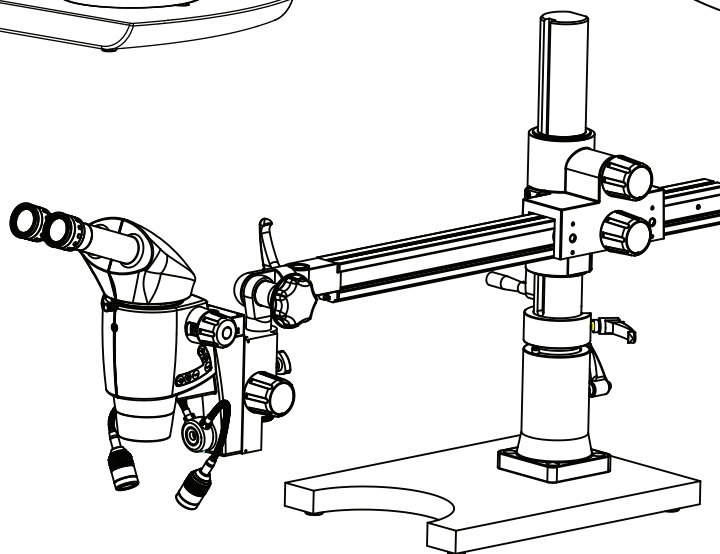
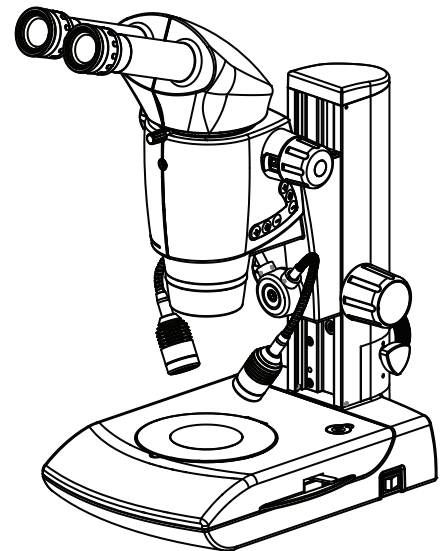
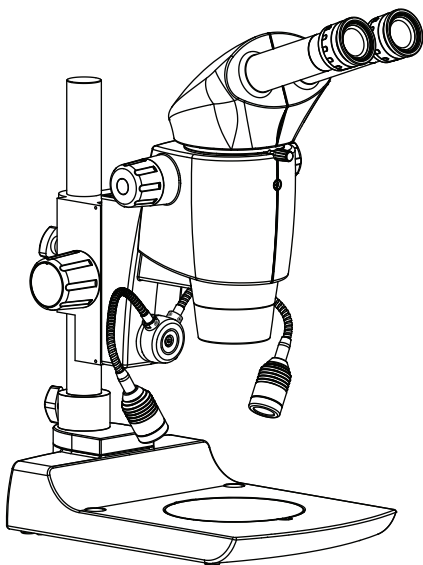


Luxeo 6i Stereo Zoom Microscopy

User Manual



To ensure proper use of this instrument as well as to avoid injury while operating Instrument, understanding this manual completely before use is highly recommended.

Part No.:4147100-795
Issue 1.1
Printed on April,2021

CONGRATULATIONS

Congratulations on purchasing a LABOMED Luxeo 6i- an excellent choice!

The outstanding features of this stereo microscope are its high performance Modular design, its ease of use with extensive range of accessories and Absolutely maintenance-free performance. Sturdy and reliable, it is exceptionally well suited to Industrial, Hospital and Laboratory applications.

In developing the LABOMED Luxeo 6i, we have placed great emphasis on simple, self-explanatory operation. However, please take the time to read the user manual and the notes on operating safety to learn about all the features and capabilities to use them to your best advantages.

Should you have any questions, please consult your local Labomed representative. We are gladly to be at your service!

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1. INTRODUCTION

The Luxeo 6i high quality stereo microscope designed on a telescope Principle and equipped with an Infinity corrected 6:1 parallel optics zoom system. Making it suitable for digital photography by using DSLR and Smart phones. Typical area of use are Industrial, hospital and laboratory applications.

Luxeo 6i is a modern, high performance stereo microscope with a modular design. An extensive range of accessories is available through Labomed. It can easily be converted from continuous zoom to step magnifier by using tab on the magnifier knob. Labomed stereo Luxeo 6i microscope have two parallel beam path and one common main objective; LED coaxial illumination with a life span of 50,000 hours.

Designed for professionals. this microscopes offers many features and functions for its diverse applications.

Extra clarity and contrast is provided through an option of Binocular body inclined at 0-210° tiltable binocular.

The pressure die cast stand consists of Ball bearing 'friction less' sideways focusing to avoid any loss in motion.

The sturdy new stylish design provides comfort as well as stability.

The lateral magnification changer allows comfortable and friction less movement for zoom magnification.

Special crank mechanism for extra excursion range provides opportunity to inspect larger & high objects.

It has large distance for extra high objective.

The Luxeo is used with direct input power supply of 110V - 240V AC 50Hz/60Hz. This ensures continuous operation even under fluctuating voltages.

2. SAFETY INFORMATION

2.1 SYMBOLS

Warning / Caution Symbols Used in this Manual

Though Labomed Products are designed 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. Inside this instruction manual, safety instructions are indicated with the symbols shown below. Be sure to follow the Instructions marked with these symbols for your safety.



WARNING

Disregarding instructions marked with this symbol may lead to death or serious injury.



CAUTION

Disregarding instructions marked with this symbol may lead to injury or instrument damage.



WARNING

1. Intended use of this product

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

2. Do not disassemble

Disassembly may result on damage to the instrument. Never disassemble any part except as described in this operation manual. Contact your LABOMED representative if you notice any Malfunction of this instrument.

3. Check the input voltage

When using an illumination, check that the input voltage displayed on the power supply (supplied) matches the operating voltage. Contact your LABOMED representative 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 for any kind of repair work as failure to do so may result in electric shock or equipment damage.

SAFETY INFORMATION (CONTINUED)

CAUTION

1. Place of use

Use the stereo microscope in closed, dust free rooms at +10°C to +40°C. Protect it from oil, Chemicals and extreme humidity. Install electrical devices at least 10cm from the wall and away from flammable substances.

In warm and warm-damp climate zones, the individual components require special care in order to prevent the built-up of fungus.

2. Transport

If at all possible ,use the original packaging for shipping or transporting individual modules.

In order to prevent damage from vibrations, the customer should disassemble all moving parts according to the user manual and pack them separately.

3. Integration in third-party products

When installing Labomed products into third-party products, the manufacturer of the complete system or its dealer is responsible for following all applicable safety instructions, laws and guidelines.

4. Disposal

Disposal must comply with locally applicable laws and regulations.

If the warning label is stained or peeled off, contact your LABOMED distributor.

SAFETY INFORMATION (CONTINUED)

2.2 IMPORTANT NOTES



Before installing, operating or using the instrument, it is mandatory to read this user manual. In particular, please observe all safety instructions.

User Manual

This User manual includes important instructions related to operating safety, maintenance and Accessories.

- It is prohibited to reproduce or transmit this manual in part or whole without Labomed's expressed permission.
- The content of this manual are subject to change without notice.
- Although every effort had been made to ensure the accuracy of this manual, if you note any points that are unclear or incorrect, contact your nearest Labomed representative.
- Some of the products described in this manual may not be included in the set you have purchased.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Legal Requirements

Adhere to general and local regulations relating to accident prevention and environmental protection.

EC Declaration of Conformity

Electrically operated accessories are constructed based on the state of the art of technology and are provided with an EC Declaration of Conformity.

SAFETY INFORMATION (CONTINUED)

2.3 CARE & MAINTENANCE INSTRUCTIONS

1. General Instructions

- Protect the stereo microscope from moisture, fumes and acids and from alkaline, caustic and corrosive materials.
- Protect the stereo microscope from oil and grease. Never grease or oil mechanical parts or sliding surfaces.
- Follow the instructions of the disinfectant manufacturer.
- We recommend concluding a service contract with Labomed.

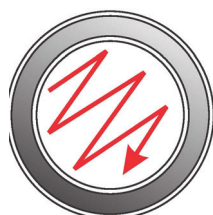
2. Cleaning the lenses

To clean the lens surfaces, remove dust using a soft brush or gauze (compressed air dust cans are ideal). For removing finger marks or grease, soft cotton cloth/ lens tissue or gauze lightly moistened with cleaning solution (85% petroleum ether and 15% isopeopanol) should be used. For cleaning the optics, use xylene. Observe sufficient caution in handling xylene.

Cleaning procedure

Place the eyepieces on the dust-free surface (e.g. fresh aluminum foil). All other optical components to be cleaned should be as accessible as possible.

- Blow all loose dust particles away with a dust blower.
- Remove all water-soluble dirt with distilled water. If this is unsuccessful repeat using a solution of diluted hand soap liquid. Remove any remaining residue with a dry cotton swab.
- To remove oil, use a solution of diluted hand-soap liquid initially. If this does not produce a satisfactory result, repeat the cleaning using a solvent (Optical Cleaning Solution 85% petroleum ether and 15% isopropanol).
- Grease must always be removed using a solvent.
- Cleaning is achieved by using a spiral motion from the center to the rim. Never wipe using zig-zag movements as this will only spread the dirt. With larger optical surfaces (e.g. tube lenses) the spiral motion starts initially at the rim before to the middle and is only then followed by a center to rim cleaning motion. Normally several spiral wipes are recommended. We recommend pure, volatile petroleum ether or Optical Cleaning Solution as explained in point 3 above.



Zig-Zag motion ❌



Spiral motion ✔️

Wipe using a spiral movement. Do not use a zig-zag motion!

3. Cleaning of painted surfaces

Avoid the use of any organic solvent (e.g. thinner, xylene, ether, alcohol etc.) for cleaning of painted surfaces of the instrument. Painted surfaces can be cleaned with a very lightly moistened micro fiber cloth. Loose dust and dirt can be removed using a brush of soft hair used exclusively for this purpose.

