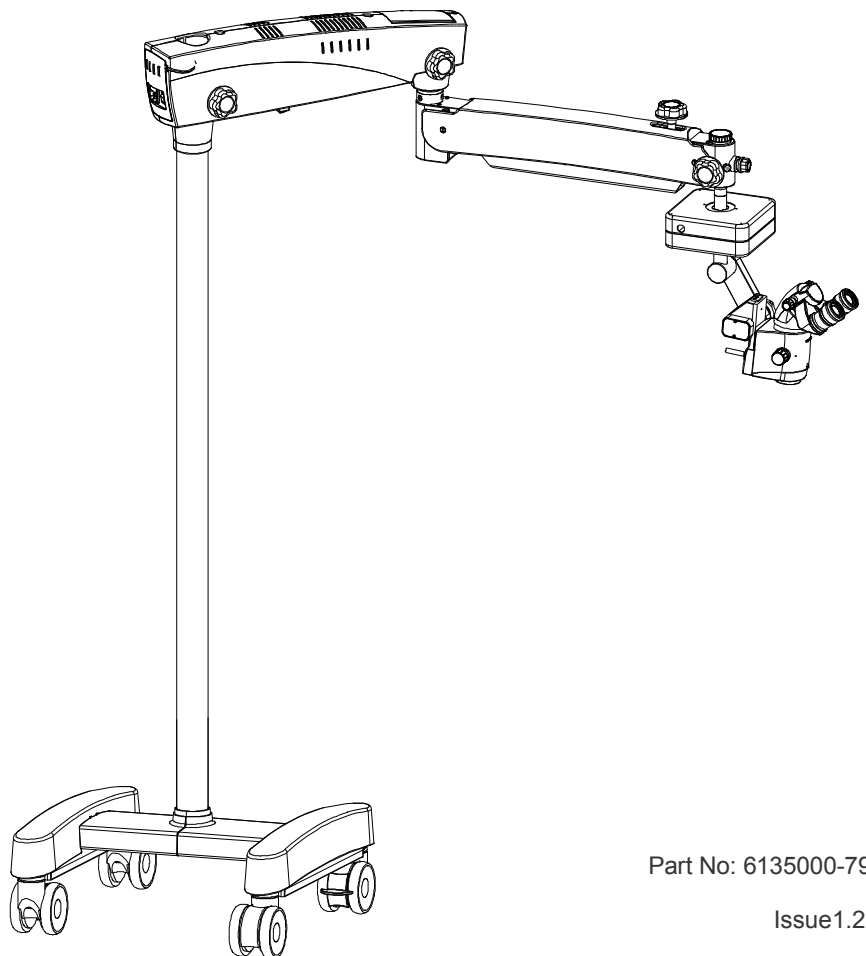


PRIMA OPH User Manual

Operating Surgical Microscopy



Part No: 6135000-795

Issue 1.2

Printed on: March 2016

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.

Warnings & Cautions

LABOMED is not responsible for the safety and reliability of this instrument when:

- Assembly, disassembly, repair, or modification is made by unauthorized dealers or persons.
- Instrument is not used in accordance with this User's Guide.

WARNING: AN INSTRUCTION THAT DRAWS ATTENTION TO RISK OF INJURY OR DEATH.



WARNING: UNITED STATES FEDERAL LAW AND EUROPEAN REGULATIONS REQUIRE THAT THIS DEVICE BE PURCHASED ONLY BY A PHYSICIAN OR A PERSON ACTING ON BEHALF OF A PHYSICIAN.

WARNING: THIS INSTRUMENT SHOULD BE USED IN STRICT ACCORDANCE WITH THE INSTRUCTIONS OUTLINED IN THIS USER'S GUIDE. THE SAFETY OF THE OPERATOR AND THE PERFORMANCE OF THE INSTRUMENT CANNOT BE GUARANTEED IF USED IN A MANNER NOT SPECIFIED BY LABOMED TECHNOLOGIES.

WARNING: DO NOT REPAIR OR SERVICE THIS INSTRUMENT WITHOUT AUTHORIZATION FROM THE MANUFACTURER. ANY REPAIR OR SERVICE TO THIS INSTRUMENT MUST BE PERFORMED BY EXPERIENCED PERSONNEL OR DEALERS WHO ARE TRAINED BY LABOMED OR SERIOUS INJURY TO THE OPERATOR OR PATIENT MAY OCCUR.

WARNING: MODIFICATIONS TO THIS INSTRUMENT ARE NOT ALLOWED. ANY MODIFICATION TO THIS UNIT MUST BE AUTHORIZED BY LABOMED OR SERIOUS INJURY TO THE OPERATOR OR PATIENT MAY OCCUR.

WARNING: IF THIS INSTRUMENT IS MODIFIED, APPROPRIATE INSPECTION AND TESTING MUST BE CONDUCTED TO ENSURE CONTINUED SAFE USE OF THIS INSTRUMENT.

WARNING: TO AVOID RISK OF ELECTRIC SHOCK, THIS EQUIPMENT MUST ONLY BE CONNECTED TO A SUPPLY MAIN WITH PROTECTIVE EARTH OR DAMAGE TO THIS INSTRUMENT AND/OR INJURY TO THE OPERATOR OR PATIENT MAY OCCUR.

WARNING: ENSURE THAT THE VOLTAGE APPLIED TO THE UNIT IS THE SAME AS THE VOLTAGE THAT IS INDICATED ON THE DATA PLATE OR DAMAGE TO THE UNIT MAY OCCUR.

WARNING: THIS INSTRUMENT MUST BE PLUGGED INTO AN OUTLET WITH AN EARTH GROUND. DO NOT REMOVE OR DEFEAT THE EARTH GROUND CONNECTION ON POWER INPUT CONNECTOR OR THE UNIT'S POWER CORD OF THIS INSTRUMENT OR DAMAGE TO IT AND/OR INJURY TO THE OPERATOR OR PATIENT MAY OCCUR.

WARNING: THE EQUIPMENT OR SYSTEM SHOULD NOT BE USED ADJACENT TO OR STACKED WITH OTHER EQUIPMENT AND THAT IF ADJACENT OR STACKED USE IS NECESSARY, THE EQUIPMENT OR SYSTEM SHOULD BE OBSERVED TO VERIFY NORMAL OPERATION IN THE CONFIGURATION IN WHICH IT WILL BE USED.

WARNING: THIS INSTRUMENT IS NOT SUITABLE FOR USE IN THE PRESENCE OF FLAMMABLE ANESTHETIC MIXTURES, SUCH AS OXYGEN OR NITROUS OXIDE.

WARNING: BECAUSE PROLONGED INTENSE LIGHT EXPOSURE CAN DAMAGE THE RETINA, THE USE OF THE DEVICE FOR OCULAR EXAMINATION SHOULD NOT BE UNNECESSARILY PROLONGED, AND THE BRIGHTNESS SETTING SHOULD NOT EXCEED WHAT IS NEEDED TO PROVIDE CLEAR VISUALIZATION OF THE TARGET STRUCTURES. THIS DEVICE SHOULD BE USED WITH FILTERS THAT ELIMINATE UV RADIATION (<400 NM) AND, WHENEVER POSSIBLE, FILTERS THAT ELIMINATE

WARNING: DURING THE TRANSPORTATION, THE EQUIPMENT SHOULD BE IN FOLDING POSITION AS SHOWN IN FIGURE ON PAGE NO.19 SECTION "MOVING POSITION OF THE SYSTEM".

Warnings & Cautions (continued)

CAUTION: AN INSTRUCTION THAT DRAWS ATTENTION TO THE RISK OF DAMAGE TO THE PRODUCT.



CAUTION: THE INTERNAL CIRCUITRY OF THE INSTRUMENT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE DEVICES (ESDS) THAT MAY BE SENSITIVE TO STATIC CHARGES PRODUCED BY THE HUMAN BODY. DO NOT REMOVE THE COVERS WITHOUT TAKING PROPER ESDS PRECAUTIONS.

CAUTION: DO NOT USE SOLVENTS OR STRONG CLEANING SOLUTIONS ON ANY PART OF THIS INSTRUMENT AS DAMAGE TO THE UNIT MAY OCCUR. SEE MAINTENANCE SECTION FOR DETAILED CLEANING INSTRUCTION.

CAUTION: MEDICAL ELECTRONIC EQUIPMENT NEEDS SPECIAL PRECAUTIONS REGARDING EMC AND NEEDS TO BE INSTALLED AND PUT INTO SERVICE ACCORDING TO THE EMC INFORMATION PROVIDED IN THE ACCOMPANYING DOCUMENTS.

