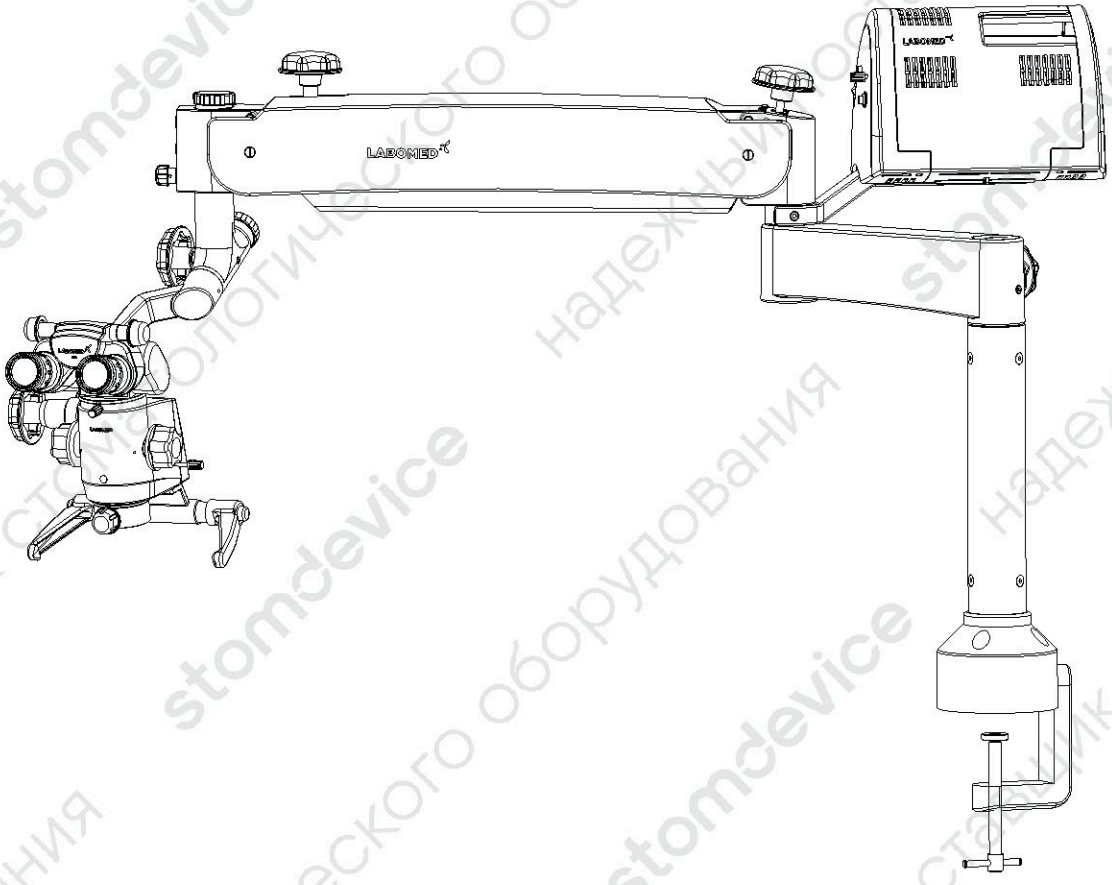
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LABOMED
ideas for vision

PRIMA DNT Trainer
Operating Surgical 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: 6167500-795
Issue 1.0
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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.
- The instrument is not used in accordance with this user manual.

A WARNING is an instruction that draws attention to the 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 OUTLINES 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 PERSONAL 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 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.

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WARNINGS & CAUTIONS (CONTINUED)



A CAUTION is an instruction that draws attention to the risk of damage to the product.

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

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

CAUTION: MEDICAL ELECTRONIC EQUIPMENT NEEDS SPECIAL PRECAUTIONS WITH RESPECT TO ELECTROMAGNETIC CHARGE (EMC) AND NEEDS TO BE INSTALLED AND SERVICED 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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1 INTRODUCTION

The LABOMED Prima DNT Trainer is designed to be used during teaching program in restorative dentistry, which is adaptable for different surgical needs 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 a 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.

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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 ensures 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 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.

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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 nay of the connectors and 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 up-gradation 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 Instruction 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 the 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 the other cable connections.

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

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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 DNT Trainer surgical microscope must be used for related procedure.

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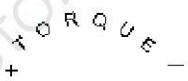
4 WARNING LABELS AND NOTES

Caution:
Observe all warning 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
- 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.



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



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

CE

Compliance to Medical Device Directive 93/42/EEC



Accompanying Document must be consulted

REF

Catalog Number



Protective Earth



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 Europeene”) certifies that a product has met Europeon Union health, safety, and environment requirements, which ensure consumer safety.



Year of Manufacturer Used on PRODUCT DATA



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

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5 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. Table Mount

2. Column

3. Swivel arm and Suspension arm assembly with fibre optic cable.

4. eVALUX Illumination Box.