SAFETY INFORMATION (CONTINUED)

4. Cleaning coated parts and plastic parts

- Dust and dirt particles should be removed with a soft brush or lint-free cotton cloth.
- Remove coarse debris with a moistened disposable cloth.
- Acetone, xylene or intro-containing thinners must not be used.
- Never use chemicals to clean colored surfaces or accessories with rubberized parts. This could damage the surfaces, and specimens could be contaminated by abraded particles.

Caution

Do not use aggressive organic solvent such as acetone for cleaning painted surfaces and plastic parts of the microscope.

5. Accessories, maintenance and repair

Accessories

- Use accessories only described in 'SYSTEM DIAGRAM' of this user manual.

Maintenance, Repair & Servicing

- The labomed Luxeo 6i stereo microscope is basically maintenance-free. To ensure that it always operates safely and reliably, we recommend periodic inspections or, if appropriate, conclude a maintenance contract with LABOMED.
- We recommend concluding a service contract with Labomed.
- For maintenance and repair, only OEM spare parts may be used.

Repairs and service work

- Only original Labomed spare parts may be used.
- Before opening the instruments, switch off the power and unplug the power cable.
- Touching the live circuit can cause injury.

6. Never attempt to dismantle

Never attempt to dismantle the instrument so as to avoid the possibility of impairing its operational efficiency and accuracy.

7. Disinfection

1. Normal household bleach (Sodium hypochlorite 5%)- strength 5000 ppm(10 parts water 1 part bleach).
OR
2. 70% Isopropyl alcohol.

Disinfection Procedure:

- Take a muslin cloth.
- Moist it to feel wet
- Disinfect/clean the surface gently.

Note – 1. Use mask and Gloves while performing cleaning and disinfection.

2. While cleaning, muslin cloth should not be dripped wet to prevent seepage and rusting to running/bare parts.

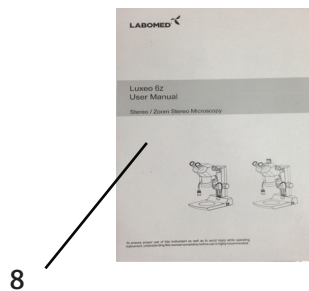
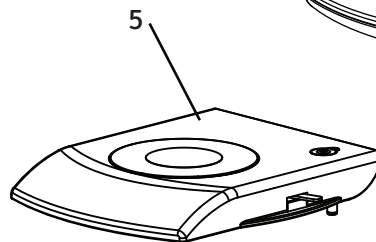
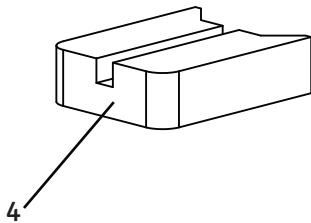
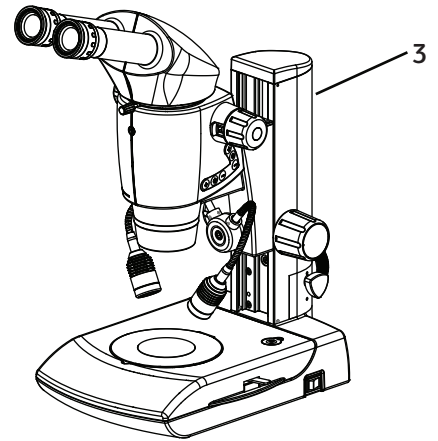
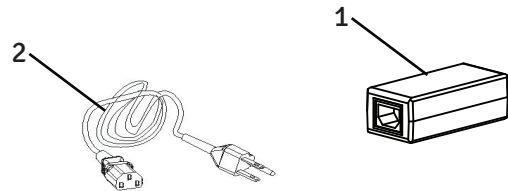
3. Alcohol is flammable, its use as a surface disinfectant should be in well-ventilated spaces only.

3. INITIAL SETUP

3.1 UNPACKING YOUR MICROSCOPE

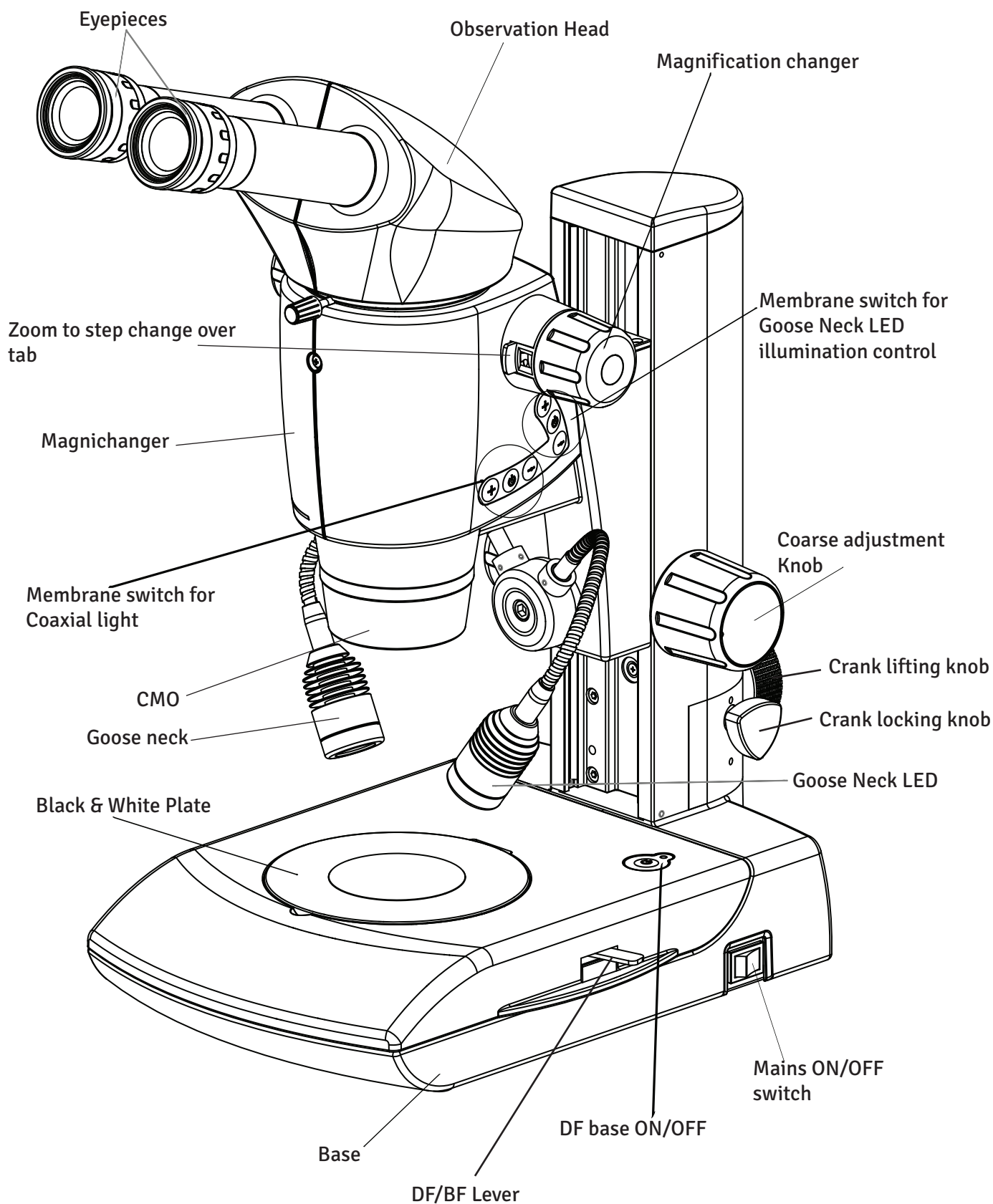
LIST OF PARTS

1. Power Adapter (SD 165-24V-P5)
2. Power Cable
3. Luxeo 6i Microscope
4. DF Base Compensator
5. DF Base (if ordered) (4146100-820)
6. Specimen Plate (Black & White) (4147000-851)
7. Specimen Plate DF Base (if DF base provided) (4146000-827)
8. User manual (4147100-795)
9. Dust Cover (PKG-104) with yellow duster.



