

ACCESSORIES Series

INSTRUCTION MANUAL

Model
CL-16.1
CL-18

Ver. 2.3 2023



Table of Contents

1.	Warning	3
2.	Safety Information	3
3.	Package content	4
3.1	CL-16.1	4
3.2	CL-18	4
4.	Unpacking	5
5.	Intended use	5
6.	Symbols and conventions	5
7.	Instrument description	6
7.1	CL-16.1	6
7.2	CL-18	6
8.	Assembling	8
8.1	System assembling	8
8.1.1	Installing adapter ring	8
8.1.2	Installing the ringlight	8
8.1.3	Connecting the power supply	8
8.1.4	Installing the analyzer (CL-18 only)	9
9.	Using the ringlight	10
9.1	CL-16.1	10
9.2	CL-18	10
9.2.1	Switching on	10
9.2.2	Adjusting light intensity	10
9.2.3	Adjusting polarized light	10
10.	Maintenance	11
11.	Troubleshooting	11
	Equipment disposal	12

1. Warning

This microscope is a scientific precision instrument designed to last for many years with a minimum of maintenance. It is built to high optical and mechanical standards and to withstand daily use. We remind you that this manual contains important information on safety and maintenance, and that it must therefore be made accessible to the instrument users. We decline any responsibility deriving from incorrect instrument use that does not comply with this manual.

2. Safety Information



Avoiding Electrical Shock

Before plugging in the power supply, make sure that the supplying voltage of your region matches with the operation voltage of the equipment and that the lamp switch is in off position. Users should observe all safety regulations of the region. The equipment has acquired the CE safety label. However, users have full responsibility to use this equipment safely. Please follow the guidelines below, and read this manual in its entirety to ensure safe operation of the unit.

3. Package content

3.1 CL-16.1



- ① Ringlight illuminator
- ② Control box

- ③ Adapter ring
- ④ Power cord

3.2 CL-18



- ① Ringlight illuminator
- ② Analyzer

- ③ Adapter ring
- ④ Power supply

4. Unpacking

The microscope is housed in a moulded Styrofoam container. Remove the tape from the edge of the container and lift the top half of the container. Take some care to avoid that the optical items (objectives and eyepieces) fall out and get damaged. Using both hands (one around the arm and one around the base), lift the microscope from the container and put it on a stable desk.



Do not touch with bare hands optical surfaces such as lenses, filters or glasses. Traces of grease or other residuals may deteriorate the final image quality and corrode the optics surface in a short time.

5. Intended use

Standard models

For research and teaching use only. Not intended for any animal or human therapeutic or diagnostic use.

IVD Models

Also for diagnostic use, aimed at obtaining information on the physiological or pathological situation of the subject.

6. Symbols and conventions

The following chart is an illustrated glossary of the symbols that are used in this manual.



CAUTION

This symbol indicates a potential risk and alerts you to proceed with caution.



ELECTRICAL SHOCK

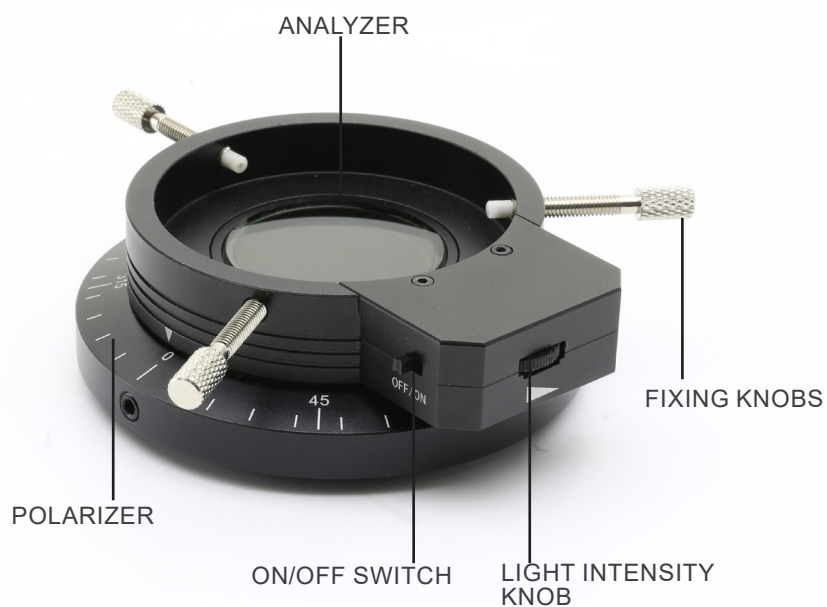
This symbol indicates a risk of electrical shock.