CAUTION: PORTABLE AND MOBILE RF COMMUNICATIONS EQUIPMENT CAN AFFECT MEDICAL ELECTRICAL EQUIPMENT.

CAUTION: THIS INSTRUMENT IS NOT TO BE USED NEAR HIGH-FREQUENCY EMITTING SURGICAL EQUIPMENT.

CAUTION: THIS INSTRUMENT IS NOT INTENDED TO BE CONNECTED TO EQUIPMENT OUTSIDE THE CONTROL OF LABOMED OR MUST BE TESTED TO AN APPLICABLE IEC OR ISO STANDARDS.

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The LABOMED Prima OPH is a surgical and diagnostic microscope, which is adaptable for different surgical needs for consistent visualization during all intra operative phases of ophthalmic surgery by providing a magnified view of the surgical field without compromise to performance.

The microscope provides extremely high optical image quality, good depth of focus and wide field of view for precise surgery. Illumination control, inbuilt tilt, adjustment of the observation head help to reduce the surgeon's work fatigue and allow comfortable use over long period.

Salient features of this Microscope are:

1. The observation head can easily be positioned with the help of suspension arm .
2. An advanced 5-step magnification changer allows an optimal magnification for a particular surgery from five different magnifications.
3. Cold light illumination with a high intensity 50W LED lamp is provided using a fiber optic guide for proper illumination. The illumination is further adjustable up to its most suitable brightness using intensity control knob suitably located at the suspension arm, and is easily approachable to the surgeon.
4. When the microscope is not in use, the suspension arm can be folded over the main body to store it compactly.
5. Rigid H-form base with castor wheels provides greater stability as well as mobility to the instrument.
6. Dual Iris Diaphragm allows greater depth of field particularly valuable for photography.

2 SAFETY INSTRUCTIONS

Safety

This instrument described in this manual has been developed and tested in accordance with LABOMED safety standards and with national and international regulations. A high degree on instrument safety is thus ensured.

This manual contains information on safety aspects governing the use of this product and brief summary of important precaution for this user.

Additional safety notes are also contained in other parts of this user's manual; they are marked with a warning triangle containing an exclamation mark as shown here. Please pay special attention to these safety notes.

Safety is only ensured when this instrument is operated properly. Please read this manual carefully before turning the instrument on. Also read through the user's manuals on the other equipment used with this instrument. You may obtain further information from our service organization or authorization representative.

Directives and standards

The instrument in this manual has been designed in the compliance with the following standards

- EN
- IEC
- UL
- CSA

- As per Directive 93/42/EEC, the unit is a Class I instrument
- For USA: FDA classification Class I
- IEC 60601-1:2007(3rd edition) Compliance

Please observe all applicable accidental prevention regulations.

3 SPECIAL INSTRUCTIONS for INSTALLATION & USE

Safe Working Order

- Do not operate the equipment contained in the delivery package in
- Areas having explosion or inflammability, risk the presence of inflammable anesthetics or volatile solvents such as alcohol, benzene or similar chemicals.
- Do not install, store or use the instrument in damp rooms. It is important and cautionary to protect the instrument from being exposed to humidity, wet conditions, water splashes or water sprays.
- Do not use the instrument if you notice any electrical arcing, sparks, abnormal noises, smokes or fumes. Unplug it immediately and contact authorized LABOMED service representative.

Ensure that the power point is properly grounded

- Do not force cable connections. If the male and female parts do not readily connect, make sure that they are appropriate for one another. If any of the connectors are damaged, have our service representative repair them.
- The effects of Radio waves and interference on medical imaging systems and equipment are unpredictable. It is cautionary to mention that mobile phones or radios not be used in the proximity of the equipment.
- Anything concerning repairs, customization and upgradation this instruction must be carried out by LABOMED authorized representative failing which, LABOMED product warranty will not be applicable.
- The instrument must be operated for its intended use and only after duly understanding the operation instructions or undergoing training on use of the instrument by a LABOMED authorized representative.
- Only use the instrument with the accessories supplied. Should you wish to use other accessories equipment, make sure that LABOMED or the equipment manufacturer has certified that its use will not repair the safety of the instrument.
- It is recommended that the user's manual be kept accessible always.
- Do not pull at the light source cable, at the power cord or at other cable connections.

It is recommended to get the instrument checked once every 12 months to ensure its optimum performance.

Requirement for operation

Installation of the instrument must only be carried out by an authorized LABOMED agent or representative. Please make sure that the following requirements for operation remain fulfilled in the future:

- All mechanical connections(details in the user's manual) which are relevant to safety and properly connected and screw connections tightened.
- All cable and plugs are in good working condition.
- The voltage setting on the instruments conforms to the rated voltage of the line supply on site.
- The power cord being used in the one designed for use with this instrument.

Before every use after re-equipping the instrument

- Make sure that all "Requirement for operation" are fulfilled.
- Go through the checklist
- Re- attach or close any covers, panels or caps which have been removed or opened.
- Pay special attention to warning symbols on the instrument (triangular warning signs with exclamation marks), labels and any parts such as screws or surfaces painted red).

For every use of the instrument

- Avoid looking directly into the light source, e.g. into the microscope objective lens or a light Guide.
- All light radiation have an effect on skin and biological tissues. For your own protection and advices to keep the light level to the absolute minimum required for your procedure.

Warning!

Only the right configuration of LABOMED Prima surgical microscope must be used for related procedure.

Warning labels and notes



Caution:

Observe all warnings labels and notes!
If any label is missing on your instrument or has become illegible, please contact us or one of our authorized representatives.
We will supply the missing labels.



Instrument label plate

The Instrument label plate indicates the following:

- Name of the unit
- Cat. No.
- Rated voltage and current consumption
- Rated frequency range
- Serial number
- Safety compliance
- Brand name



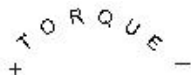
Brightness Control

After the illumination has been switched on, you can continuously adjust the brightness of the fiber illumination by turning the appropriate knob.



Red & Green LED

LED light shown here at front of swivel arm, always glow "green" during working position of the instrument. This LED will glow "RED" when suspension arm is parked at uppermost position. I.e. instrument is not in working position. This is a warning to user that he has to bring down the arm to use again, causing LED to become green again. Please note that at parking position, illumination LED will be off to save LED life but at the same time fans will be in operating condition to keep the unit cool & safe.



Balance setting

Turn the screw to adjust the balance setting of the suspension arm.



Ceiling and wall mount

Don't use the mount to support yourself



Maximum load

When the surgical microscope are mounted on the suspension systems, the overall weight of the microscope including accessories and coupling must not exceed a maximum value of 7.5 kg. Please consult the user manual for the suspension system about the admissible maximum load.



Accompanying Documents must be consulted

REF

Catalog Number



Compliance to Medical Device Directive 93/42/EEC



Protective Earth

Warning labels and notes (Conti...)



This Way Up-Indicates correct upright position of the transport package.



Keep Dry- Transport package shall be kept away from rain.



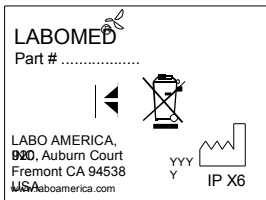
The CE mark(an acronym for the French “Conformite Europeenne”) certifies that a product has met European Union health, safety and environmental requirements which ensure consumer safety



