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1. Description MML1200, 1300 and 1400

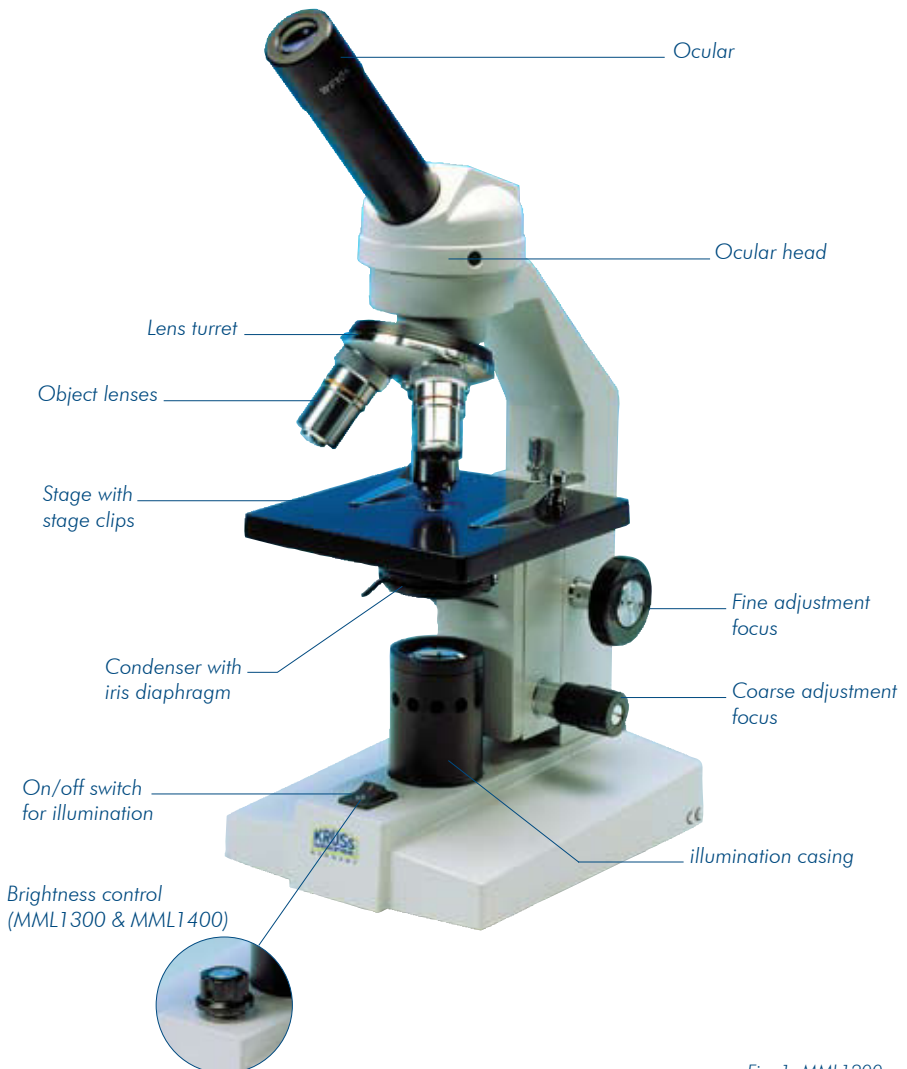


Fig. 1: MML1200

1. Description MML1500

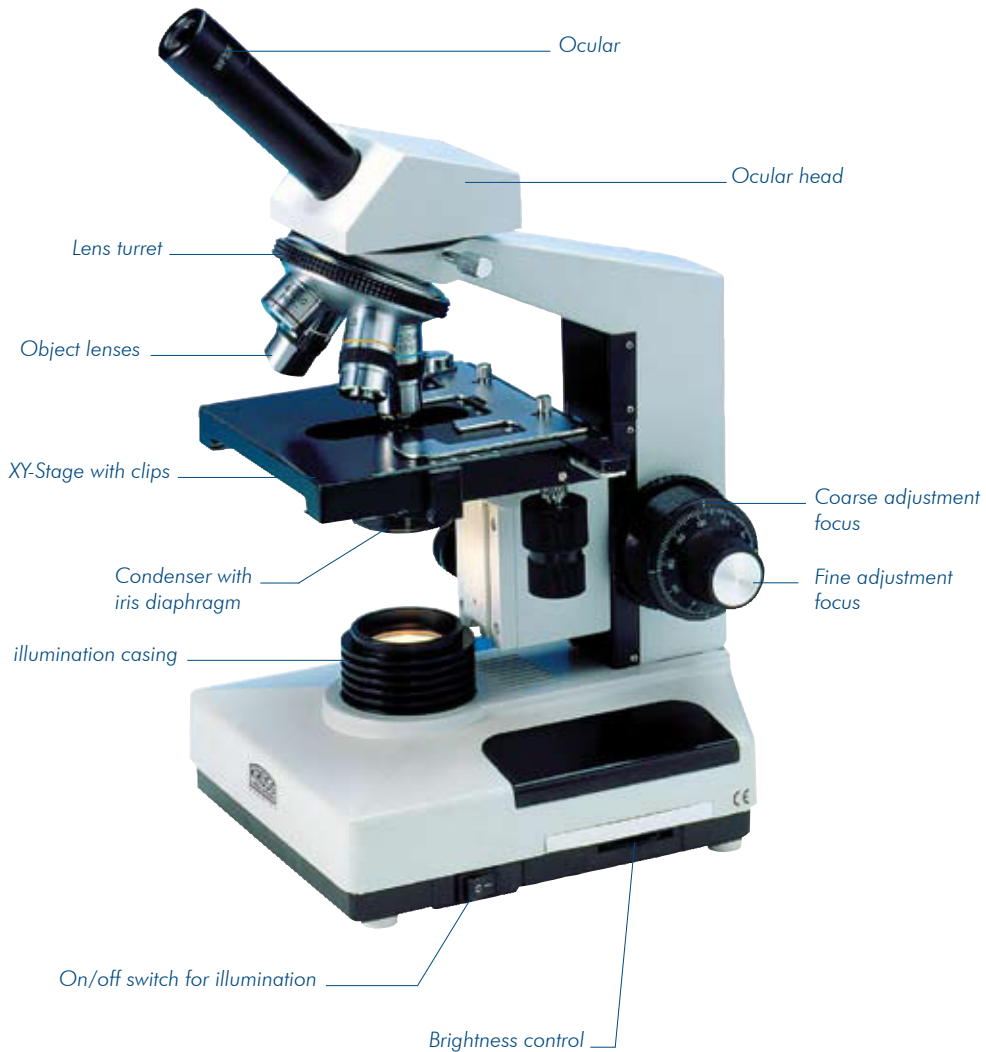


Fig. 2: MML1500

2. Introduction

Congratulations to your new microscope!

The microscopes of the MML series present the introduction to light microscopy and have been developed for simple application in schools and vocational training.

The microscopes are manufactured according to the highest optical and mechanical standards and are suitable for the long-term and low maintenance use in these fields.

All models of the MML series consist of a solid metal stand and are equipped with a 360-degree rotatable optical head with 45-degree inclined optical head.

A 10x planocular and exchangeable achromatic lenses form the optical equipment.

The illumination is composed of a 6 V halogen lamp, the brightfield Abbe condenser and the iris diaphragm. A polarisation device, XY-cross table as well as special oculars and lenses etc. are available for special applications. The MML1500 can also be upgraded with a trinocular head and a darkfield condenser.



A.KRÜSS Optronic would like to point out that this manual contains important information in safety and maintenance, and should therefore be provided to every user. A.KRÜSS Optronic rejects any liability for improper use of the microscope.

