

# Colposcope M965Z

## User's Manual



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## 1 - General and Safety Information

This Manual intends to familiarize you with the utilization and safety precautions of your equipment. Contact SEILER or your dealer whenever you have questions about its function or use. SEILER reserves itself the right of perform changes or modifications on its products due to improvements without notice. Always contact a SEILER representative or your dealer before performing any modifications to your equipment. SEILER does not take responsibility for damages resulting from misuse or failure to follow the directions incorporated in this manual. SEILER does not take responsibility for any third party claims due to misuse of this equipment.

### 1a – Recommendations:

Some information is important, and require special attention. They are classified according to the risk degree and are highlighted below:



**DANGER:** This symbol and the text identify potential danger if not handled correctly.



**ATTENTION:** This symbol and the text identify the possibility of potential damage if not handled correctly

**NOTICE:** This text marks the possibility of damage to the equipment.

### 1b – Safety Advertisements



**DANGER:** The greater the oxygen concentration, the faster is the combustion. There is fire risk when electric equipment is used in high oxygen concentrated locations. There is possibility of explosion when used in presence of flammable material. This equipment is not suitable for use on anesthetics blended with air, oxygen or nitrous oxide environment. Before using the equipment, read carefully the user's manual, its accessories utilization and safety and precautions.



**DANGER:** Contamination risk. Special attention must be kept with equipment cleaning and disinfecting in order to avoid undesirable risks.



**ATTENTION:** Electric shock risk. Handle this product as you would any product that utilizes electricity.



**ATTENTION:** Be sure the lamp is at room temperature before touching it.



**ATTENTION** Power Cable. Never pull the cable to disconnect it from the outlet; always pull it handling the connector. To turn off the equipment, always switch off the main switch. Do not set objects on it, as it can be damaged by the weight. Avoid stepping on it. Do not let it over-stretch. Any extension cable must be used carefully, considering its capability; it may overheat. In case of non-operation for long periods, unplug the cable from the outlet.

### **1c – Precautions**

**NOTICE:** Be careful when handling the Fiber Optic Cable. Do not bend or twist it. In its construction, hundreds of fibers were used, and they can break, reducing considerably the light flux. If you need to remove (cleaning, maintenance, etc.), roll it up in a 10cm (4”) radius and place it in a safe place. Special attention must be made with the ends, as they are more rigid and do not bend.

**NOTICE:** Avoid mechanical shocks to the optical head or to the binoculars which can cause optical misalignment.

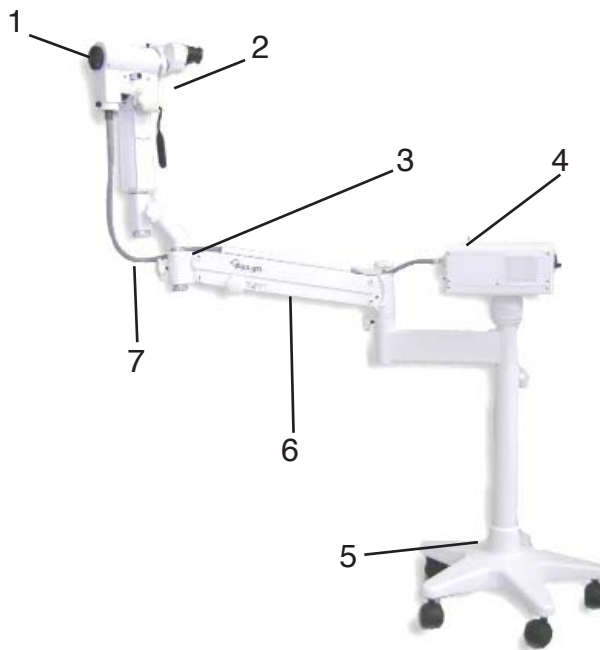
**NOTICE:** Only after you are sure the equipment is correctly assembled and the line voltage correctly selected, connect the equipment power cable to the wall outlet.

### **2 - Description and Technical Data**

This equipment was developed under rigid manufacture and quality control standards, produced for utilization on surgical and diagnosis procedures.