4. Luxeo 6i BINOCULAR MICROSCOPE

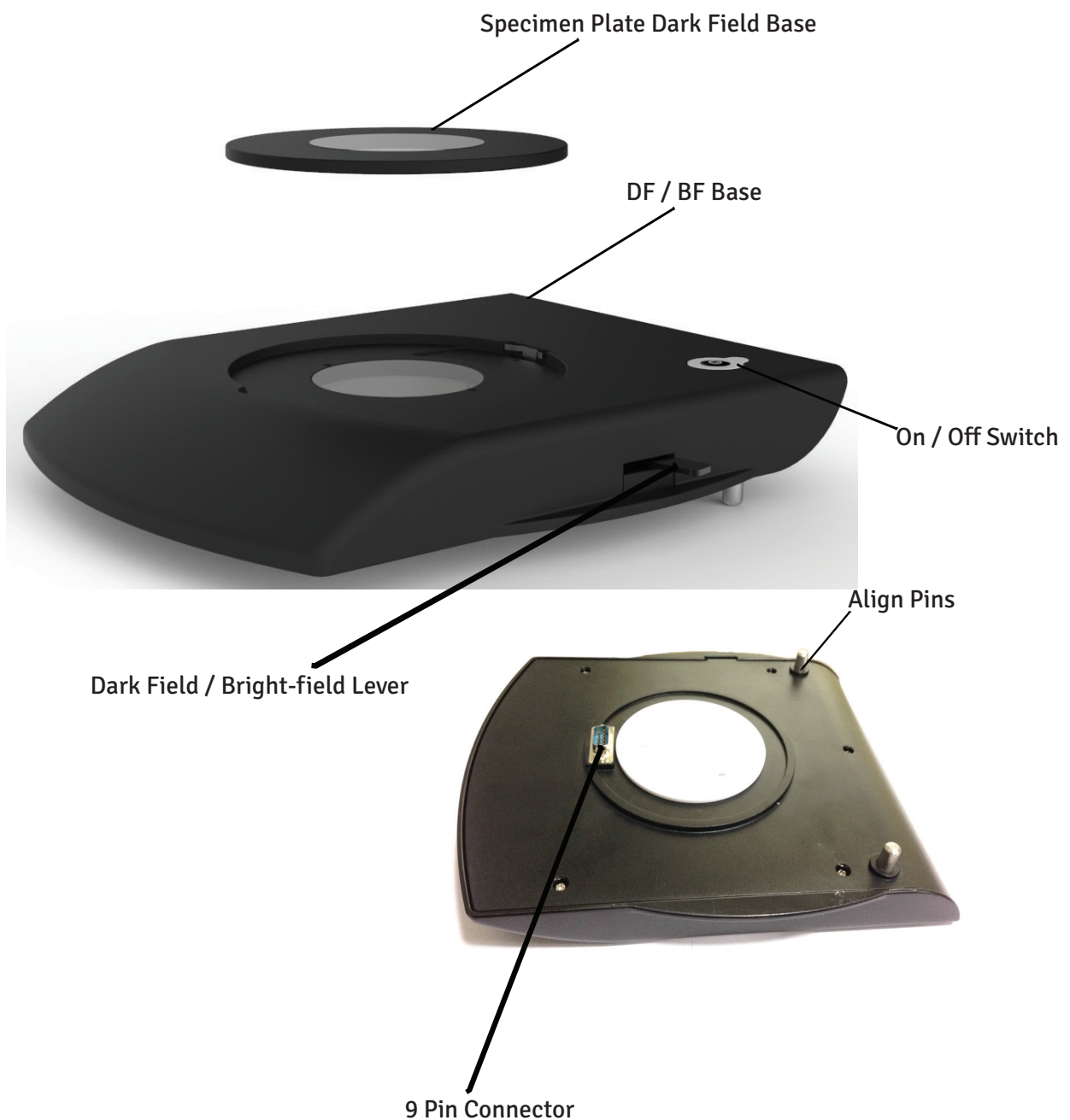
Part No. - 4147100- 800



5. DARK FIELD/BRIGHT FIELD (DF/BF) BASE

Part No. 4147100-826

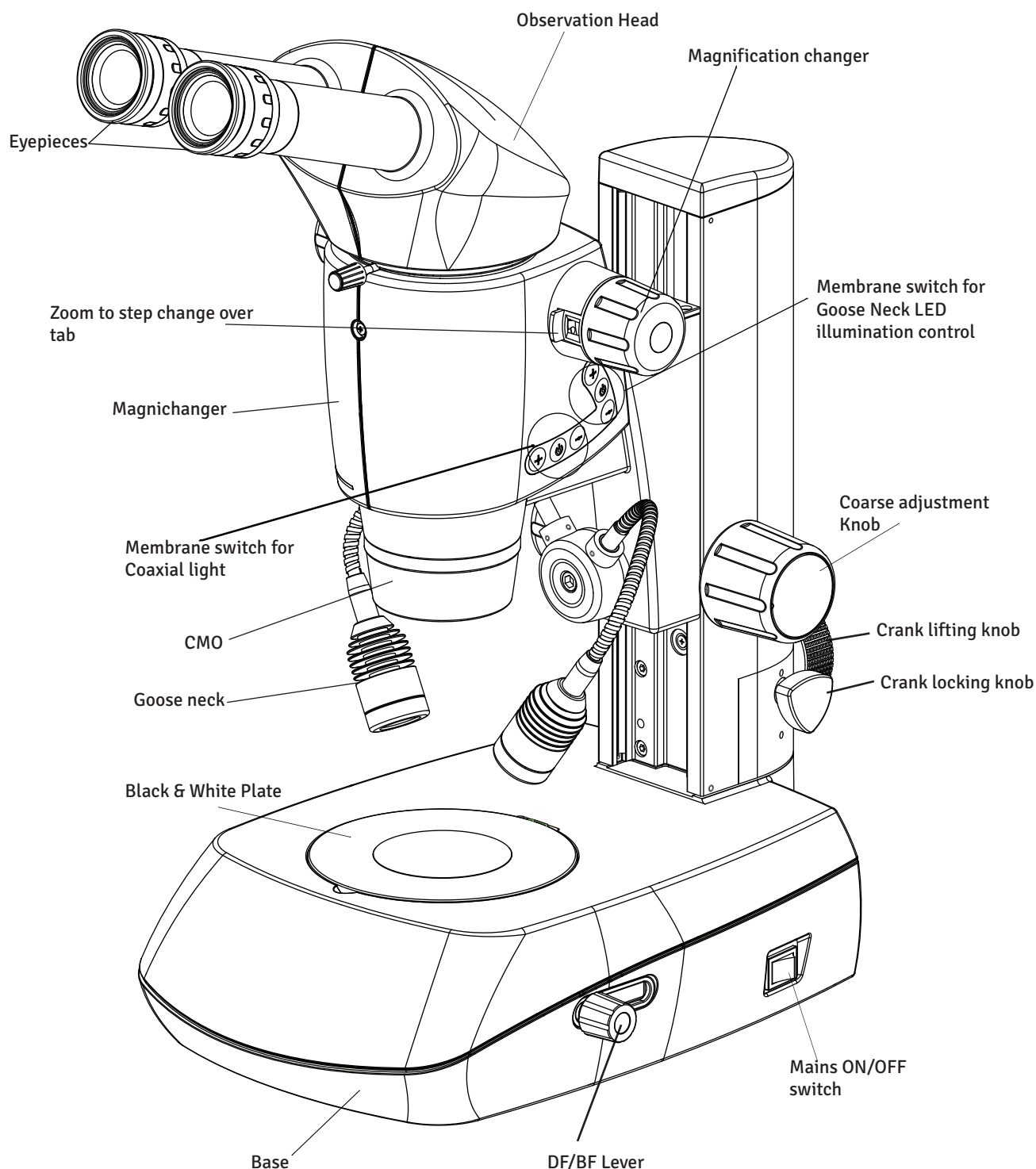
Note: DF/BF base is not a standard configuration part of Luxeo 6i. It is supplied on order.
For use of DF/BF base refer page no. 14.



6. MIRROR BASE Luxeo 6i BINOCULAR MICROSCOPE

PRE-CONFIGURED MIRROR BASE FOR DARK FIELD ILLUMINATION (4147300)

Dark field observation in Luxeo 6i is provided through a specialized stand controlling reflection mirror & light shielding plate to direct on inverted hollow cone of illumination towards specimen at oblique angles. It has the same function as DF / BF base but advantage is that it is factory configured dedicated to DF application only.



7. INSTALLATION

7.1 MICROSCOPE SETUP

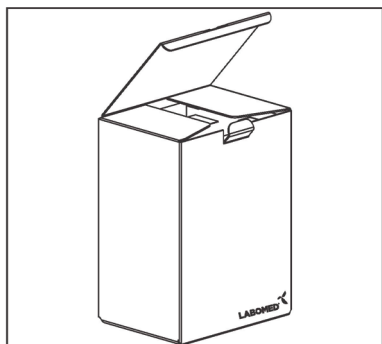


Fig.1

1. Open Card board box from top.
2. Take out User manual.
3. Take out EPE foam sheet out of card box and take out the microscope, Power Cord and Power adapter.
4. Raise up the bracket of microscope using Coaxial Knobs.
5. Remove front support packing.
6. Remove dummy foam block if DF/BF base not provided.
7. Place the microscope on a sturdy table. Luxeo 6i is placed in ready to use condition. No spread installation instructions are required except power up of the microscope through Power adapter provided. The ocular tubes are equipped with eyepieces installed. Ocular tab prevents the eyepieces from falling, rotating freely or easily pulled out.

7.2 SETTING UP THE DARK FIELD ATTACHMENT (IF SUPPLIED)

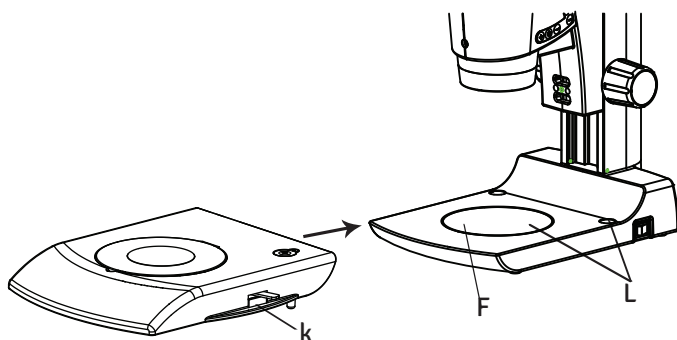


Fig.2

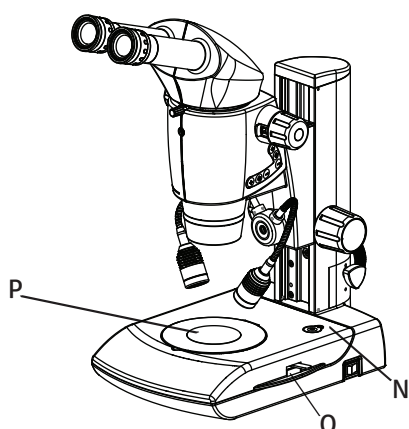


Fig.3

1. Remove Black & White specimen plate from base pressing the plate as shown in fig. 2.
2. Place the Dark Field Base gently on to the Luxeo 6i base by matching the Guide pins of Dark Field base (K) with the Guide holes (L). Refer fig.2.
3. The 9 pin male connector below dark field base will automatically connect to the female 9 pin inlet (F) while lifting up the disc gently on the Luxeo 6i base. Refer fig. 2 & 3.
4. For illumination press On/Off button (N) on Dark field base. Refer figure 3.
5. Place the transparent specimen plate (P) on DF/BF base. Refer fig. 3.
6. Achieve Dark Field Illumination by push back the Lever (O). Pull the same lever (O) to front to achieve Bright field Illumination.