3. Unpacking and assembly

After unpacking the microscope, the cover is removed from the ocular head and the latter is fitted into the microscope.

Subsequently remove the caps from the lens turret and unscrew the object lenses from the plastic boxes into the designed positions of the turret.

Remove the protective cover of the stage and illumination.

The microscope and its basic functions are now ready for use.

4. Operation Instructions

4.1 Power connection

Connect the connecting lead with the power supply.
Turn on the power switch.

4.2 Adjustment

Place a sample on a glass disc and fix it to the stage with the clips.

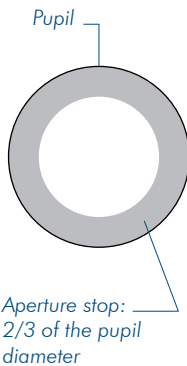
Focus the picture with the coarse adjustment and a 4x or 10x lens.

Select the requested lens.

Adjust the focus with the fine adjustment.

Move the condenser up to achieve a picture as bright as possible.

Attention: Make sure the condenser is not moved up too far and collides with the slide!



Adjust the ideal setting of contrast and resolution for the microscope picture with the aperture stop of the condenser. When removing the ocular and looking into the lens tube, the diameter of the aperture stop then visible should amount to about $2/3$ of the pupil diameter.

If the picture cannot be focused, the set screw behind the cross table must be unscrewed until the table can be lifted as far as necessary.