The following figure describes the equipment parts:

1. Optical head
2. Binoculars
3. Elbow
4. Cold light generator
5. Base with casters
6. Pantographic arm
7. Optical fiber cable



<b>Technical Data</b>	
<b>Optical head</b>	
Type	Telephoto Porro System
Binoculars	Straight, f=160mm
Objective	F=300mm
Eyepiece	Wide angle, 12.5x adjustable
Continuous zoom magnification system manual	0,35 – 2,1 (2.0x to 14.0x)
Observed field	From Ø91mm to Ø15mm
Illuminated field	Ø75mm
Interpupillary distance	42 to 77mm
Focus	Macro – by moving stand set Micro – manual with adjusting ring
Filter	Green
Objective lens height	920mm to 1500mm

Objective lens height	920 to 1500mm
Weight	2.75kg (6 lbs.)
<b>Illumination System</b>	
Lamp	Dichroic, 15V, 150W
Power Supply	110 or 220VAC
<b>Stand Set</b>	
Base	Star type, five casters
Elbow	90°, length=100mm
First arm	Supports cold light generator, length=300mm
Pantographic arm	Length=514mm stroke=580mm
Total weight	58.4Kg (129 lbs.)

### 3 – Equipment Reception

#### 3a – Check out

Immediately inform the delivery company in case of damage to the packing.

#### 3b - Parts List

The following parts are supplied along with the equipment

Item:	Quantity:
Base with casters	01
Column	01
First Arm	01
Cold light generator	01
Lamp	01
Pantographic arm	01
Optical head with fork	01
Straight binoculars	01
Eyepieces	02
Fiber Optic cable	01
Power cable	01

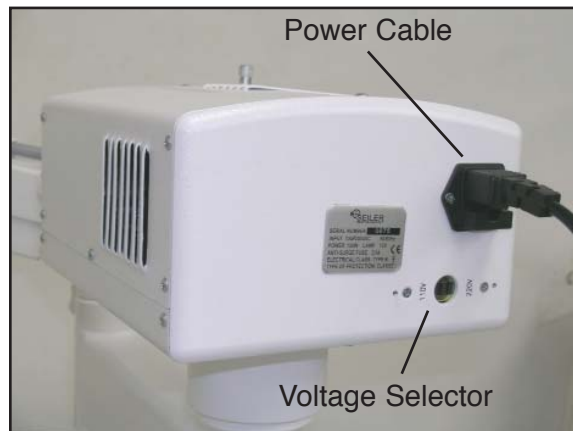
If any part is missing contact SEILER or your dealer. Have the serial number available.

### 4 - Assembly and Installation

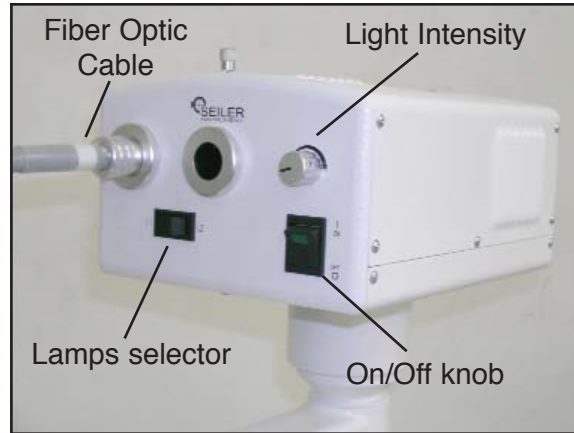
Please read the manual before assembly.

### 5 - Operation

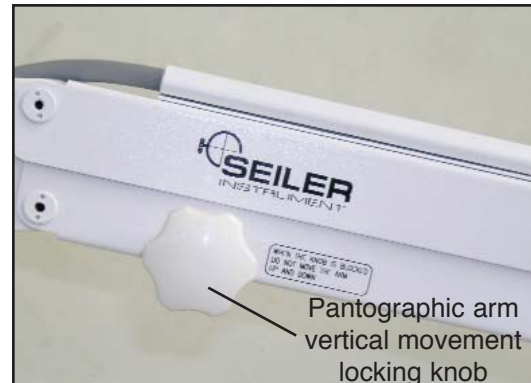
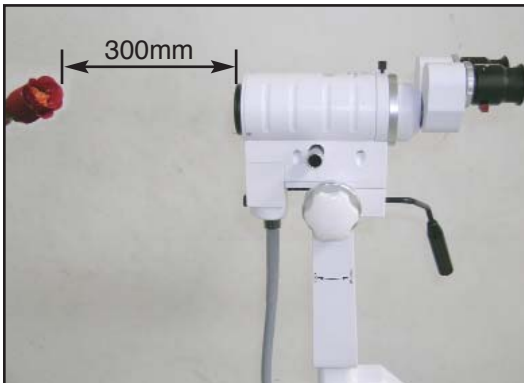
Connect the power cable in the rear panel of the power supply. Select the input voltage according to your local voltage (110/220V).



