006). The add-on lens can be screwed onto the quick-action revolver.

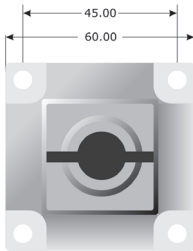
5.2 Using with a joint arm (item no. 86001)

The joint arm can be screwed on securely at the workstation or secured flexibly using the table clamp supplied. For both types of attachment, choose a smooth, stable, horizontal surface for assembly.

Fixed assembly of the joint arm:

The screws must be drilled directly into the work surface and leave drill holes.

- In the area selected for assembly, mark four drill holes at a distance of 45 mm and pre-drill the holes for the screws supplied:



- For easier assembly, remove the screw-on-flange from the lower end of the joint arm. To do so, unscrew and remove both socket head screws from the side of the flange using the socket wrench supplied and remove the flange from the pivot of the joint arm.
- Assemble the screw-on-flange on the worktop using the screws supplied.
- Carefully reinsert the pivot into the screw-on-flange at the lower end of the joint arm, screw in both socket head screws again, and tighten using the socket wrench. The tightening torque of the screws determines the ease of the swivel movement of the joint arm.

Flexible assembly of the joint arm using the table clamp:

The work surface is not damaged.

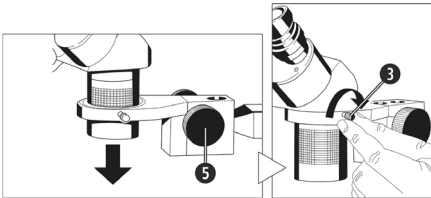
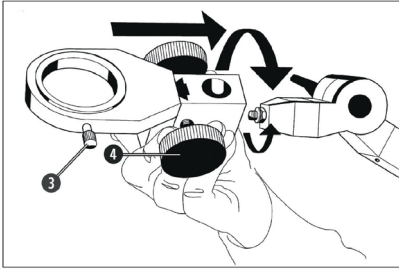


- Unscrew the four pre-assembled machine screws from the table clamp supplied.
- For easier assembly, remove the screw-on-flange from the lower end of the joint arm. To do so, unscrew and remove both socket head screws from the side of the flange using the socket wrench supplied and remove the flange from the pivot of the joint arm.
- Align the drill holes of the screw-on-flange over the drill holes of the table clamp and screw the screw-on-flange tightly onto the table clamp using the socket wrench and machine screws supplied.
- Attach the table clamp at the required location on the worktop.
- Carefully reinsert the pivot into the screw-on-flange at the lower end of the joint arm, screw in both socket head screws again, and tighten using the socket wrench. The tightening torque of the screws determines the ease of the swivel movement of the joint arm.

Attaching the FINO stereo microscope to the joint arm:

- Unscrew the locking knob for locking when using the table stand (7), and place to one side.
- Loosen the clamp screw for the microscope head (3) and remove the microscope head from the drive box (6).
- On the upper joint of the joint arm, you will find a small horizontal ball-and-socket joint with a threaded bolt and a pre-assembled hex nut. Screw the drive box (6) of the microscope onto this threaded bolt.

- With the drive box seated horizontally, secure using the hex nut.



- Place the microscope head back into the drive box and seat securely using the clamp screw (3).



Joint adjustment

The joint arm has a friction joint that is additionally supported at the centre and in the foot by internal springs.

In order to adjust the joint arm, the wing nuts on the joint arm must not be opened. The wing nuts are used for basic adjustment of the friction and for occasional readjustment.



Note:

The foot joint is adjusted using the quick-release lever. The quick-release lever can transmit forces that are so strong that the joint is completely blocked. In this case, it is essential that the quick-release lever is opened slightly prior to adjusting the joint arm, as the joint arm will otherwise be damaged.



Tip:

If the lever is pulled a little to the side away from the joint, the lever can be moved to any required position without opening the joint.

Using the microscope:

- Place both ocular viewfinders (8) on the oculars (1).
- Unscrew the protective cap from the objective tube (4) by turning it anticlockwise.
- Look through both oculars (1) and adjust the ocular distance in line with the interpupillary distance by turning the objectives (9) inwards or outwards.
- Place the specimen to be viewed under the microscope on the specimen stage.
- In the case of larger specimens, the distance setting selected using the drive knobs at the side may not be sufficient.