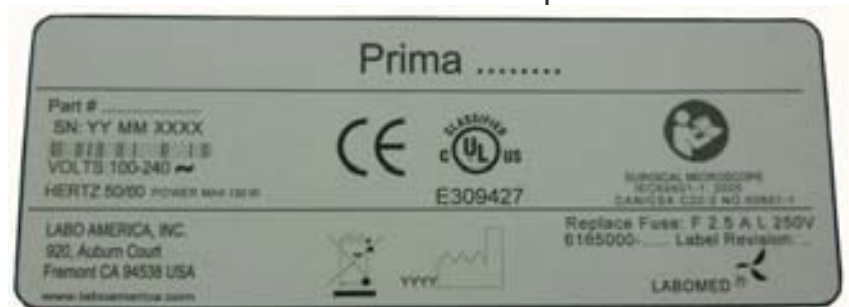
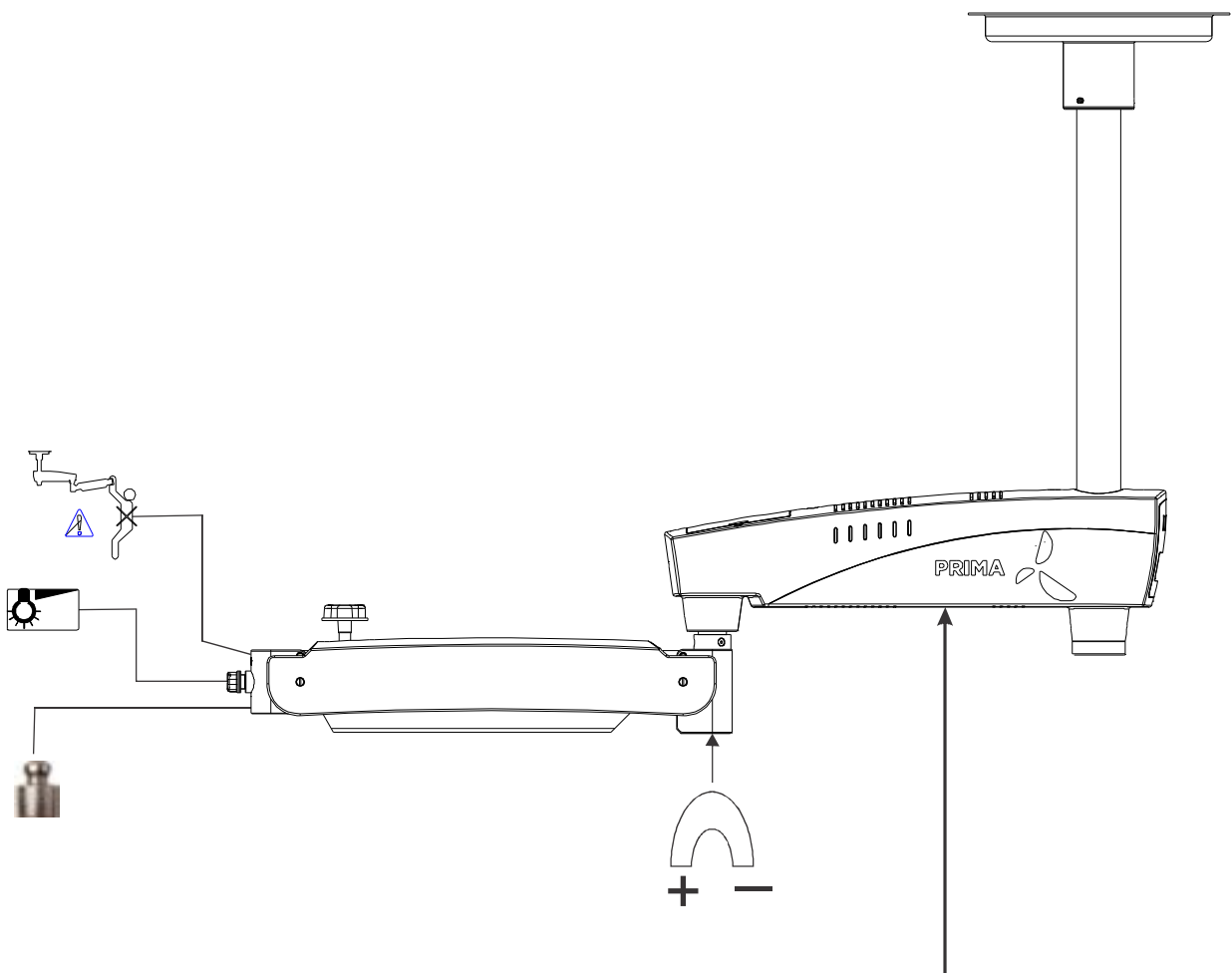
Year of manufacture used on PRODUCT DATA



Fragile- Contents of the transport package are fragile and therefore shall be handled with care