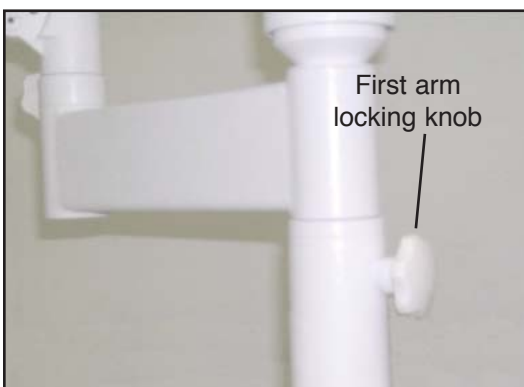
Connect the fiber optic cable to one of the ports on the power supply. Choose the lamp to be used utilizing the selector switch. Switch on the power supply at the on-off knob and select the light intensity by turning the intensity knob.



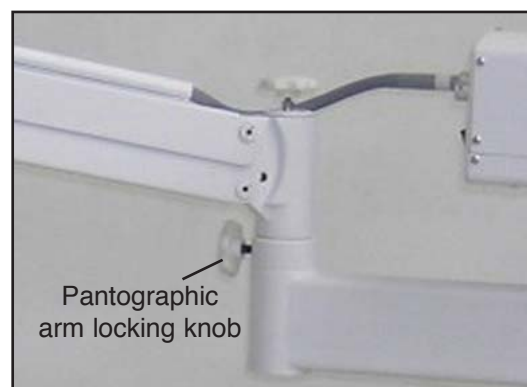
Place the microscope at the distance marked on the Objective lens. Standard objective lens distance is 300mm.



Adjust first arm locking knob for locking or turning the arm.

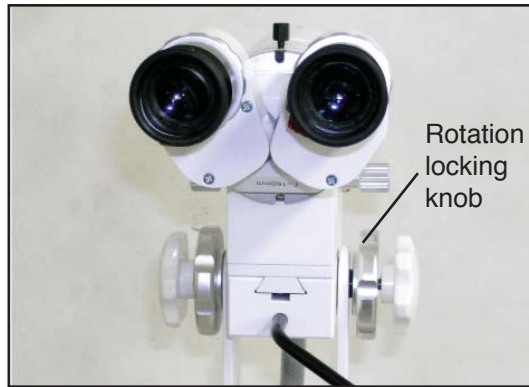
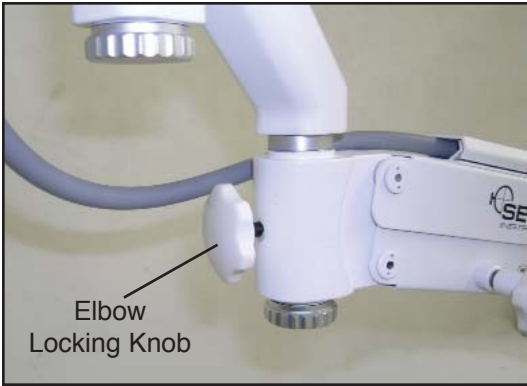


Adjust pantographic arm locking knob to immobilize turning movement.

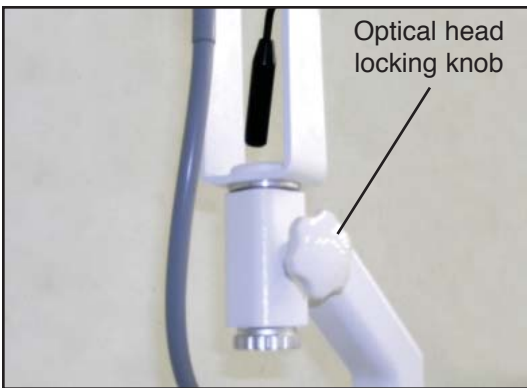


Pantographic arm vertical movement may be locked by vertical movement locking knob.

Elbow turning movement may be locked adjusting elbow locking knob.