8. OBSERVATION & USE OF MICROSCOPE

8.1 POWER ON THE MICROSCOPE

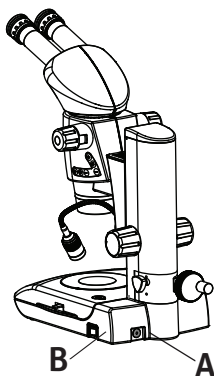


Fig.4

Plug in the output of power adapter and connect the power adapter to the AC socket (A). Refer fig-4.

Press the power on switch (B) Refer fig-4.

The incident Coaxial illumination is controlled by the switch(G) Refer Fig-5.

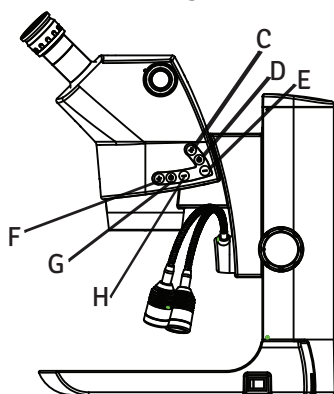


Fig.5

Intensity control

Press button (F) and (H) to increase or decrease the Coaxial illumination intensity in six steps.

The incident illumination (Goose Neck LED) is controlled by the switch (D) to glow both sided Goose Neck LED's. Press the button in the following sequence to illuminate the Goose Neck LED.

- Press button (D) to illuminate both Goose Neck LED.
- Second press of button (D) to switch off Goose Neck LED.

Intensity control

Press button (C) and (E) to increase or decrease the Goose Neck LED intensity in six steps.

8.2 DIOPTER SETTING OF EYEPIECES

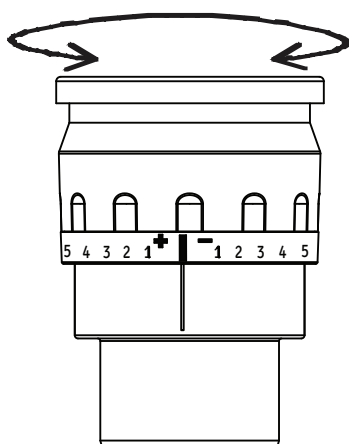


Fig.6

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 the highest magnification. Focus on the sample using the focus knob.
3. Turn the zooming knob to the lowest magnification. 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.

OBSERVATION & USE OF MICROSCOPE (CONTINUED)

8.3 IPD ADJUSTMENT

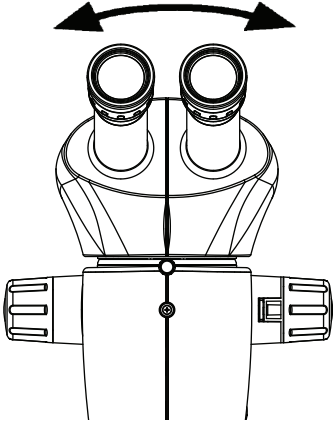


Fig.7

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.

The interpupillary distance is correctly set if you see a single circular image field when looking at a specimen.

If you are still a novice microscope user, you may need a short time to become accustomed to this. Not to worry – after a little while, it will become automatic.

Adjusting the interpupillary distance

1. Look into the eyepieces.
2. Hold the eyepieces with both hands. Push the eyepieces together or separate them until you see a circular image.
3. Slowly approach the eyepieces with your eyes until you can see the complete image field without corner cutting.

8.4 FOCUSING OF MICROSCOPE

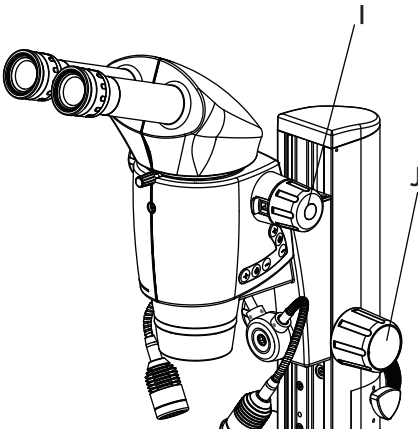


Fig.8

1. Switch on the desired illumination as per specimen selected.
2. Adjust both eye pieces at 0 diopter reading.
3. Adjust IPD to user convenience.
4. Place any specimen on Black & White plate or on DF/BF base as per configuration provided.
5. Setup the magnification factor at highest magnification of zoom pod using knob (I).
6. Looking through the eyepieces, adjust the focusing of microscope head using coarse knob (J) to focus the specimen.
7. Bring the image into critical focus.
8. Change magnification factor from highest to lowest.
9. At this stage image should remain in focus. This setting is called as par-focal of microscope.
10. Microscope is ready to use.

Focusing raises or lowers the stereomicroscope using the focusing drive. The specimen detail is brought into sharp focus as soon as it is in the focal point of the objective.

- The focusing drive can be operated either left- or right-handed.
- The focussing arrangement can carry a load of up to 20 kg.

OBSERVATION & USE OF MICROSCOPE (CONTINUED)

8.5 FOCUSING TORQUE ADJUSTMENT

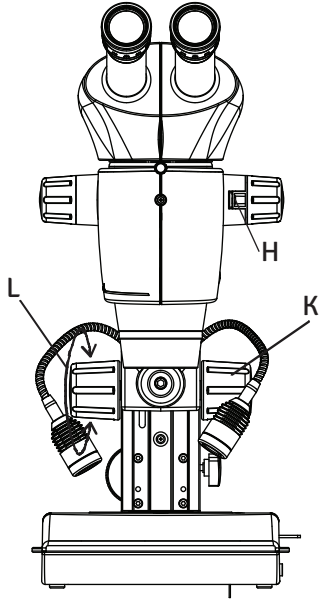


Fig.9

Luxeo 6i Microscope's focusing torque is pre-adjusted to maximum limit to withstand a max. force of 20kg with standard Binocular.

Torque of focusing mechanism can be loosened if required as per following procedure per user's convenience:

1. Hold firmly the right knob shown as (K). Refer Fig.9.
2. Rotate left knob (L) to clockwise to loosen torque of the focusing mechanism of microscope.
3. As explained above, torque cannot be tightened further, but it can be loosened to user's convenience if required.

Changing the Magnification (Zoom)

Luxeo 6i have an integrated 6:1 zoom.

Zooming

1. Look into the eyepieces.
2. Focus on the specimen.
3. Rotate the magnification changer until the desired magnification is configured.

Zoom to step magnichanger

1. Refer fig 9, Red tab 'H' is always disengaged from factory for continues zoom observation.
2. Push in the red tab 'H' to engage the step magnichanger observation.

8.6 USE OF CRANK MECHANISM TO OBSERVE EXTRA HIGH OBJECTS

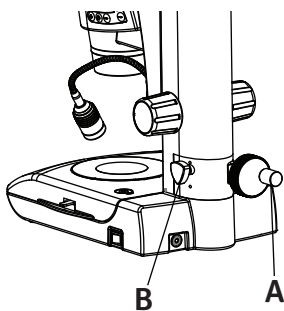


Fig.10

Refer Figure: 10

- Knob A is used to lift the complete coaxial system of microscope upto a height of 65mm.
- Knob B is used to lock this mechanism at any desired position during the complete range of 65mm.
- This unique feature is used to accommodate extra height specimen for observation.

OBSERVATION & USE OF MICROSCOPE (CONTINUED)

8.7 USE OF COMMON MAIN OBJECTIVES

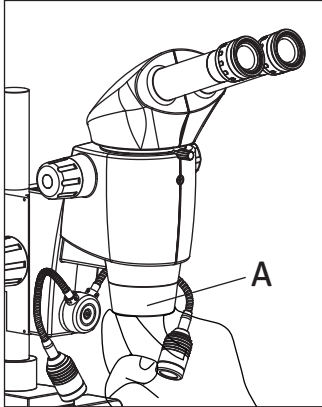


Fig.11

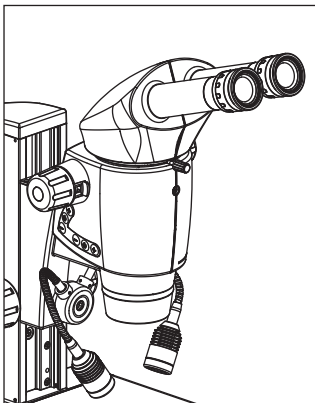


Fig.12

1. Remove the protective cap from the optics carrier 'A' by turning it.

⚠ Hold the objective 'A' firmly during assembly and disassembly so that it does not fall onto the stage plate. This applies particularly to the 1x or 1.25x planapochromatic objective, which is very heavy. Remove all specimens from the stage plate first.

2. Screw in the objective clockwise completely into the optics carrier.

THE DIFFERENT TYPES OF OBJECTIVES

To meet the various requirements regarding imaging properties, there is a choice of high quality interchangeable planachromatic and planapochromatic objectives and also lower priced interchangeable achromatic objectives.

- Achromatic objectives are particularly suited for specimens with high-contrast structures.
- Flat-field (planachromatic) objectives are particularly well suited for studying flat objects such as wafers and thin sections.
- With planapochromatic objectives, the finest structures are visible with high contrast. The sophisticated apochromatic correction allows these objectives to attain the highest color brilliance and fidelity.

Achromatic objectives

The 0.32x, 0.5x, 0.63x, 0.8x, 1x achromatic objectives offer countless variants for selecting the object field diameter, magnification ranges and working distances.

Planachromatic objective 1.25x

For the highest requirements for overall image quality, we recommend equipping the microscope with the 1.25x plan (flat-field) objective, which returns sharp, contrast-rich object fields.

9. OBSERVING EXTRA HEIGHT SPECIMEN

9.1 PL STAND (4147400)

PL Stand application is useful in:

1. Observation of extra height objects.
2. Any objective between 0.3x to 0.5x magnification.

9.2 ASSEMBLING PL STAND Luxeo 6i

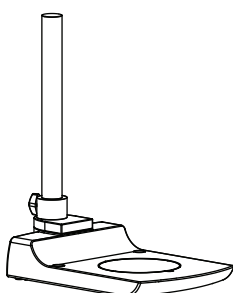


Fig.13

Place the Stand on the level surface.