Adjusting the distance using the joint arm (see section on joint adjustment).

Guide values:

Objective magnification	Ocular magnification	Overall magnification	Working distance (mm)	Field of view ϕ (mm)	Field number = Field of view ϕ (mm) x objective magnification
1x	W 5x	5x	79	20	20
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- Required magnification (1x or 2x) by turning the objective tube (4) by 90° in each case.
- For fine adjustment, use the drive button (5) to modify the distance to the object in order to achieve maximum image precision.
- Set dioptre compensation (2) to suit individual requirements.
- The working distance and field of vision can be further increased using the optional FINO add-on lens with 0.5x reducing optics (item no. 86006). The add-on lens can be screwed onto the quick-action revolver.

5.3 Working with an LED ring light

LED episcopic illumination (ring light) is supplied for illumination of the specimen to be examined under the microscope.

Use:

- Unscrew the three plastic screws (11) out of the LED episcopic illumination (ring light) (10) only until these screws no longer extend into the opening for the objective tube (4).
- Push the LED episcopic illumination (ring light) (10) over the objective tube (4) as shown in the illustration under 2. Device setup, and carefully tighten the three plastic screws (11).
- Plug the mains adapter supplied into a properly connected socket and connect the connector of the adapter cable with the socket (12) on the LED episcopic illumination (ring light).
- Set the on/off switch for LED episcopic illumination (ring light) (13) to position "I".
- Set the required illumination using the MAX-MIN control (14).
- After use, set the on/off switch (13) to the "0" position and switch off the LED episcopic illumination (ring light).

6. Service and maintenance

- Do not use aggressive chemical substances, solvents or scouring agents to clean the surface.
- After use, cover the device with the dust-protection hood supplied in order to keep dust and dirt to a minimum.
- Remove dirt using a soft, slightly moistened cloth.
- Use a lens cleaning cloth to clean the oculars (1). Be very careful when cleaning the oculars as their surfaces can scratch easily.

7. Storage

Cover the device with the dust-protection hood supplied.

Store unit in a dry and dust-free place.

8. Technical data

8.1 With stand, item no. 86000

Metal stand, column length 18.0 cm; Flat base 20.0 x 15.0 cm; Widefield oculars (pair) WF 10x; Revolver 1x and 2x for magnification 10x/20x; LED episcopic illumination (ring light) 100-240 V, 50/60 Hz; 3.6 W; Power cable 2 m.

8.2 With joint arm, item no. 86001

Metal joint arm 85.0 cm; Widefield oculars (pair) 10x; Magnification 10x/20x; LED episcopic illumination (ring light) 100-240 V, 50/60 Hz; 3.6 W; Power cable 2 m.

9. Delivery forms

9.1 With stand, 1 unit, item no. 86000

FINO stereo microscope complete with stand; LED episcopic illumination (ring light); Widefield oculars (pair) 10x; Ocular viewfinders; Dust protection hood and power cable.

9.2 With joint arm, 1 unit, item no. 86001

FINO stereo microscope complete with spring-joint arm; Table clamp; Screw-on-flange; Four screws; Socket wrench; LED episcopic illumination (ring light); Widefield oculars (pair) 10x; Ocular viewfinders; Dust protection hood and power cable.

Accessories

FINO LED episcopic illumination (ring light)	1 pc.	86011
FINO widefield oculars (pair) WF 5x	1 pc.	86002
FINO add-on lens 0.5x	1 pc.	86006

10. Guarantee

Our technical recommendations of application are based on our own experiences and tests and should only be regarded as guidelines. It rests with the skills and experience of the user to verify that the products supplied by us are suitable for the intended procedures. Our products are undergoing a continuous further development. We reserve the right of changes in construction and composition. It is understood that we guarantee the impeccable quality of our products.