7. Instrument description

7.1 CL-16.1



7.2 CL-18



8. Assembling

8.1 System assembling

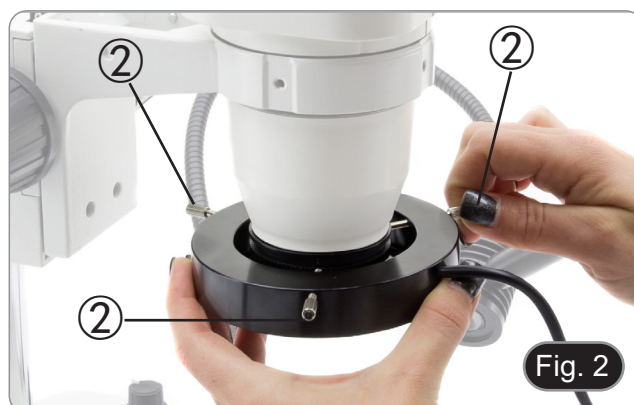
8.1.1 Installing adapter ring

1. Screw the adapter ring at the end of the microscope body. (Fig. 1)
- The adapter ring has a groove ① for the connection of the ringlight illuminator.
 - In case of installation on SZP series the adapter ring is not needed. The SZP objective has a groove for the adaptation of the ringlight illuminator.



8.1.2 Installing the ringlight

1. Open the fixing knobs ② on the ringlight and fit the illuminator on the adapter ring.
 2. Screw the fixing knobs until the tips of the knobs enter into the groove of the adapter ring. (Fig. 2)
- Only for CL-18: before installing the ringlight it is mandatory to install the analyzer (see chapter 8.1.4).



8.1.3 Connecting the power supply

CL-16.1

1. Plug the power cord on the back of the control box. (Fig. 3).



CL-18

1. Plug the power supply on the side of the ringlight illuminator. (Fig. 4).



8.1.4 Installing the analyzer (CL-18 only)

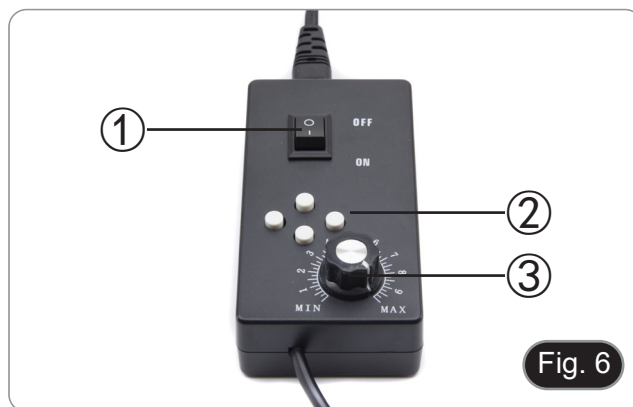
1. Put the analyzer into the hole of the ringlight. (Fig. 5)
2. Install the assembly on the adapter ring as already explained in 8.1.2.



9. Using the ringlight

9.1 CL-16.1

1. Use ON/OFF switch ① to turn the ringlight on. (Fig. 6)
 - **When the main switch is switched off, all the LEDs turn off. Switching on the main switch will not turn on the LED sectors. This is not a defect.**
2. Press one or all of the sector buttons ② to switch on the relevant LED sector.
 - The user can separately turn on or off each of the 4 sectors on the ringlight.
3. Use the light intensity control knob ③ to adjust the light intensity.