IPX label for foot control switch



4 DESCRIPTION OF PARTS

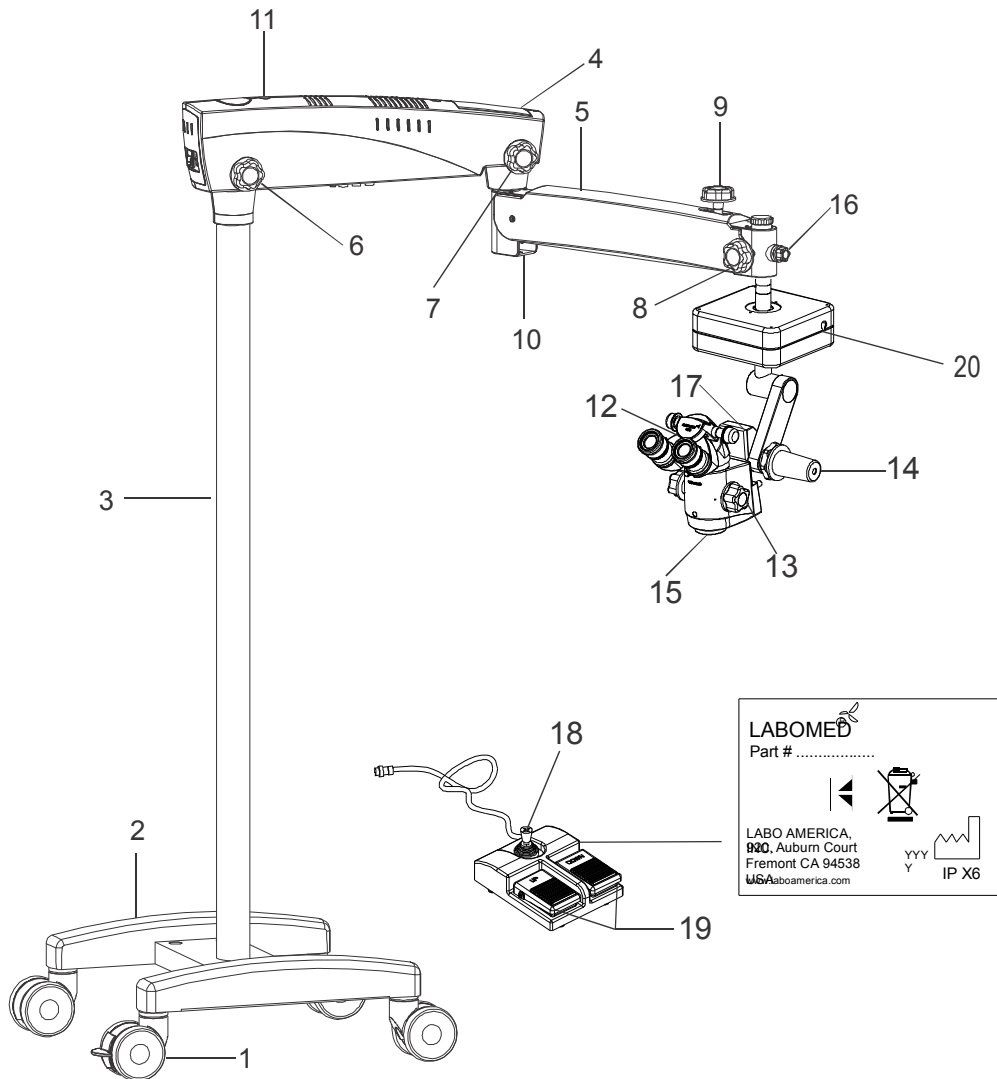


Fig. 1

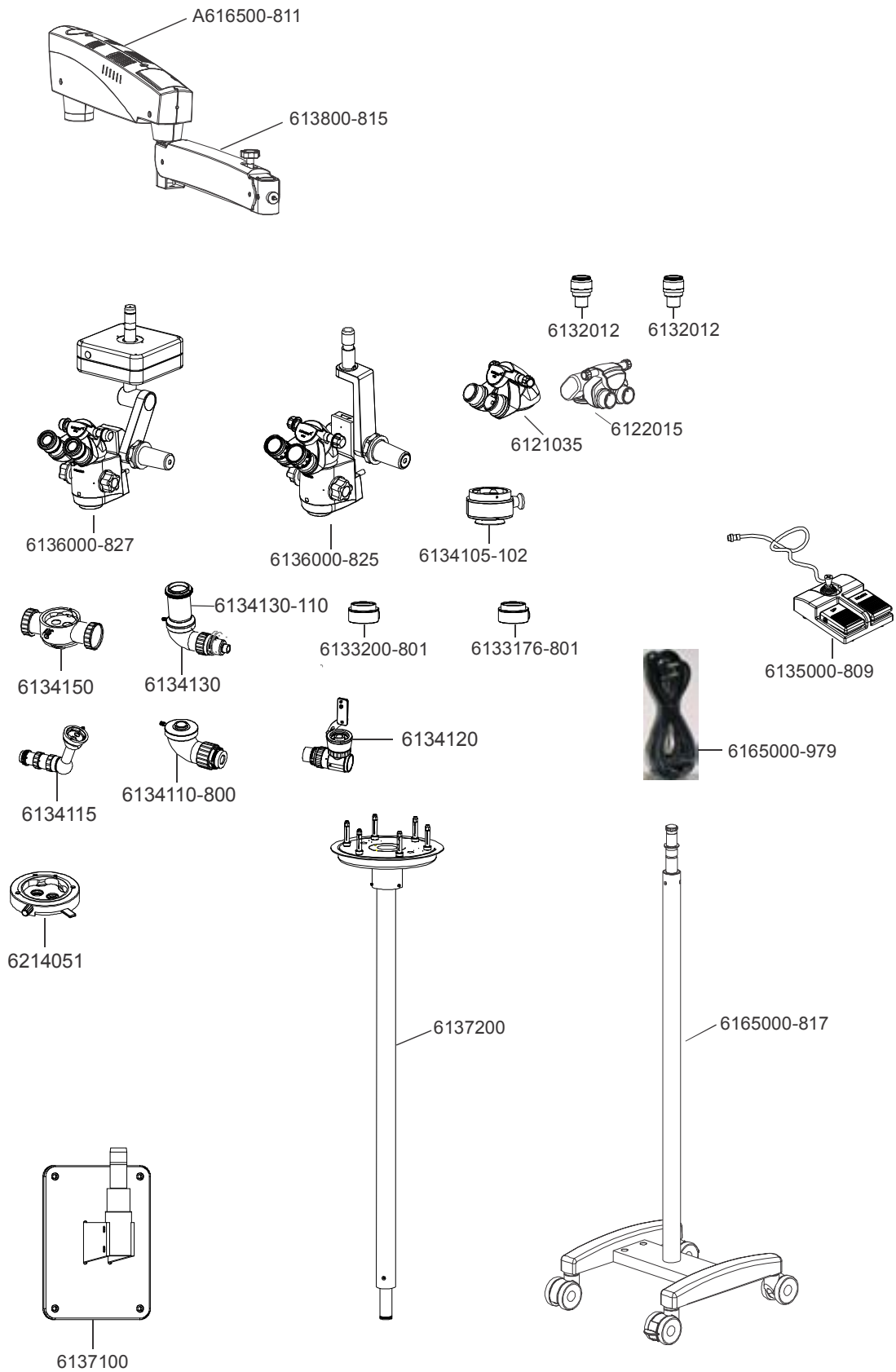
- | | |
|---|--|
| 1. Wheel with brake | 2. Metal base |
| 3. Column | 4. Swivel arm |
| 5. Suspension arm | 6. Swivel arm locking knob |
| 7. Suspension arm movement locking knob | 8. Coupling movement locking knob |
| 9. Suspension arm hydraulic movement lock | 10. Suspension arm spring tension adjustment |
| 11. Swivel arm cover | 12. Binocular head with eyepieces |
| 13. Magnchanger | 14. Handle |
| 15. Common Main Objective | 16. Illumination Control Knob |
| 17. Z-axis | 18. Joystick for XY Movement |
| 19. Foot paddles for Z-axis | 20. XY Coupling |

LABOMED
Part #

LABO AMERICA,
930, Auburn Court
Fremont CA 94538
USAboamerica.com

IP X6

5 SYSTEM DIAGRAM



Description of Part No.

Part No.	Description
1. A616500-811	Swivel arm assembly
2. A613800-815	Suspension arm assembly
3. 6136000-827	XY Coupling
4. 6136000-825	Z Axis Coupling
5. 6132012	12.5x Eyepiece
6. 6132010	10x Eyepiece
7. 612103545°	inclined Binocular Head
8. 6122015210°	tiltable binocular tube
9. 6133200-801	200mm Objective
10. 6133176-801	175mm Objective
11. 6135000-809	Foot Control for XY control
12. 6137500	Wall Mount
13. 6137200	Ceiling Mount
14. 6165000-817	Floor Mount
15. 6134150	Double Beam Splitter
16. 6134115	Assistoscope
17. 6134120	Sony Handycam Adaptor
18. 6134130	DSLR Adaptor
19. 6134130-110	Bayonet Mount for DSLR
20. 6134110-800	CCD Attachment 1/2" camera mount
21. 6165000-979	Indian Power Cord
22. 6165000-974	Shuko Power cord
23. 6165000-973	USA Power Cord
24. 612086-972	Australian Power Cord
25. 6214051	Double iris diaphragm

6 UNPACKING

The appliance is delivered in sub-assembled groups along with one set of Installation Kit and one instruction / service manual.

Please check following at the time of unpacking:

1. Mobile supporting base with brakes on castor wheels, or the type of mounting system
2. Column, depending on the type of mount ordered
3. Swivel arm and Suspension arm assembly with fibre optic cable.
4. Cover for swivel arm (pre-fitted to the microscope)
5. Inclined coupling with magni-changer assembly and objective (as ordered)
6. Observation Head, (inclined or ergo) as ordered
7. Paired Eye Pieces, as ordered
8. Power Cord
9. Set of sterilizable caps
10. Installation Kit
 - a) Allen Wrench 5.00mm
 - b) Allen Wrench 8.00mm
11. Instruction cum Operating Manual / Service Manual

7A *INSTALLATION-Base (mobile stand)*

1 Cut the tape of one of wheel support assembly box as shown in fig. 1



Fig 1

2 Remove the 4 no's of Foam sheets as shown in fig. 2



Fig 2

3 Uplift the Wheel Support assembly as shown in fig. 3.



Fig 3

4 Place the wheel support gently on the floor as shown in fig 4



Fig 4

5 Uplift the top cover as shown in fig. 5 & place it close to the wheel support assembly & Kindly repeat the same procedure for other wheel support assembly as well



Fig 5

6 Place both the wheel support assemblies on the floor close to each other & Take out 2 No's. each of screws already mounted on both the wheel support assemblies respectively with the provided allen wrench (8 mm) as shown in fig. 6



Fig 6

7 Cut the tape of Center support assembly box as shown in fig. 7



Fig 7

8 Remove the 2 no's. of Foam sheets as shown in fig. 8



Fig 8

9 Uplift the Center Support assembly as shown in fig. 9



Fig 9

10 Place the center Support assembly on the wheel support assembly by aligning corresponding holes as shown in fig. 10.



Fig 10

11 Tighten 4 screws as shown in fig. 11 with the help of allen wrench 8mm.



Fig 11

12 Referring Fig. 12 engage the top cover shown as (A) on both the wheel support assemblies now ready to use.



Fig 12

7B MICROSCOPE INSTALLATION

1. Open the microscope box. Remove column from the box. Engage this column onto the shaft by aligning three guide holes on column and shaft, shown as B in Fig 13.
2. Tighten three allen screws from the sides, shown as C in Fig 14.
3. Make sure that during assembly of the column, ring (D) is fixed in place, as shown in Fig 15.

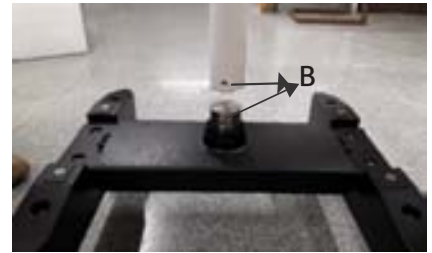


Fig 13

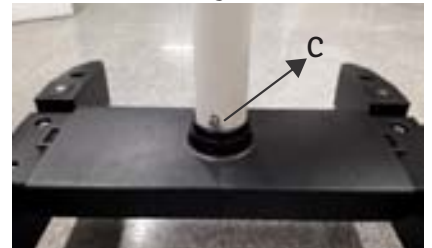


Fig 14

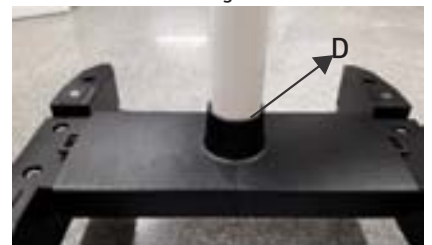


Fig 15

- 7.3 Retrieve the swivel arm and suspension arm assembly from the packing box and follow instruction as below (refer Fig. 3)
Ensure loosening of swivel arm lock knob (A).