11. Disposal in accordance with EU guideline 2002/96/EU



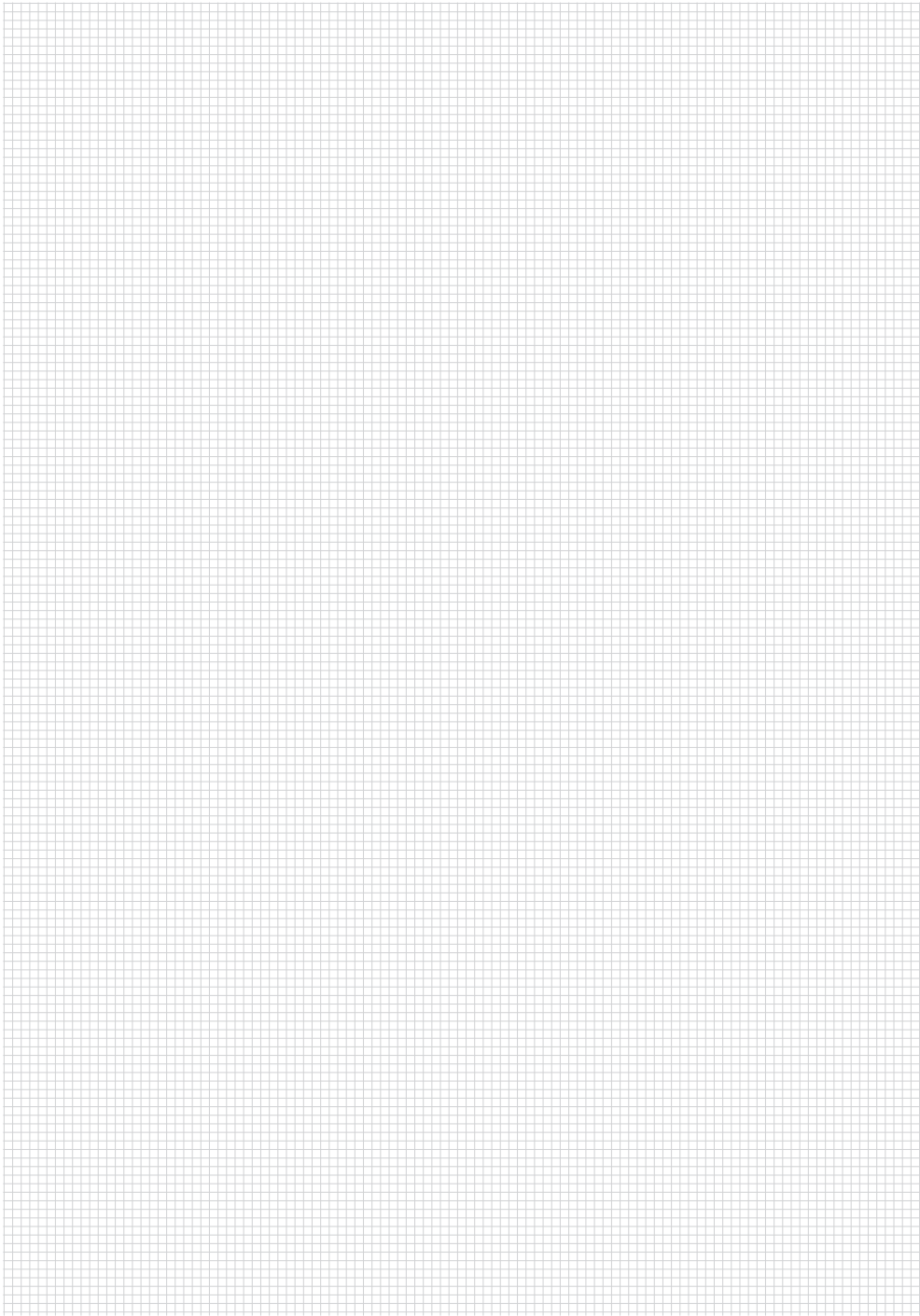
This equipment may not be disposed in domestic waste! Please contact the manufacturer or your dealer!

11.1 Registration Number

WEEE-Reg.-No. DE 3092617

Important!

FINO GmbH has prepared these instructions to help users operate the unit and to make it easier to take the unit into operation for the first time and then use it. FINO GmbH cannot be held liable for damages due to improper use or due to modifications made to the device itself. The warranty will be voided if the unit is used for any purpose other than its proper intended purpose. FINO GmbH has a policy of continuously developing and improving its products. FINO GmbH reserves the right to make changes or improvements to the products described in this document or to the document itself without prior notice. FINO GmbH offers no guarantees for the completeness or correctness of this document.



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