Fit the zoom pod with bracket to the pillar as shown and tighten it with clamping knob provided on the bracket. Refer figure 14 & 15.

Connect Power Supply output (B) to the Inlet socket (A) on the top of Zoom bracket. Refer figure 16.

Connect Power Supply to the microscope (C). Refer figure 16.

Follow procedure and refer steps as mentioned on page no. 11 to 15 to setup the microscope.

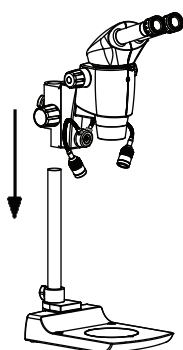


Fig.14

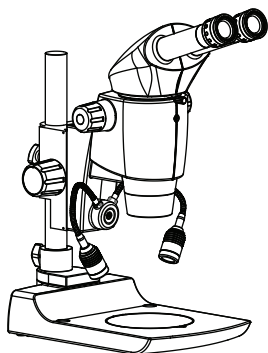


Fig.15

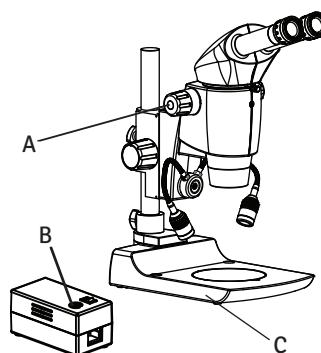
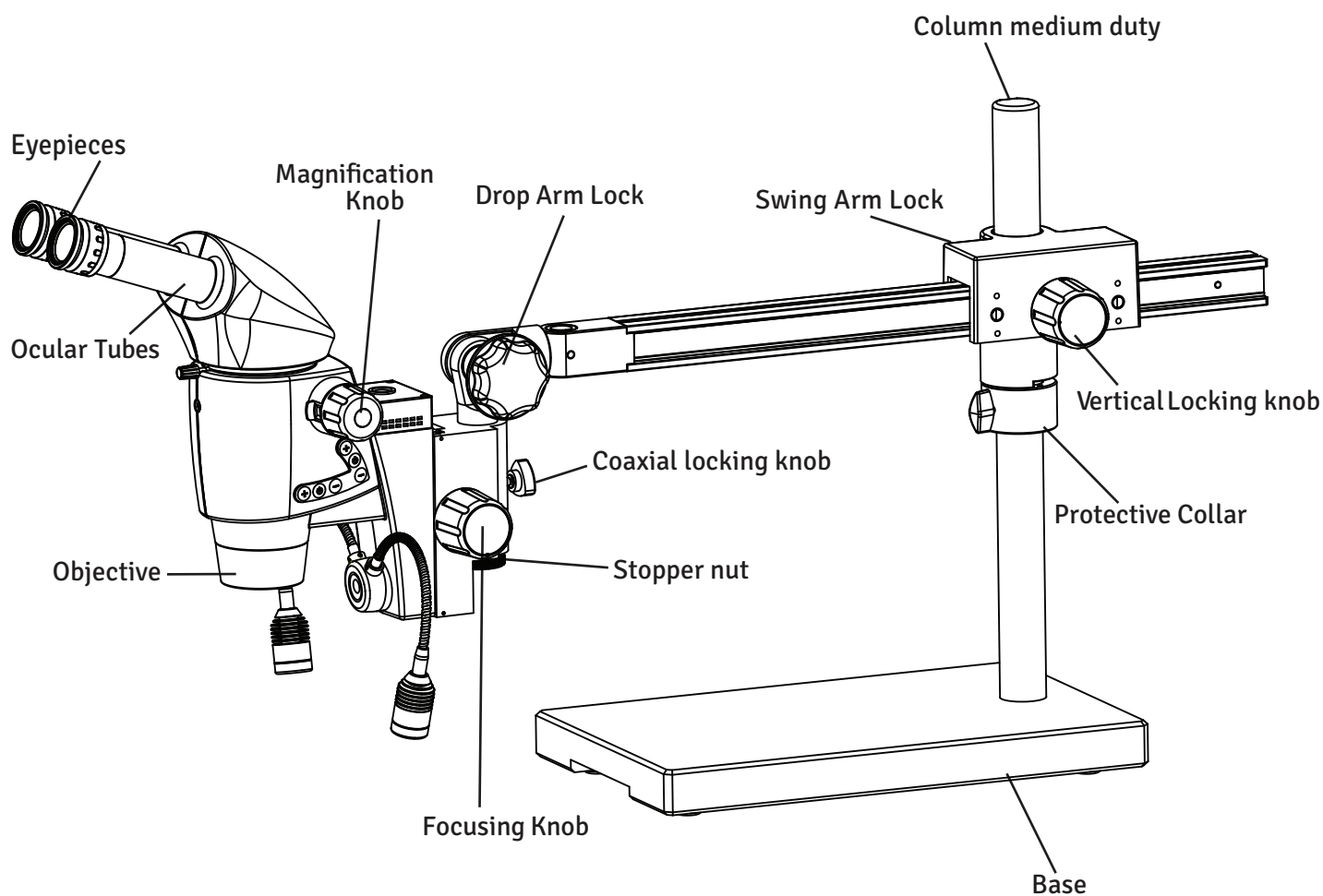
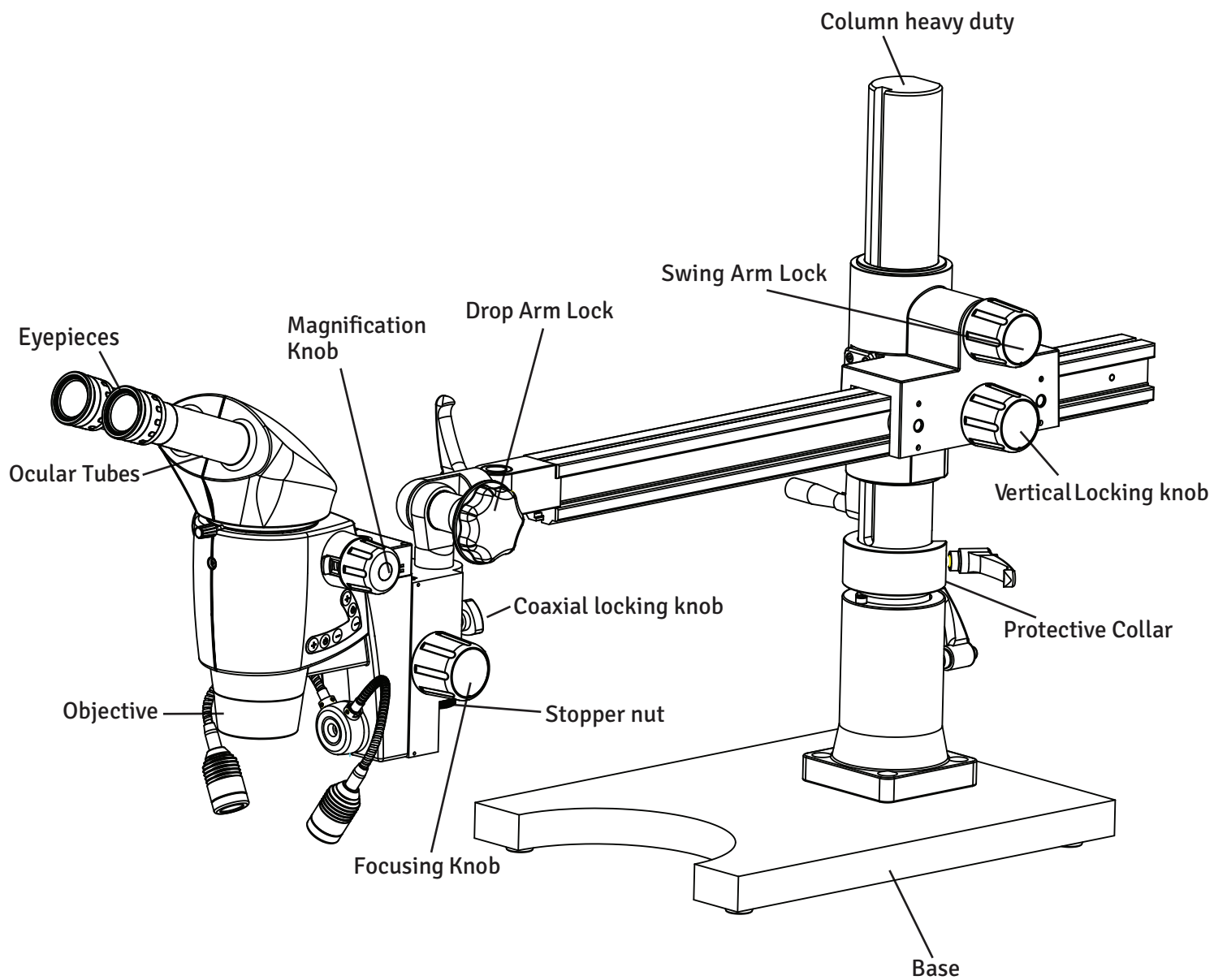


Fig.16

10A . LUXEO 6i- BINOCULAR (SWING ARM MEDIUM DUTY)

10B . LUXEO 6i- BINOCULAR (SWING ARM HEAVY DUTY)



11. DEFINITION OF PARTS

Adjustable Trinocular Port

Threaded port with adjustable length of attachment of digital or video camera.

Swing Arm

Stand for the microscope that allows the head to be moved in physical space in various directions.

Continuous Zoom

A microscope head with a knob to change magnification through a range.

Diopter

Allows the focus to be perfected for both eyes, independent of each other.

Focusing Knob

Used to move the microscope head vertically to bring the sample into focus.

Gooseneck Illuminator

Illuminator independent of the unit that allows movement of one or two necks for controlled lighting.