Install the swivel arm assembly on the upright holding shaft (1) figure 3.

Lock the swivel arm with threaded plug (2) from the top.

Put protective cap (3) in place and loosen suspension arm locking B knobs so that it can be rotated.

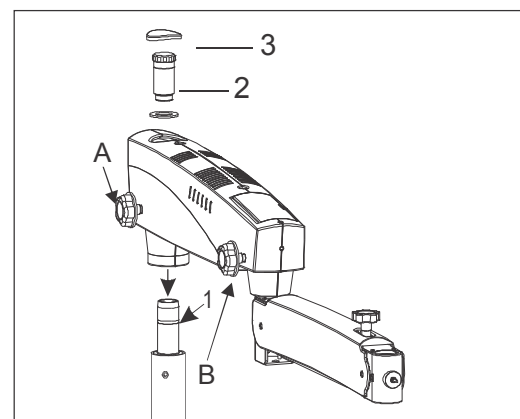


Fig.3

7.4 Retrieve the XY or Z- axis coupling assembly(as ordered) from the packing and follow as below refer Fig. 5.

- Install the coupling to the suspension arm by sliding the guiding shaft (1) to the suspension arm.
- Lock the inclined coupling with the threaded plug (3).



Make sure that safety screw must tight in place at position (2) to avoid sudden falling of the coupling. Safety screw tagged within the arm.

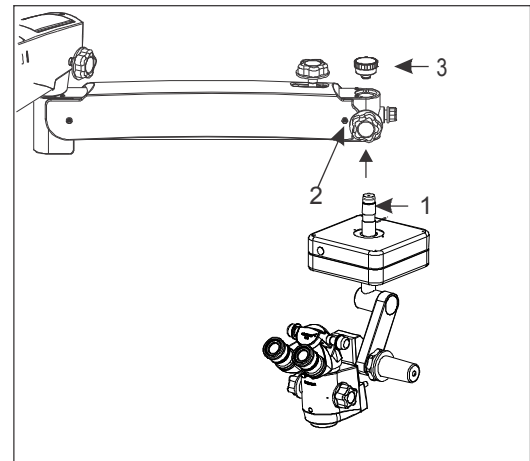


Fig. 5

7.5 Mounting the light guide

- Switch off the illumination system
- The light guide comes pre-routed through swivel arm (that houses the LED illumination system) and the suspension arm.
- Insert the light guide into the receptacle in the microscope till it clicks into position as shown as A in Fig. 6
- Make sure that the light guide has been routed in such a way that the carrier system and the surgical microscope are not obstructed, and that they can be moved in their entire range of movement without stretching, extreme, kinking or twisting of the light guide.

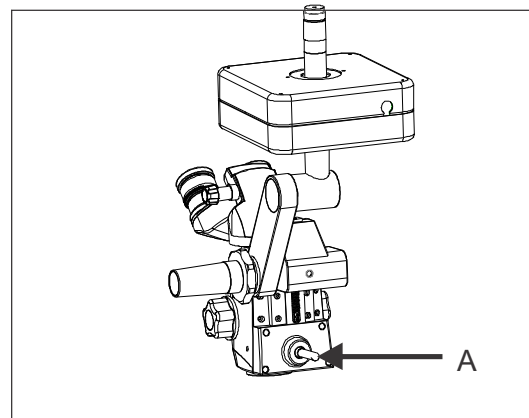


Fig. 6

7.5 Install the binocular head and eyepieces on the magni-changer. Secure the binocular head with head locking screw shown as (A) in figure 6a.

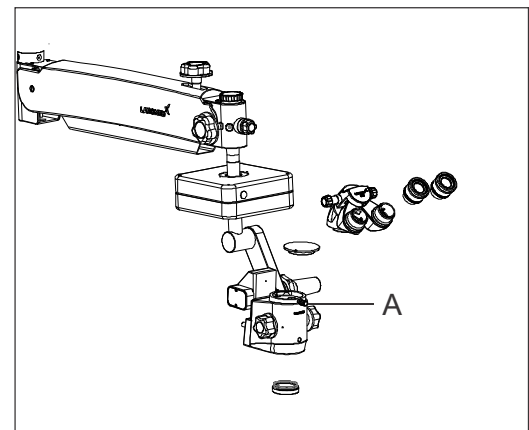


Fig. 6 a

8 Electrical Connections

Connect the power cable to the AC inlet socket (2) provided on the back of the swivel arm as shown in the fig 8.

Switch on the power from on/off switch (2).

Note: Power supply is designed with universal input 100V-240V AC, 50/60Hz. To plug in follow instruction on electrical label provided at bottom of the arm as shown (3) here in Fig. 8.

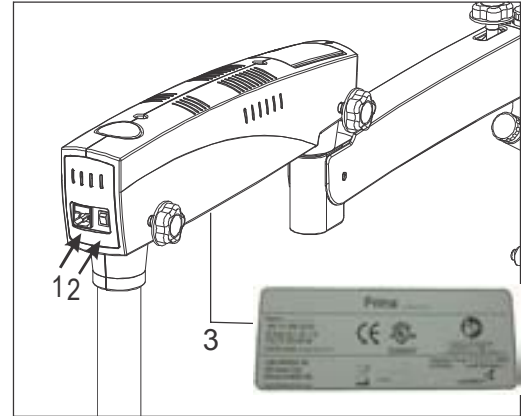


Fig. 8

9 Controls

9.1 ON/OFF switch (Shown as 2 in fig. 8 above)

It is located on the back of the swivel arm. At 'ON' position, green LED glows and cooling fan starts running. Keep the intensity control knob at minimum level before switching on the system.

To save burning life of LED, switch OFF the appliance if the microscope is not in use for longer time.

9.2 Intensity control knob

It is located in front of the suspension arm shown as (A) in Fig. 9. Brightness of field of view can be adjusted as per user comfort using intensity control knob.

9.3 Swivel arm locking knob

This knob helps you to lock the movement of swivel arm at the desired position after initial focusing of the attendance area by turning it clockwise, knob is shown as (B) in Fig. 9 .

9.4 Brakes

Locks the stand from unwanted movement by pressing down the two brakes provided on caster wheels. To unlock press upper portion of brake. See Figure 10.

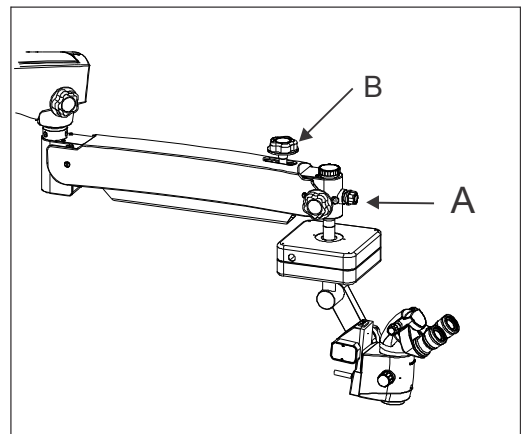


Fig. 9

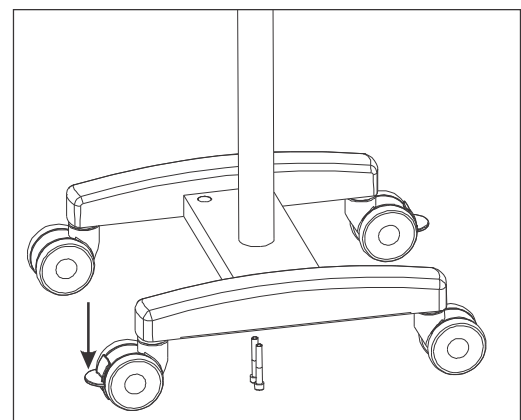
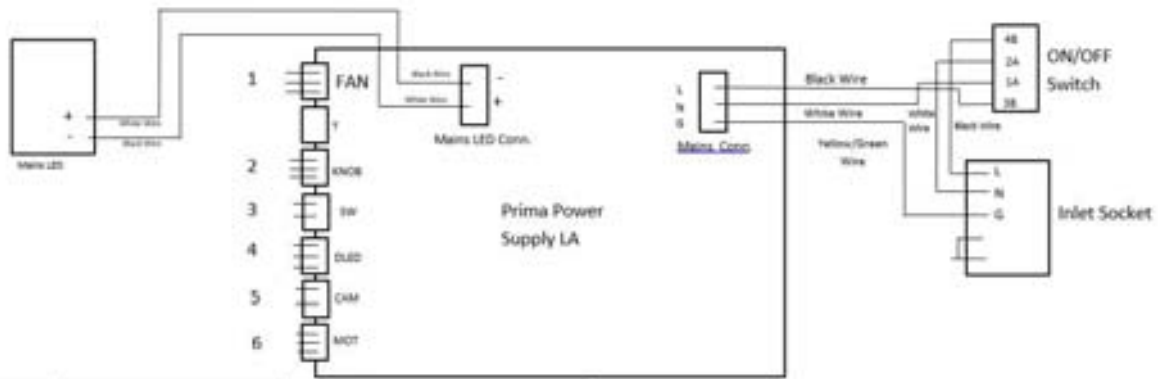