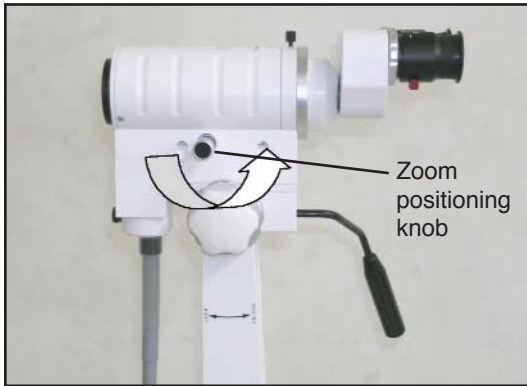


Optical head turning movement may be locked adjusting optical head locking knob

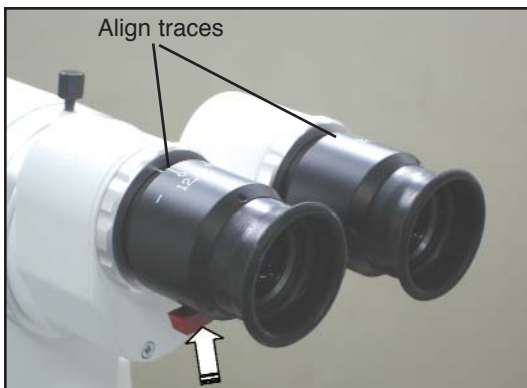


The rotation movement of the optical head can be locked by the aluminum knob on the right side.

Place the manual zoom at the highest magnification position.



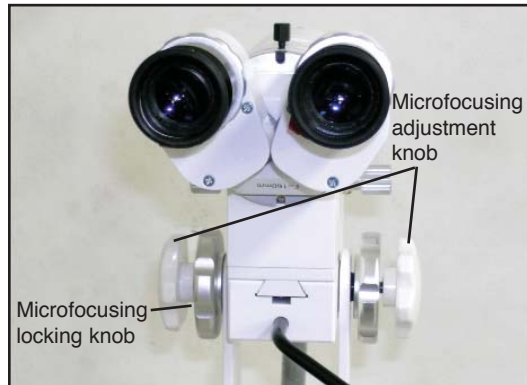
Adjust eyepieces to zero diopters by pressing and turning the red knob on the eyepieces



Adjust light intensity by turning the cold light generator knob.



Looking through the left eyepiece, and closing the right eye, adjust the focus with the microfocusing adjustment knob until you see a clear image of an object or specimen.



Look through the right eyepiece, and close left the eye. Adjust right eye focus by adjusting diopter adjusting ring on right eyepiece.

Adjust for your interpupillary distance by moving the eyepiece tubes outward or inward until you see one image.



Object image must be clear and stereoscopic. When needed, apply filter. Selector lever is on the right side of the optical head.



Always switch off the equipment with the On-Off knob.



In order to increase lamp life, before switching off the equipment reduce light intensity to a minimum and wait about 1 minute.

## 6 – Maintenance

### 6a – Lamp replacement

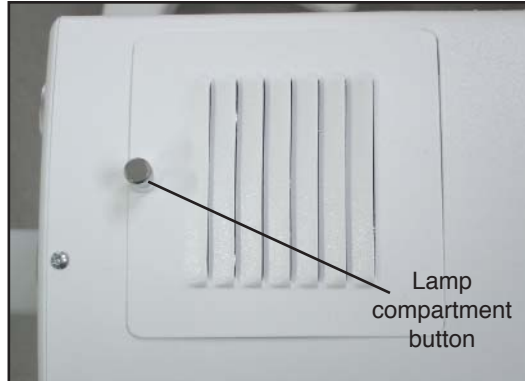
Switch off equipment and unplug power cable.



**ATTENTION:** Be sure the lamp is at room temperature before touching it.

**NOTICE:** Do not touch the glass bulb with your fingers. The skin's natural grease on the glass will reduce bulb life considerably.