Magnification Knob

Changes the magnification of the lenses on a continuous zoom microscope.

Microscope Head

Contains the objective lens, eyepiece ocular tubes, and prisms used to magnify.

Ocular Tube

Tube designed to hold the eyepieces or camera in place.

Table Stand

A stand which sits on the table and holds the head directly above the sample without moving.

12A. ASSEMBLY FOR MEDIUM DUTY

Swing Arm Luxeo6z is packed in 3 different cardboard boxes:

Box 1: Base

Box 2: Column & Swing Arm Assembly

Box 3: Zoom POD Assembly

1. Open the Box and take out Base from cardboard carton, after taking out the EPE Sheets.

2. Open the box marked with swing arm assembly. Swing Arm is packed in EPE cut outs by splitting in two parts :

i) Column

ii) Swing Arm

3. Open the microscope box and take out the microscope & power supply .

4. Check the packing list to ensure that you have received all items. Please note that this can vary depending on which model you've purchased.

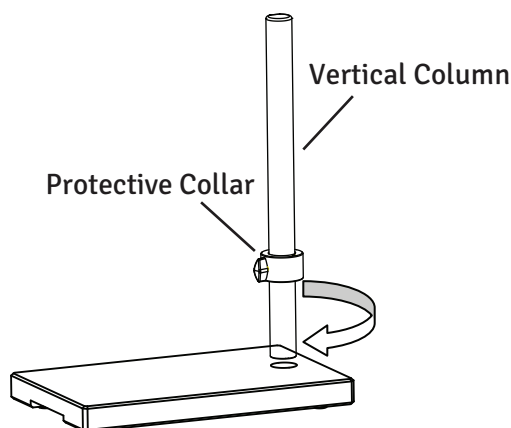


Fig.1

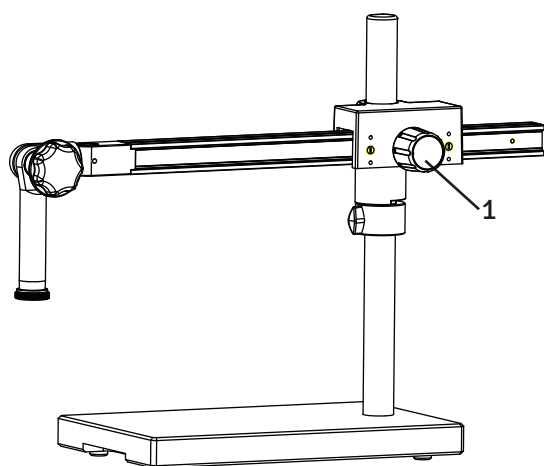
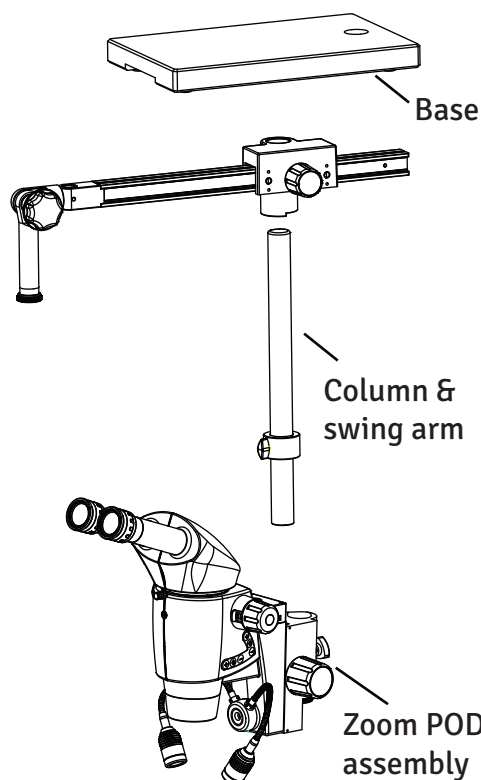


Fig.2



5. Installation of the Swing Arm Stand.

5.1 Insert the vertical column into the base stand and screw the pole securely with 10mm allen wrench provided with it as shown in Fig-1.

5.2 Loose the knob on protective collar and adjust the collar to the proper height. Tighten the knob.Fig-1.

5.3 Loosen the knob (1) and place the horizontal arm's housing onto the vertical pillar. Rest the housing over Protective collar and set the arm as shown in fig-2. Tighten knob(1).

12B. ASSEMBLY FOR HEAVY DUTY

Swing Arm Luxeo6z is packed in 3 different cardboard boxes:

Box 1: Base

Box 2: Column & Swing Arm Assembly

Box 3: Zoom POD Assembly

1. Open the Box and take out Base from cardboard carton, after taking out the EPE Sheets.
2. Open the box marked with swing arm assembly. Swing Arm is packed in EPE cut outs by splitting in two parts :
 - i) Column
 - ii) Swing Arm
3. Open the microscope box and take out the microscope & power supply .
4. Check the packing list to ensure that you have received all items. Please note that this can vary depending on which model you've purchased.

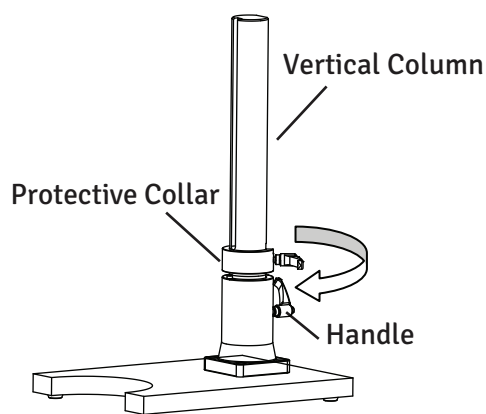


Fig.1

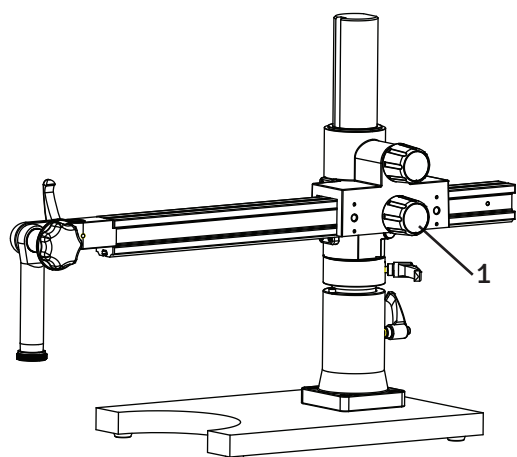
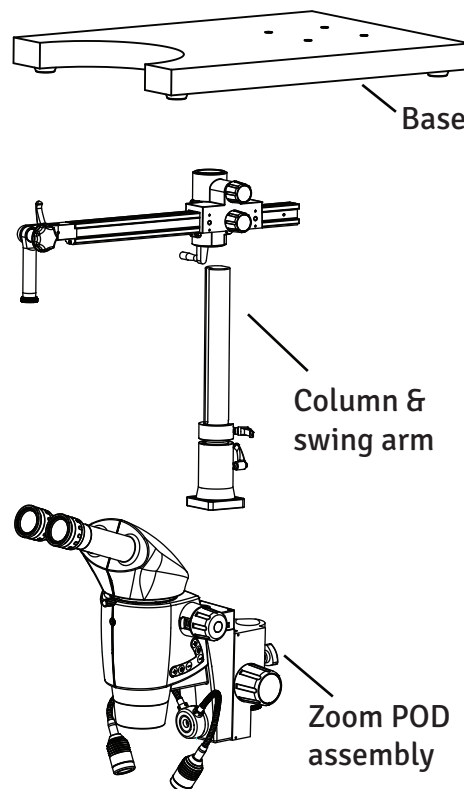


Fig.2



5. Installation of the Swing Arm Stand.

5.1 Insert the vertical column into the base stand and screw the pole securely with handle as shown in Fig-1.

5.2 Loose the knob on protective collar and adjust the collar to the proper height. Tighten the knob. Fig-1.

5.3 Loosen the knob (1) and place the horizontal arm's housing onto the vertical pillar. Rest the housing over Protective collar and set the arm as shown in fig-2. Tighten knob(1).

13. ZOOM POD ASSEMBLY FOR MEDIUM/HEAVY DUTY

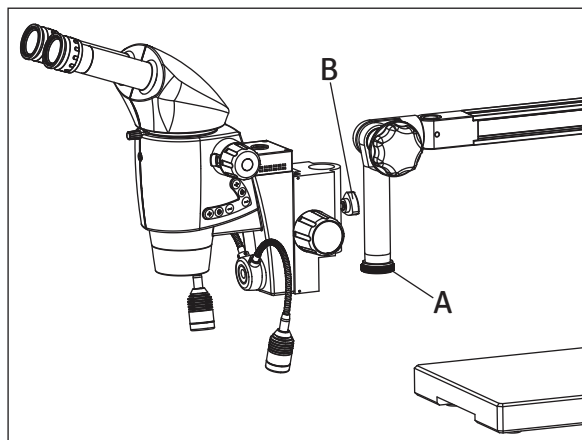


Fig.3

5.4 Remove Stopper nut 'A' and put the head into the Zoom spoodle, put stopper 'A' back to place. Tighten the lock knob (B) as shown in Fig-3 & 3a.

5.5 For the Trinocular models, screw the photo port onto the top of the microscope head (trinocular C-mount port).

5.6 An external light source is included, connect the light source to the microscope at Port 'C' in fig 3a. Plug in the microscope and turn it on. If no light emerges from the light source, adjust the Membrane switch fig-3a.