Fig. 10

10 Prima Wiring Coding Diagram



Wire Marking No.	Power Supply Marking	Description
1	FAN	Main LED Fan Wire
2	KNOB	Potentiometer Wire
3	SW	Limit Switch Wire
4	DLED	Dual LED Wire
5	CAM	Camera Wire
6	MOT	Motor Wire

11 INSTRUCTIONS FOR USING THE MICROSCOPE

Setting up of Microscope:

- 1 Lock all the brakes on base wheels after setting up of microscope on the attendance area for stability.
- 2 Although tension on microscope is factory preset as per the ordered configuration. Still user can adjust up and down force by tuning the allen screw clockwise or anticlockwise with the help of a 8.0 mm allen wrench.
Refer Fig. 11 to see the exact location of tension adjusting screw.
- 3 Lock the Up & Down movement of suspension arm using locking knob(B) in fig. 9 after coarse focusing of the attendance area.
- 4 Adjust the eye distance as per IPD scale according to your convenience.
- 5 The illumination is controlled through the control knob (A), fig. 11. Rotate it clockwise or anti clock wise to achieve desired illumination level Functional setup keep it as minimum.

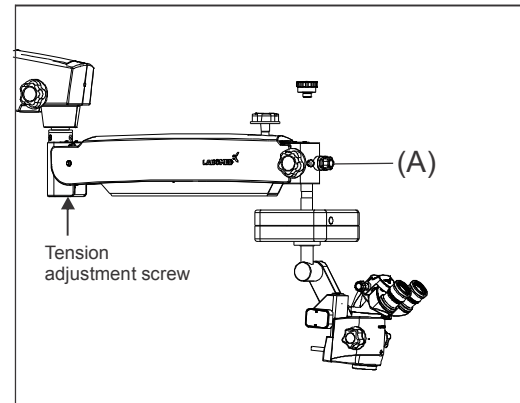


Fig. 11

Setting up of magnification (Ref. Fig. 12)

- 1 Adjust to highest magnification with one of the rotating knobs (12a) provided at magnification changer.
- 2 Fine focusing is done through foot paddle
- 3 Absolute centering of observation area in field of view can be done by manual handle(12c).
- 4 Make sure that the magnification changer is engaged in the index point at the click stop position.

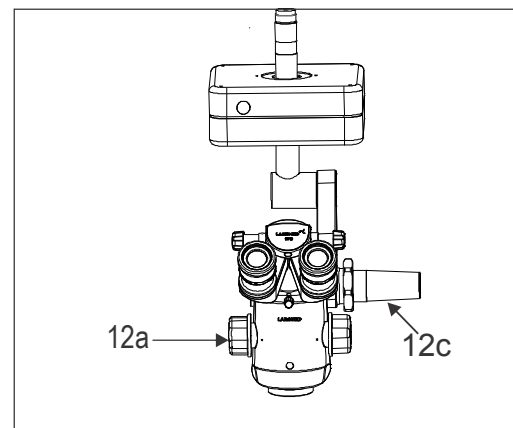


Fig. 12

INSTRUCTIONS FOR USING THE MICROSCOPE

Intended use:

The PRIMA OPH surgical microscope has been designed for surgical procedures in the field of ophthalmology, i.e. the microscope meets the special requirements of this discipline.

Description of the modules

The PRIMA OPH surgical microscope comprises the following modules:

1. **X-Y coupling**

The X-Y coupling allows fine, motorized positioning of the surgical microscope in a horizontal plane. The range of travel is 50 mm x 50 mm.

The X-Y coupling is provided with a recentering facility. When you press the red activator button shown as (A) in fig. 13

- the X-Y coupling adopts its center position
- XY movement is done through joystick provided in foot control.

Z axis movement: Z axis coupling allows fine motorized focusing of the area of interest within a travel range of 40mm. Two foot paddles are provided on the foot control to facilitate up and down movement of Z-axis

2. **Support arm for the surgical microscope**

The support contains a tilt device, allowing the viewing direction of the surgical microscope to be adapted to the surgical field as required, maximum tiltation is 90° forward.

3. **Main microscope**

The MAXlite coated optics of the main microscope provide superb optics quality. The microscope image displays optimum contrast and excellent detail recognition along with a large depth of field. The bright microscope image is a particular benefit in vitreoretinal surgery.

The objective lenses with the focal lengths of 175 mm and 200 mm are available for different working distances.

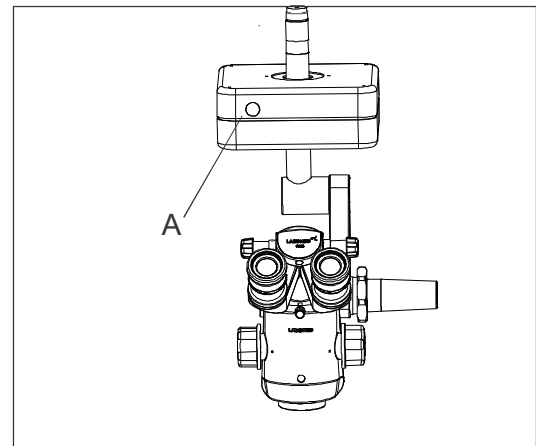


Fig. 13

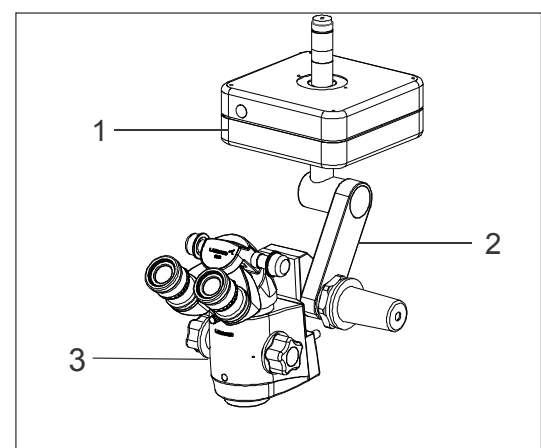


Fig. 14

INSTRUCTIONS FOR USING THE MICROSCOPE

The ergonomic 45 or 210 degree binocular tube is provided for the main surgeon. The large tilt range allows work with minimum fatigue.

The standard equipment includes eyepieces with a magnification factor of 10 x (option: 12.5 x).

12 Changing the objectives / eyepieces

1. The objectives can be taken out by rotating it in anti-clock wise direction. It can be threaded in by rotating in clock wise direction.
2. To install the eyepieces, insert in the eye tubes of observation head.
3. A range of objectives/eyepieces can be selected by choice.

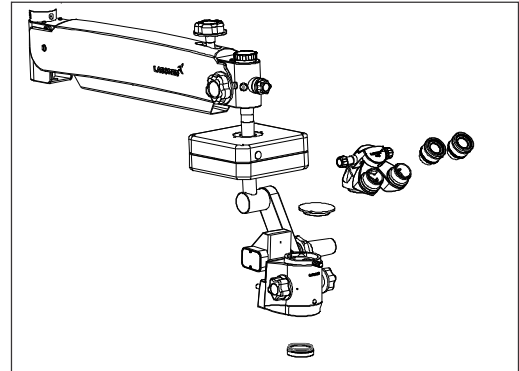


Fig. 15

13 Replacing the illumination source

Open the swivel arm cover's. Detach the fibre optic cable and replace the illumination assembly A with new assembly. Secure back the arm cover's.