9.2 CL-18

9.2.1 Switching on

1. Use ON/OFF switch ④ to turn the ringlight on. (Fig. 7)



9.2.2 Adjusting light intensity

1. Use the light intensity control knob ⑤ to adjust the light intensity. (Fig. 8)



9.2.3 Adjusting polarized light

1. While observing into the eyepieces, rotate the polarizer ⑥ to adjust the illumination. (Fig. 9)
 - The printed scale on the polarizer can be used for reference. It is not used for precise measurement in polarized light.



10. Maintenance

Device environment

This device is recommended to be used in a clean, dry and shock free environment with a temperature of 5°-40°C and a maximum relative humidity of 85 % (non condensing). Use a dehumidifier if needed.

To think about when and after using the device



- The device should always be kept vertically when moving it and be careful so that no moving parts fall out.
- Never mishandle or impose unnecessary force on the device.
- Never attempt to service the device yourself.
- After use, turn off the light immediately, cover the whole microscope with the provided dust-cover, and keep it in a dry and clean place.

Electrical safety precautions



- Before plugging in the power supply, make sure that the supplying voltage of your region matches with the operation voltage of the equipment and that the lamp switch is in “OFF” position.
- Users should observe all safety regulations of the region.
- The equipment has acquired the CE safety label. However, users do have full responsibility to use this equipment safely.

Cleaning the optics

- If the optical parts need to be cleaned try first to: use compressed air.
- If that is not sufficient: use a soft lint-free piece of cloth with water and a mild detergent.
- And as a final option: use the piece of cloth moistened with a 3:7 mixture of ethanol and ether.
- **Note: ethanol and ether are highly flammable liquids. Do not use them near a heat source, near sparks or near electric equipment. Use these chemicals in a well ventilated room.**
- Remember to never wipe the surface of any optical items with your hands. Fingerprints can damage the optics.

For the best results, use the OPTIKA cleaning kit (see catalogue).

If you need to send the device to Optika for maintenance, please use the original packaging.

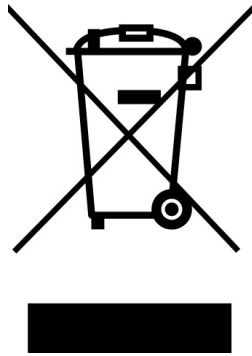
11. Troubleshooting

Review the information in the table below to troubleshoot operating problems.

PROBLEM	CAUSE	SOLUTION
I. Optical System		
LED does not light.	Power cord is unplugged.	Plug power cord into the power outlet.
	Main switch is in “OFF” position	Put the main switch to “ON”
	Only for CL-16.1: LED sector buttons are in “OFF” position	Press the sector buttons to switch the LEDs on.
Light too dim on the sample	Only one sector is lit up.	Press the sector buttons to switch the LEDs on.
	Intensity set too low.	Adjust the intensity knob.
	Only for CL-18: polarizer is rotated into a total extinction position causing a dark image	Adjust the polarizer position

Equipment disposal

Art.13 Dlsg 25 July 2005 N°151. “According to directives 2002/95/EC, 2002/96/EC and 2003/108/EC relating to the reduction in the use of hazardous substances in electrical and electronic equipment and waste disposal.”



The basket symbol on equipment or on its box indicates that the product at the end of its useful life should be collected separately from other waste. The separate collection of this equipment at the end of its lifetime is organized and managed by the producer. The user will have to contact the manufacturer and follow the rules that he adopted for end-of-life equipment collection. The collection of the equipment for recycling, treatment and environmentally compatible disposal, helps to prevent possible adverse effects on the environment and health and promotes reuse and/or recycling of materials of the equipment. Improper disposal of the product involves the application of administrative penalties as provided by the laws in force.

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