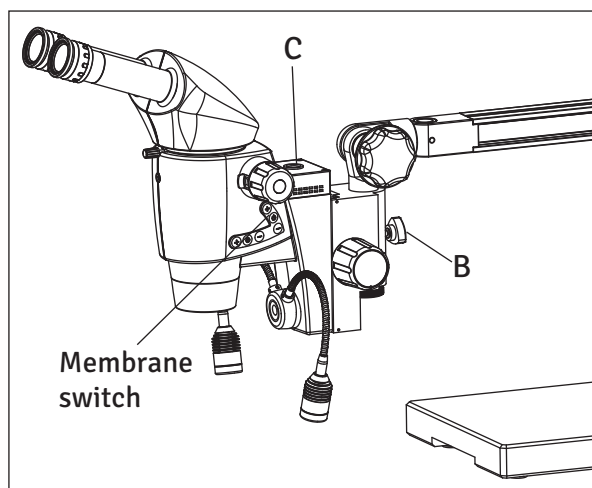


Fig.3a

14. CALCULATING THE TOTAL MAGNIFICATION AND FIELD OF VIEW DIAMETER

PARAMETER

MO	Magnification of objective	eg. 1x
ME	Magnification of eyepiece	eg. 10x
f	Magnification changer position	eg. 2.5
a	Binocular Tube factor = 1.6	
Field number (FN) Eyepiece	Field number of the eyepiece. Field numbers are printed on the eyepieces along with magnification factor. eg. 10x/22 here 22 is the field number	

Magnification(M) Calculation example

$$M = MO \times ME \times f \times a$$

or

$$1 \times 10 \times 2.5 \times 1.6 = 40\times$$

Calculation example: Field of view diameter in the specimen

$$\text{FOV: } \frac{\text{FN}}{MO \times f \times a}$$

$$\frac{22}{1 \times 2.5 \times 1.6} = 5.5$$

15. MAGNIFICATION CHART

Luxeo 6i Specification Table

Objectives		Achr.0.32x		Achr. 0.50x		Achr.0.63x		Achr.0.80x		Achr 1.0x/Plan Apo 1x		Achr. 1.25x	
working Distance		300		185		145		114		90 / 106		82	
Eyeiece	Mag. Position	Total Mag. X	Obj. Field Φ	Total Mag. X	Obj. Field Φ	Total Mag. X	Obj. Field Φ	Total Mag. X	Obj. Field Φ	Total Mag. X	Obj. Field Φ	Total Mag. X	Obj. Field Φ
10x/22	0.4	2.0	110.0	3.2	68.8	4	55.0	5.13	42.9	6.4	34.4	8	27.5
	0.5	2.5	88.0	4.0	55.0	5	44.0	6.41	34.3	8	27.5	10	22.0
	0.7	3.5	62.9	5.6	39.3	7	31.4	8.97	24.5	11.2	19.6	14	15.7
	0.9	4.5	48.9	7.2	30.6	9	24.4	11.54	19.1	14.4	15.3	18	12.2
	1.0	5.0	44.0	8.0	27.5	10	22.0	12.82	17.2	16	13.8	20	11.0
	1.5	7.5	29.3	12.0	18.3	15	14.7	19.23	11.4	24	9.2	30	7.3
	2.0	10.0	22.0	16.0	13.8	20	11.0	25.64	8.6	32	6.9	40	5.5
	2.5	12.5	17.6	20.0	11.0	25	8.8	32.05	6.9	40	5.5	50	4.4
12.5x/18	0.4	2.5	90.0	4.0	56.3	5	45.0	6.41	35.1	8	28.1	10	22.5
	0.5	3.1	72.0	5.0	45.0	6.25	36.0	8.01	28.1	10	22.5	12.5	18.0
	0.7	4.4	51.4	7.0	32.1	8.75	25.7	11.22	20.1	14	16.1	17.5	12.9
	0.9	5.6	40.0	9.0	25.0	11.25	20.0	14.42	15.6	18	12.5	22.5	10.0
	1.0	6.3	36.0	10.0	22.5	12.5	18.0	16.03	14.0	20	11.3	25	9.0
	1.5	9.4	24.0	15.0	15.0	18.75	12.0	24.04	9.4	30	7.5	37.5	6.0
	2.0	12.5	18.0	20.0	11.3	25	9.0	32.05	7.0	40	5.6	50	4.5
	2.5	15.6	14.4	25.0	9.0	31.25	7.2	40.06	5.6	50	4.5	62.5	3.6
16x/16	0.4	3.2	80.0	5.12	50.0	6.4	40.0	8.21	31.2	10.24	25.0	12.8	20.0
	0.5	4	64.0	6.4	40.0	8	32.0	10.26	25.0	12.8	20.0	16	16.0
	0.7	5.6	45.7	8.96	28.6	11.2	22.9	14.36	17.8	17.92	14.3	22.4	11.4
	0.9	7.2	35.6	11.52	22.2	14.4	17.8	18.46	13.9	23.04	11.1	28.8	8.9
	1.0	8	32.0	12.8	20.0	16	16.0	20.51	12.5	25.6	10.0	32	8.0
	1.5	12	21.3	19.2	13.3	24	10.7	30.77	8.3	38.4	6.7	48	5.3
	2.0	16	16.0	25.6	10.0	32	8.0	41.03	6.2	51.2	5.0	64	4.0
	2.5	20	12.8	32	8.0	40	6.4	51.28	5.0	64	4.0	80	3.2
20x/12	0.4	4	60.0	6.4	37.5	8	30.0	10.26	23.4	12.8	18.8	16	15.0
	0.5	5	48.0	8	30.0	10	24.0	12.82	18.7	16	15.0	20	12.0
	0.7	7	34.3	11.2	21.4	14	17.1	17.95	13.4	22.4	10.7	28	8.6
	0.9	9	26.7	14.4	16.7	18	13.3	23.08	10.4	28.8	8.3	36	6.7
	1.0	10	24.0	16	15.0	20	12.0	25.64	9.4	32	7.5	40	6.0
	1.5	15	16.0	24	10.0	30	8.0	38.46	6.2	48	5.0	60	4.0
	2.0	20	12.0	32	7.5	40	6.0	51.28	4.7	64	3.8	80	3.0
	2.5	25	9.6	40	6.0	50	4.8	64.10	3.7	80	3.0	100	2.4

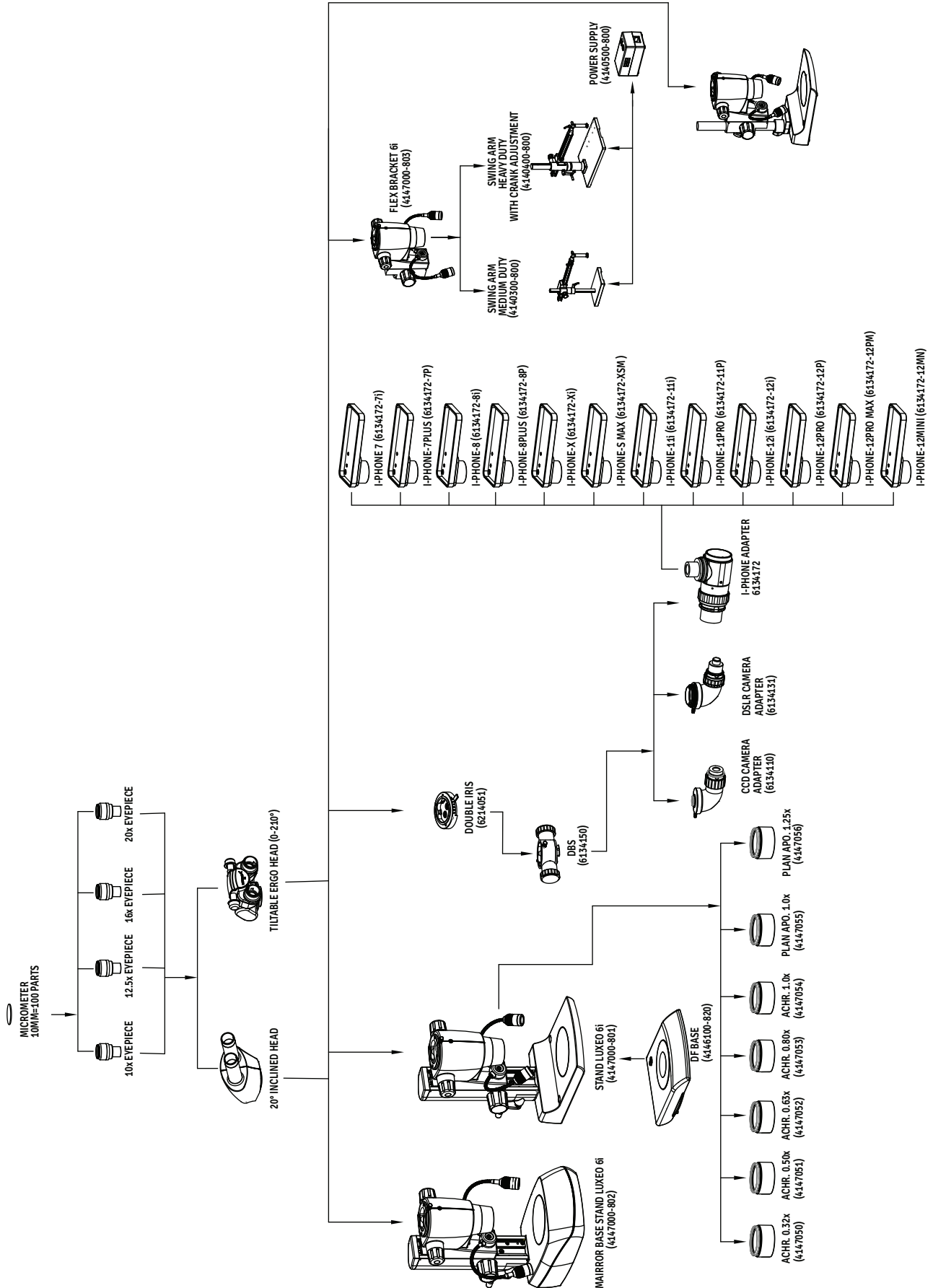
16. SPECIFICATIONS

Optical System	Galiean
Magnification	Zoom 6:1
Eyepieces	WF 10x/22mm
Diopter Correction	±5D
IPD	50 - 75 mm
Viewing Angle	Binocular, 45° or tiltable ergo head 0-210° with standard 1x objectives
Working Distance	106mm
Magnification range	6.4 to 40x
Object field diameter	5.5 to 34.4 mm
Eyegaurds	Foldable
Illumination control	Incident coaxial Illumination with intensity control Goose neck for extra illumination Transmitted Light: DF/BF (Dark field/ Bright field) base with On Off control