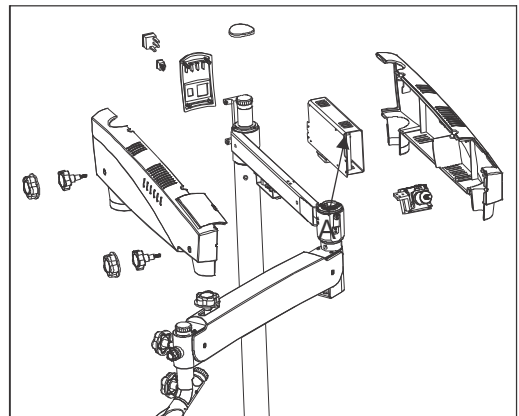


Fig. 16

14 Fuse replacement

The fuse is located with the AC inlet, provided near the on/off switch. Use a flat head screw driver to open the fuse compartment. Two fuses are provided in this, i.e. one is live fuse and second as spare fuse. Replace the blown fuse with live fuse and secure back the fuse compartment.

For fuse replacement refer label shown in fig. 17

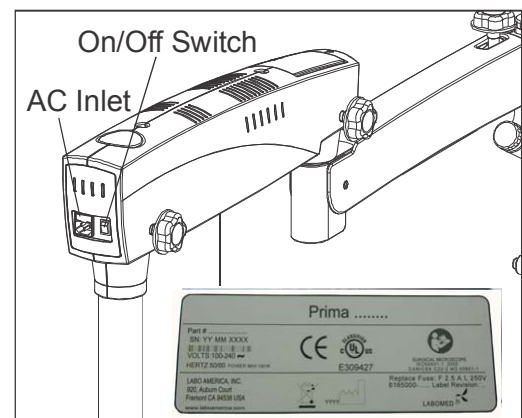


Fig. 17

15 Thermal cut-off

Although instrument is designed for safe working condition thru sufficient cooling facility provided with proper free and forced air circulation by the fans provided in electrical box. Further instrument is designed with a inbuilt safety mechanism with “auto thermal cut-off” if the temperature of LED is above 70°C. In case if thermal cut-off fails, no risk will happen to the instrument, only LED may get fuse. Here user needs to replace the LED only and thermal cut-off will start working again. To replace LED user may call LABOMED service personal or authorized dealer.

LED Specifications: 3.7V 13.5 Amp

16 Adjustment of Tension while using Accessories

After Supplementary accessories are mounted, the additional load of suspension arm must be compensated by adjusting tension on tension control screw provided on suspension arm by moving it clock wise or anticlockwise.

Refer fig. 18

1. Remove plate as shown by unscrewing two screws.
2. Loosen as much as possible the two allen bolts by using allen wrench of 4 mm as shown in fig 19. Note that these two screws will not come out
3. Use hexagonal wrench of 8mm in bolt (A) shown in fig. 20 rotate it clockwise to increase desired tension on Gas spring or vice versa.
4. After achieving the desired tension on gas piston, Re tighten the two screws back as shown in fig 19
5. Put back the plates shown in fig 18 in its position

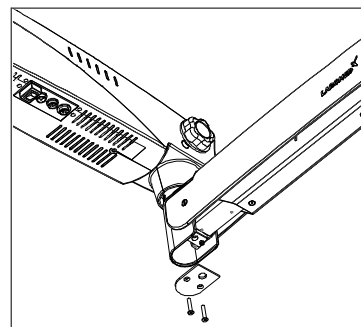


Fig. 18

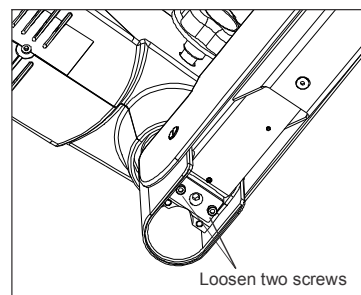


Fig. 19

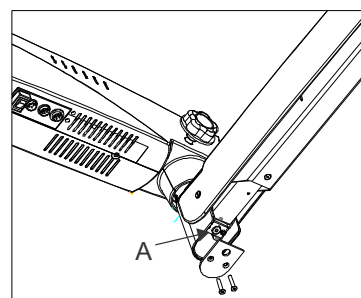
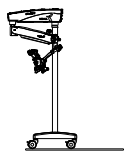
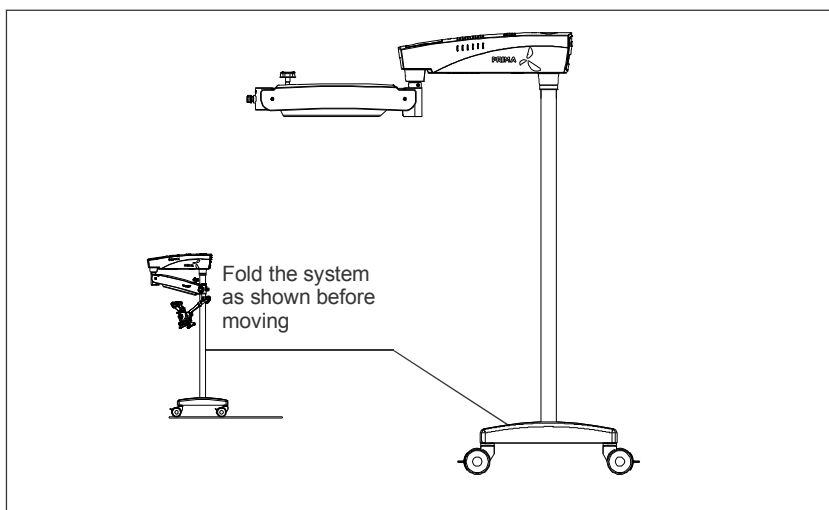


Fig. 20

Moving Position of the System



Position of the system for safe transportation.



Relocating the stand

Turn off the unit at the power switch

Disconnect the power cable from line power.

Remove the video cable from the video modules (e.g. video monitor, USB monitor) and the camera control unit.

Release locks by pressing the upper parts of the locks downward.

Bring the unit into its moving position.

Be careful of heights when passing through doorways.

Avoid collision of any kind.

Do not go over steps and edges: the stand might topple!

Be extremely careful when moving over slopes.

Do not park the stand on slopes

Press lock downward.

Check whether the stand is locked in position.

17 CLEANING AND SERVICING

13. CARE & MAINTENANCE (Fig. 11)

This instrument is a high grade technological product and not required any special periodical maintenance if handed carefully. To ensure optimum performance and safe working order of the instruments, its safe functioning must be checked once every 12months as per table below. We recommended having this check performance by our service representative as part of regular maintenance work. If a failure occurs which you cannot correct using the trouble-shooting table, attach a sign to the instrument stating out of order and contact our service representative for servicing part or circuit diagram etc.

Surgical Microscope Maintenance/Serviceing Check

Microscope: -

Owner: -

Month: -

Year:-

Date of Purchase:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
DAILY AFTER USE																															
Wipe of any oily marks/finger prints from eye piece & CMO other Optical parts with lens paper																															
Turn off Microscope																															
Replace Dust Cover																															
Each Month																															
Clean microscope body with water moistened tissue																															
Use lens cleaning fluid on lens tissue to wipe lenses																															
Remove Fibre Optical Cable and clean																															
6 monthly																															
Service Inspection																															
Smooth Function of Locking Knobs																															
Smooth Functioning of Torque Adjustment Mechanism on Suspension Arm																															
Rotary Motion of Carrier																															
INITIALS																															

• **Care instructions:**

- Keep accessories away from dust when not in use, e.g. protect them from dust cover.
- Remove dust with a pneumatic rubber bulb and soft brush.
- Use special optics cleaning cloths and pure alcohol for cleaning lenses and eyepieces.
- Protect your colposcope from moisture, fumes, acids and cosmetic materials. Do not store chemicals close to the instrument.
- Protect it from improper handling. Never install other devices sockets or unscrew optical system and mechanical parts unless explicitly instructed to do so in this manual.
- Protect the microscope from oil and grease. Never oil or grease the guide surfaces or mechanical parts.
- Remove coarse contamination using a damp disposable cloth.
- Use disinfectants based on the following ingredients: aldehydes, alcohols, quaternary ammonium compounds.

- o Camera: Clean optical components using a lint-free cloth. Soak the cloth using a little methanol or glass cleaner. Do not use ethanol and spirit.
- o Do not clean products and optical components in a cleaning/disinfecting device or ultra sound bath.
- o LABOMED MaxLite coatings are fungal resistant. If you clean as described above, the coatings will not be damaged.

- **Tropical environment/fungus:**

LABOMED employs certain safety precaution in its manufacturing techniques and materials. Other preventive measures include:

- o Keep optical part clean.
- o Use and store them in a clean environment only.
- o Store under UV light when not in use.
- o Use in continuously climate-controlled rooms only.
- o Keep moisture away using silica gel and cover with a plastic cover.