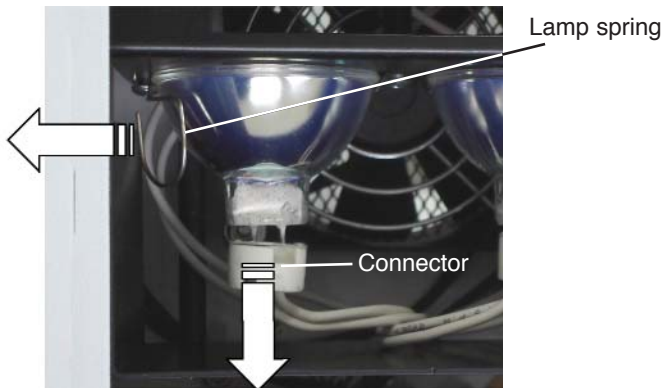
Loosen lamp compartment button.



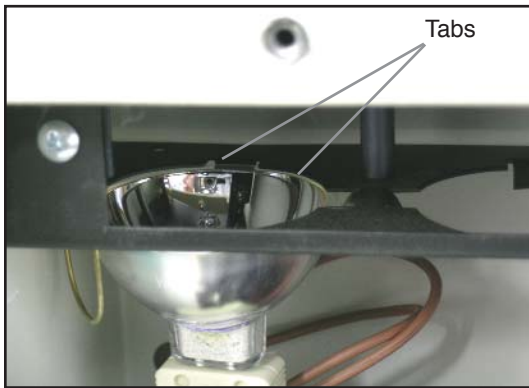
Open compartment. Lamp is at the support.



Push lamp spring outward to loosing it. Disconnect connector and remove lamp.

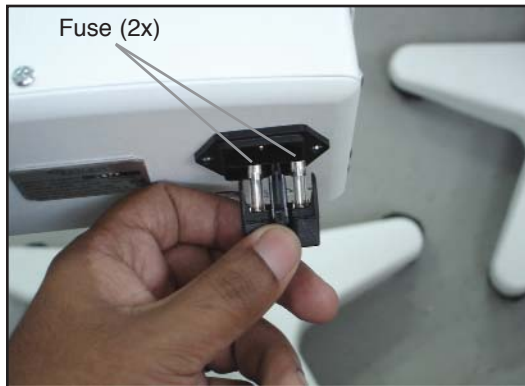


Set new lamp and connector using the reverse procedure. Make sure lamp is centered on support. A non-centered lamp may cause light loss. Lamp must be centered by the means of tabs as guides.



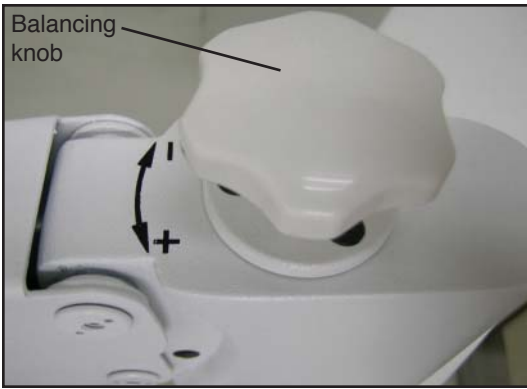
### 6b – Fuse replacement

Switch off equipment and unplug power cable. Fuses (2) are on cold light generator on the rear panel. Disassemble the fuse-holder and change the fuses.



### 6c – Pantographic arm balancing

If an accessory is installed you can adjust pantographic arm balancing. The balancing knob (on the pantographic arm upper side) increases pantographic arm inner spring tension when turned counterclockwise. Lift pantographic arm fully before adjusting the balancing knob. Adjust it until pantographic arm holds still at the desired position. At the extreme top or bottom of arm travel, minor drifting is normal.



### 6e1 - Lenses

For lens surface cleaning use cotton rolled on a stick lightly soaked in a glutaraldehyde water solution at 2% for 30 minutes. Rinse and apply alcohol. Using soft and circular movements, clean its surface until you are sure it is well cleaned. Avoid spreading the impurities by replacing the cotton for each application. Remove dried blood by using peroxide (at 10%). You can then clean with alcohol like the above procedure.

### 6d – Input voltage selection

Cold light generator input voltage may be adjusted (110 or 220VAC). With a small screwdriver, select voltage sliding selector switch lever to desired position (110 or 220VAC).



### 6e2 – Metal Parts

Use a non-abrasive sponge, or soft cloth, soaked up in a neutral soap water solution, diluted as 10ml for each water liter. Do not use general use domestic soap.

Apply the sponge (or cloth) once more, soaked in a glutaraldehyde water solution at 2% for 30 minutes. Remove solution with a damp cloth.