5. Technical data

MML1200

- Optical head with 45-degree inclined optical head
- 10x planocular
- Turret lens with achromatic lenses:
 - 4x NA 0.10
 - 10x NA 0.25
 - 40x NA 0.65
- Stand made of metal with coarse and fine adjustment
- Built-in illumination with reflector, 6 V 10 W
- Double lenses Abbe condenser NA 1.25, with iris diaphragm and filter holder

MML1300

- Optical head with 45-degree inclined optical head
- 10x planocular
- Turret lens with achromatic lenses:
 - 4x NA 0.10
 - 10x NA 0.25
 - 40x NA 0.65
- Stand made of metal with coarse and fine adjustment
- Built-in illumination with reflector, 6 V 10 W
- Double lenses Abbe condenser NA 1.25, with iris diaphragm and filter holder

MML1400

- Optical head with 45-degree inclined optical head
- 10x planocular
- Turret lens with achromatic lenses:
 - 4x NA 0.10
 - 10x NA 0.25
 - 40x NA 0.65
 - 100x NA 1.25 oil immersion
- Stand made of metal with coarse and fine adjustment
- Built-in illumination with reflector, 6 V 10 W, adjustable
- Double lenses Abbe condenser NA 1.25, with iris diaphragm and filter holder

MML1500

- Optical head with 45-degree inclined optical head
- 10x planocular
- Turret lens with achromatic lenses:
 - 4x NA 0.10
 - 10x NA 0.25
 - 40x NA 0.65
 - 100x NA 1.25 Öl-Immersion
- Stand made of metal with coarse and fine adjustment
- Built-in illumination with reflector, 6 V 10 W, adjustable
- Double lenses Abbe condenser NA 1.25, with iris diaphragm and filter holder
- XY-cross table

6 Power supply

Univ. power transformer 230 V, 50 Hz
 Output: 6 V DC

Illuminant Halogen lamp



Important information!

Pull the power plug before changing the halogen lamp by all means!

7. Maintenance

Like all precision devices, your microscope should be treated with care.

Protect the microscope against dust, condensation, vibration and direct solar radiation.

Keep the optics extremely clean. Dust can be removed with a soft brush or clean air, finger prints with a lintfree cloth soaked in a mixture of ether and alcohol (80% ether and 20% alcohol).

Special cleaning paper can be obtained from a photo store. Please do not apply acrid detergents to the microscope!

Place the microscope in the packaging carton or protect it with an anti-dust cover.



Important information!

Corrosive chemicals can harm the varnish or plastic housing!



Important information!

In case of defect, the microscope must be repaired by the company A.KRÜSS or an authorised workshop.

8. Recovery and Recycling

The device can be an important source of raw materials. Please do not dispose of as waste, but collect separately for the recycling and recovery of the contained materials. If disposed improperly, the materials may be damaging to the environment and human health.

The manufacturer of the device, A.KRÜSS Optronic GmbH, collects, uses and recycles the contained raw materials. However this recovery requires your support.

If you decide to dispose of this microscope, please do not try to open it up or to use parts of it in any other way than described in this manual, but return the device to the dealer you purchased it from.

The dealer should take the device back free of cost.

The recovery of the raw materials is effected with respect to the European guideline 2002/96/EC and any other applicable guideline.

Warranty

A. KRÜSS Optronic GmbH accepts the guarantee for material and manufacture of the microscope for a period of 24 months from the date of shipment. During this term of warranty A. KRÜSS Optronic GmbH shall remedy any defect by repairing or replacing the device if subject to the warranty claim.

For repair or service, the device must be sent to A. KRÜSS Optronic. In case of warranty repairs, A. KRÜSS Optronic GmbH bears the costs of the shipment; otherwise it is at the expense of the customer.

A. KRÜSS Optronic guarantees that the hardware designed by A. KRÜSS for this device is free from defects when used according to the information provided by the manufacturer.

However, A. KRÜSS Optronic does not guarantee the correct and uninterrupted operation of the device or that this instruction manual is error-free.

We are also not liable for subsequent damage.

Warranty limitations:

The warranty described above does not include errors and defects resulting from improper use, modifications, misuse or any operation outside the specified environment or unauthorized maintenance.

Further claims will not be accepted. A. KRÜSS Optronic will explicitly not guarantee the application or efficient use for certain applications.

A. KRÜSS reserves the right to modify this instruction manual and the technical data of the described device at any time.

KRÜSS microscopes are only fit for shipment if properly packed into the complete original packaging. If needed, request a replacement packaging from your supplier.

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