- **Occupational safety and health protection:**

Observe work safety and health protection of persons responsible for processing contaminated products.

Current regulations of hospital hygiene and prevention of infection must be observed in the preparation, cleaning and disinfection of the products.

Instructions

- **Workplace:**

Remove surface contamination with a paper towel.

- **Reprocessing:**

Recommended: reprocess a product immediately after use or as & when required as per below cleaning instructions.

- **Cleaning& Servicing:**

Needed: water, detergent, spirits, microfiber cloth

- o Take a Linen or any soft cloth. Moist it slightly with running tap water (<40° C), using a little detergent and clean the metallic and plastic parts.
- o Clean all optical components with spirits or alcohol.
- o Dry optical components using a microfiber cloth; dry the rest of the product using a paper towel.
- o For servicing as and when required, inform LABOMED after – sales service department.

- **Autoclaving:**

The rubber caps, sleeves and grips supplied by labomed are recommend for the following program for autoclaving:

Temperature:	134° C
Time:	10 minute
Instrument:	Standard, Autoclave

Ambient Requirement

For operation	Temperature Rel. humidity (without condensation) Air pressure	+10°C.....+40° C 30%.....90% 700hPa.....1,060hPa
For transportation and storage	Temperature Rel. humidity (without condensation) Air pressure	-40°C.....+70°C 10%.....100% 500hPa.....1,060hPa

The unit meets the essential requirements stipulated in Annex I to the 93/42/EEC directive governing medical devices. The unit is marked with: **CE** and is compliance to IEC 60601-1:2007(3rd edition)

18 TROUBLESHOOTING TABLE

This instrument is a high grade technological product and not required any special periodical maintenance if handed carefully. To ensure optimum performance and safe working order of the instruments, its safety must be checked once every 12months. We recommended having this check performance by our service representative as part of regular maintenance work. If a failure occurs which you cannot correct using the trouble-shooting table, attach a sign to the instrument stating out of order and contact our service representative for servicing part or circuit diagram etc.

Problem	Possible Cause	Remedy
No Illumination at all	Power cable not plugged	Plug in power cable.
	Power switch not pressed	Press power switch
	Defective instruments fuse	Change instrument fuse
	Defective power cable	Change power cable
	Line power failure	Contact in-house Technician
	Failure of suspension system electronics	Contact service dept.
	Light guide not properly inserted in arm or microscope.	Insert light guide properly to get maximum illumination.
Insufficient Illumination	Brightness level set too low	Adjust brightness using the brightness control knob.
	Light guide not properly inserted in arm or microscope.	Insert light guide properly to get maximum illumination
	Defective light guide (illumination not uniform)	Change light guide.
Surgical field illumination inoperative or blinks	Light guide not properly inserted in microscope arm	Insert light guide as far as it will go
	Failure of electronics	Illumination surgical field using an OR illuminator. Contact service dept.
	Switch off via microswitch on suspension system	Move suspension arm of suspension system into working position

Problem	Possible Cause	Remedy
	Thermal cut-off in lamp housing is contaminated.	Clean thermal cut-off with a dry brush; blow it clean, if necessary
	Defective fan. Failure of system electronics.	Contact service dept. Illuminate surgical field using an Or illuminator. Contact service dept.
Up & Down motion of screw on suspension system too stiff	Friction adjustment screw on suspension system tightened too firmly.	Loosen friction adjustment screw on suspension system as require
Microscope Unstable	Brakes on wheels not	Use Brakes. used.
No image visible in field of view.	Magnichanger is not indexed properly.	Index magnichanger properly.

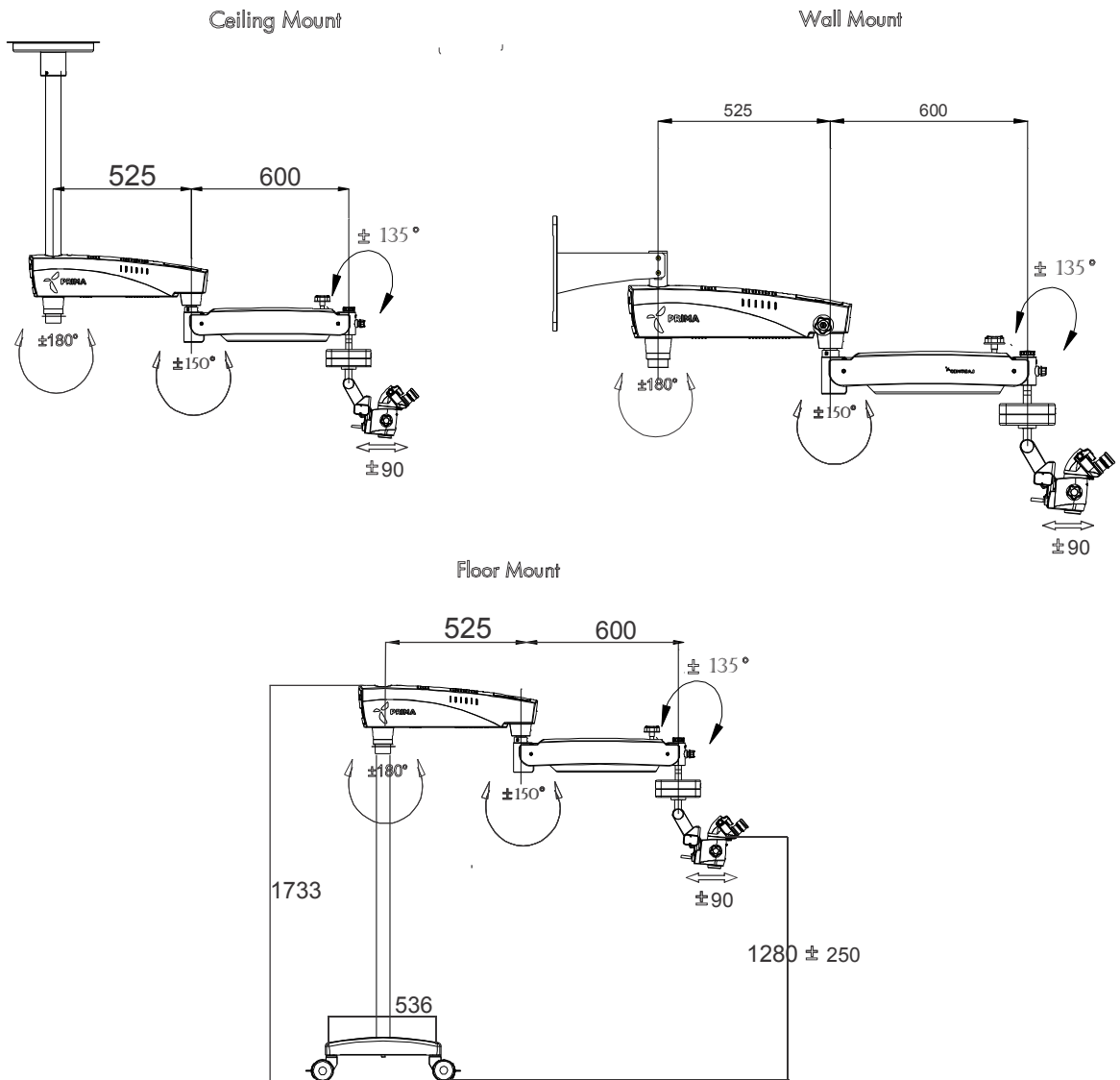
19 DISPOSAL

Disposal must comply with locally applicable laws & regulations.

Technical Data (Specifications)

Binocular tubes	45° inclined head, IPD 55-75mm
Eyepieces	WF 10x/16mm with eye guards; optional WF 12.5x/16mm.
Apochromatic magnichanger	0.4x, 0.6x, 1.0x, 1.6x & 2.5x
Objective	f=200, motorized fine focus, optional: f=175mm, motorized fine focus
Light source	50W LED
Built-in filters	Green & Blue
Vertical movement of arm	550mm
Microscope carriers	XY coupling and focus motorized control or basic ophthalmic carrier
Accessories	Assistant Binocular attachment, Double Beam splitter; 0-210° inclinable ergo tube
Type:	Floor stand
Base (Dimensions):	600mm width 620mm length
Stand Height:	1733 mm
Weight of complete microscope:	90 Kg. Approx.
Elevation Stroke:	500mm
Stand Height in Horizontal Position:	1100mm

Dimensions





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Our policy is one of continuous development. Labo America, Inc., reserves the right to change design and specifications without prior notice.

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