### 6e3 – Cleaning and Disinfectant Use

Discard the cotton after use.

If non discard material was used, such as sponges, cloth and brushes, use them only for this purpose and, after use clean and disinfect keeping them immersed in a glutaraldehyde water solution at 2% for at least 30 minutes.

### 6e – Cleaning and Disinfection

This procedure should be performed before the first use and after each procedure, in order to avoid possible contamination.

**ATTENTION:** Wear personal protective equipment for this procedure.

Observation: Equipment handling parts, or accidentally touched (handles, fiber optical cable, etc.) may be protected with PVC film (or plastic covers), which should be discarded and replaced after every medical procedure. Make sure the Cold Light Generator vents are open and not covered.

**ATTENTION:** Wear personal protective equipment – glasses and gloves.

### 6f – Technical Assistance

**NOTICE:** Never immerse the equipment (even when turned off and disconnected from the power line), or its parts or accessories in any liquids, nor use caustics or abrasive cleaning products.

If there are questions about the use of the equipment, handling or maintenance, contact SEILER or your dealer.

**Observation:** Follow the chemical product manufacturer's directions for use.

## 7 – Optional Accessories

Contact SEILER or your dealer concerning any available accessories for your equipment such as video or digital video accessories.

## 8 – Problems Solving Guide (simple problems):

Before contacting SEILER or your dealer, try solving the problem following the instructions below:

<b>Sympton:</b>	<b>Action:</b>
Pilot lamp does not light nor does the microscope operate	<ul style="list-style-type: none"> <li>• Check if the power cable is connected to the power outlet.</li> <li>• Check if the cold light generator Power Switch is at ON position.</li> <li>• Check the fuse(s). Replace it (them) if needed.</li> <li>• Check the line power.</li> <li>• Check as to overheating. The equipment can be turned on when room temperature is reached.</li> </ul>
Pilot lamp lights but main illumination does not light:	<ul style="list-style-type: none"> <li>• Check if the main lamp connector is correctly connected.</li> <li>• Check the main lamp. If it appears damaged (dark or white stains), replace it.</li> </ul>
Pilot lamp lights, main illumination lights, but the main illumination is dim:	<ul style="list-style-type: none"> <li>• Check the illumination adjustment knob.</li> <li>• Check if voltage selector switch is adjusted to the rated volt age. Adjust it if needed.</li> <li>• Check the main lamp. If appearing damaged (with dark or white stains), replace it.</li> <li>• Check if the main lamp is centered and correctly set to the guide / tab.</li> <li>• Check the fiber optic cable for damage. Replace if needed.</li> </ul>
Observed image (one or both eyes) is not sharp:	<ul style="list-style-type: none"> <li>• Check the lens for cleanliness.</li> <li>• Check the microscope focus. Focus correctly.</li> <li>• Check diopter adjustment from both oculars (left, and right). Adjust if needed.</li> <li>• Check the working distance between objective lens and observed object. Must be approximately the same (in millimeters) as the number engraved on the objective lens. Correct distance if needed.</li> </ul>
There is non-stereoscopic vision:	<ul style="list-style-type: none"> <li>• Check eyepieces interpupular distance, on the binoculars. Adjust them if necessary.</li> </ul>
Arm does not move or moves heavily:	<ul style="list-style-type: none"> <li>• Check the locking knob adjustment.</li> </ul>
Pantographic arm “drifts” when released at desired position:	<ul style="list-style-type: none"> <li>• Check the locking knob. Adjust it.</li> <li>• Check the balance spring tension. Adjust as needed.</li> </ul>

SEILER states that this product has passed its Quality Control Department and has not shown any defect in manufacturing, and therefore WARRANTS its proper functioning, under adequate usage conditions according to the standards in the instruction manual. SEILER offers a Limited Lifetime Warranty whereby the optics and mechanic are warranted to be free from defects for the life of the product, (excluding normal wear-and-tear), and warrants the electronics for one year from date of invoice.

The following are excluded from the warranty:

- Parts and components manufactured by third parties;
- Lamps;
- Wires, cables and plugs;
- Any damage inflicted on the product by improper usage, installations made disregarding the manual's descriptions, repairs, maintenance or service performed by third parties within warranty period unless the third parties are approved by SEILER.
- Damages resulting from connection to incorrect power sources.

#### SEILER PRECISION MICROSCOPES

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