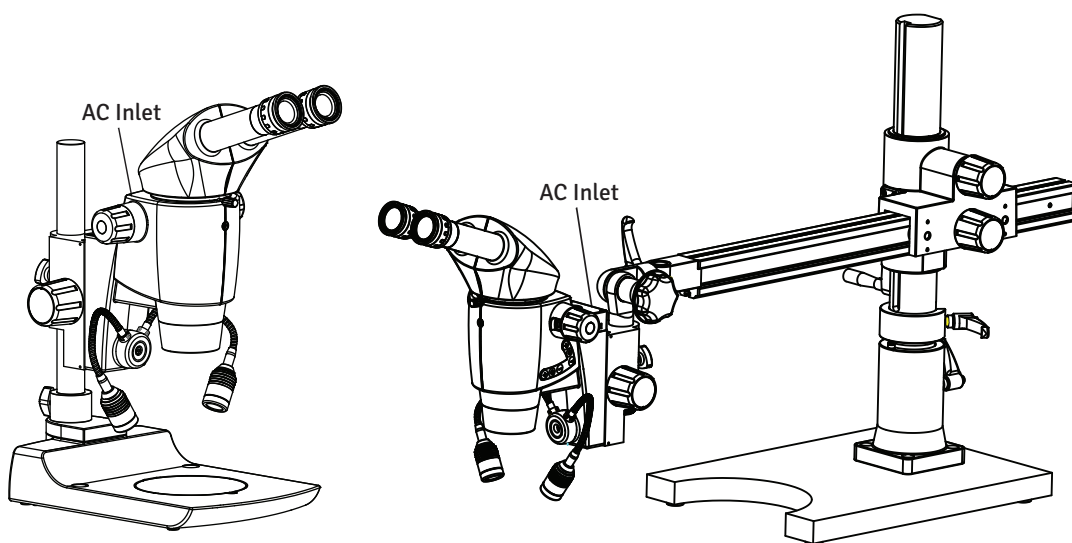
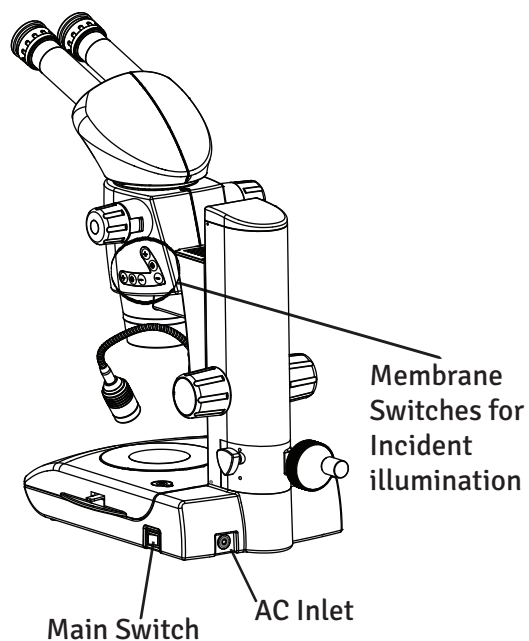
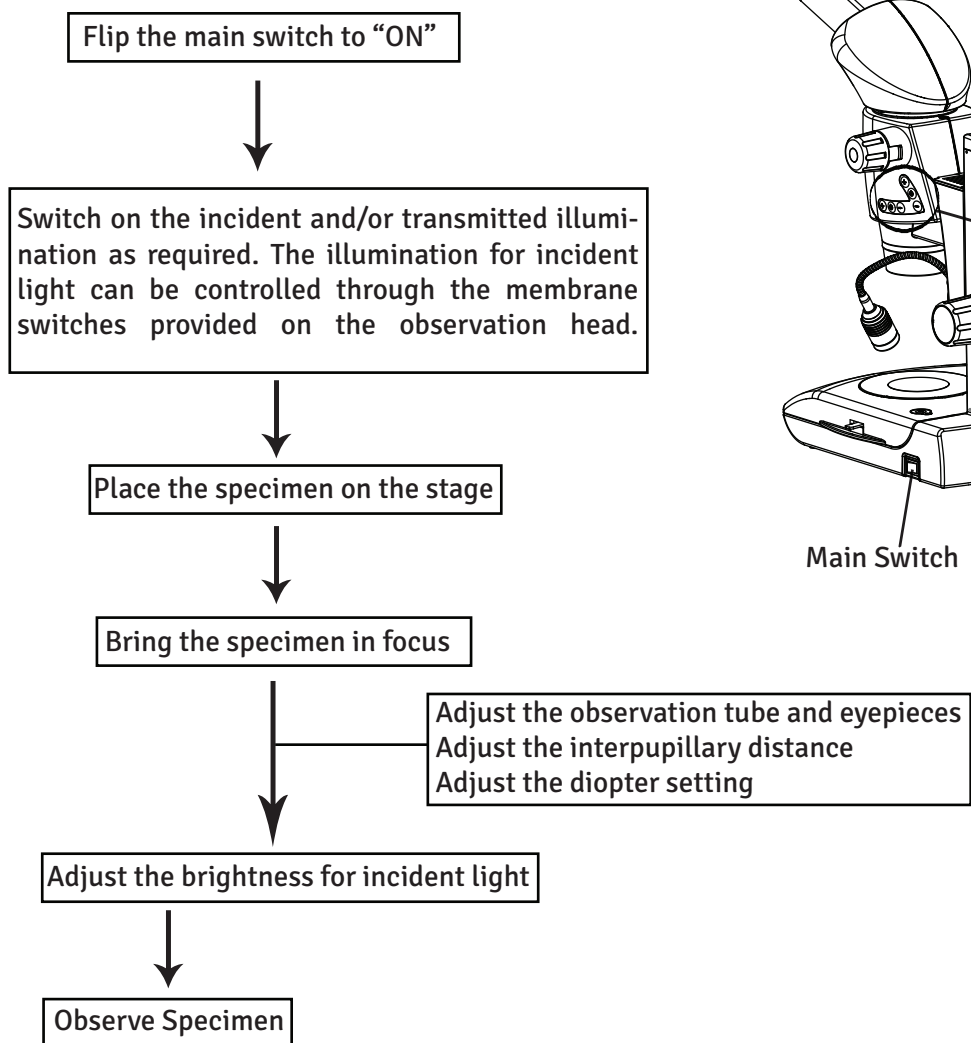
17. ELECTRICALS

Input rating	100V - 240V / 50 - 60Hz										
Output rating	24V - 2.7A										
Fuse rating	250V / 1.4A										
Voltage fluctuation	+/- 10% (Fluctuation more than +/- 10% may damage to the instrument. In high voltage fluctuating regions voltage stabilizing provisions are recommended for longer life of the instrument.)										
Internal fuse	1.4A / 250V										
Fuse rating	250V / 1.4A										
Operational Environment	<table> <tr> <td>Altitude</td> <td>2000m max.</td> </tr> <tr> <td>Temperature</td> <td>0° - 40°C (indoor use only)</td> </tr> <tr> <td>Relative humidity</td> <td>85% max. (no condensation)</td> </tr> <tr> <td>Pollution level</td> <td>Degree 2</td> </tr> <tr> <td>Installation</td> <td>C</td> </tr> </table>	Altitude	2000m max.	Temperature	0° - 40°C (indoor use only)	Relative humidity	85% max. (no condensation)	Pollution level	Degree 2	Installation	C
Altitude	2000m max.										
Temperature	0° - 40°C (indoor use only)										
Relative humidity	85% max. (no condensation)										
Pollution level	Degree 2										
Installation	C										
Storage environment	<table> <tr> <td>Temperature</td> <td>20° to 60°C</td> </tr> <tr> <td>Relative humidity</td> <td>90% max. (no condensation)</td> </tr> </table>	Temperature	20° to 60°C	Relative humidity	90% max. (no condensation)						
Temperature	20° to 60°C										
Relative humidity	90% max. (no condensation)										
Protection Class	Class 1										
Power cord	Use only the recommended power supply cord. Using the wrong power cord could result in danger or fire. The protection class1equipment should be connected to PE (protective earth) terminal.										

18. SYSTEM DIAGRAM



19. SUMMARY OF OBSERVATION PROCEDURE



20. TROUBLESHOOTING GUIDE

Under certain conditions, performance of the unit may be adversely affected by factors other than defects. If problems occur, please review the following list and take remedial action as needed. If you cannot solve the problem after checking the entire list, please contact Labomed for assistance.

OBSERVATION	CAUSE	REMEDY
Uneven brightness in observation field	The incident illumination is low. The transmitted illumination is blocked by the specimen.	Increase the incident illumination Place an opaque specimen or move the specimen. Use incident light.
The Light does not glow at all.	The power cord is not attached. The microscope is not switched on. The power button is not switched on. The fuse is blown.	Check the power cord. Attach it precisely. Switch on the microscope. Switch indicator will glow when the power is on. Check the fuse. If blown, replace with a live fuse. Adhere caution!!
The specimen does not focus	The specimen is not focused properly. The specimen is too small. The specimen is too big.	Focus the specimen first on the lowest magnification. Achieve best focus using the coarse adjustment knob. The specimen is too small. Slides with micro dissection are not visible on stereo microscopes. The specimen is too big to focus. Use smaller specimen.



Labo America Inc.
920 Auburn Court
Fremont, CA
94538
U.S.A.

Phone: 510-445-1257

Fax: 510-991-9862

Email: sales@laboamerica.com

www.laboamerica.com

EU|REP.

Labomed Europe b.v.
Essebaan 50
2908 LK Capelle aan den IJssel
The Netherlands
Phone: +31-10-458-4222,
Fax: +31-10-450-8251
E-mail: info@labomedeuropa.com



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