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

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6 DESCRIPTION OF PARTS

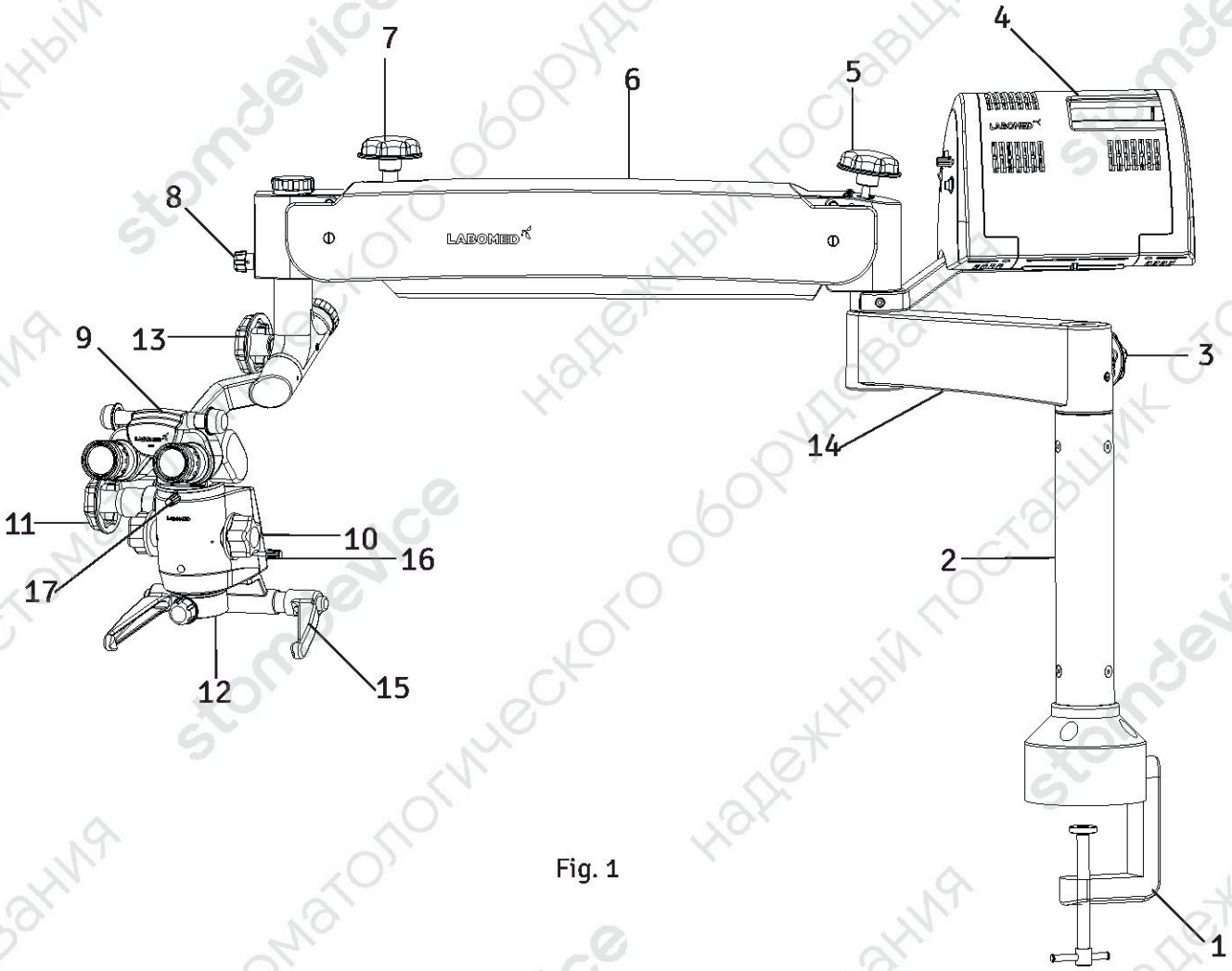
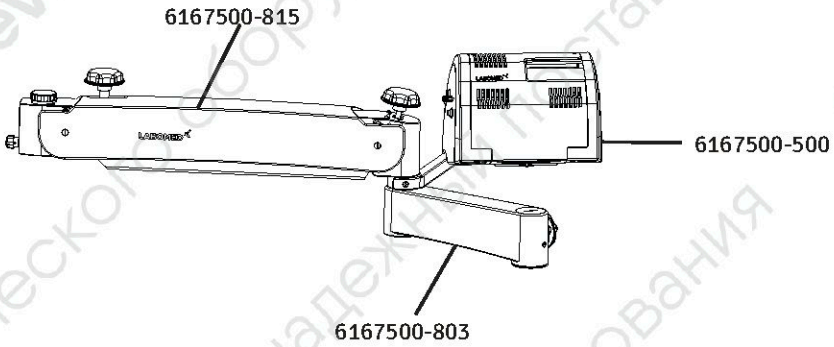


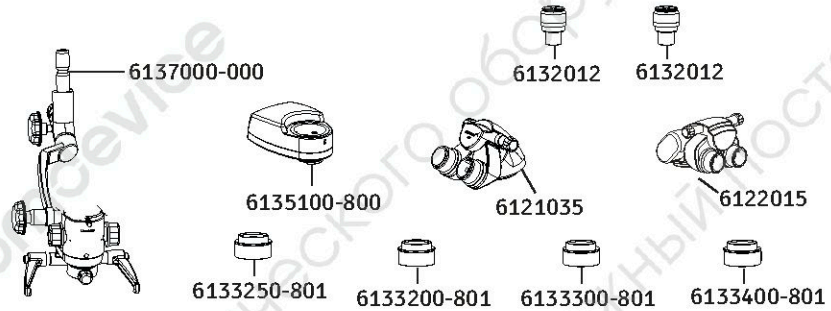
Fig. 1

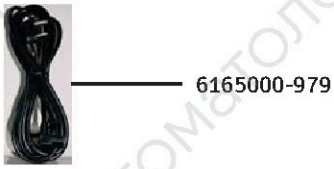
1. Table Clamp
2. Column
3. Swivel Arm locking knob
4. eVALUX Illumination Box
5. Tension Adjustment Knob
6. Suspension Arm
7. Suspension arm hydraulic movement lock
8. Illumination Control Knob
9. Binocular head with eyepieces
10. Magnichanger Knob
11. Magnichanger Locking Knob
12. Common Main Objective
13. Carrier Locking Knob
14. Swivel Arm
15. Handles
16. Filter Knob
17. Binocular head locking knob

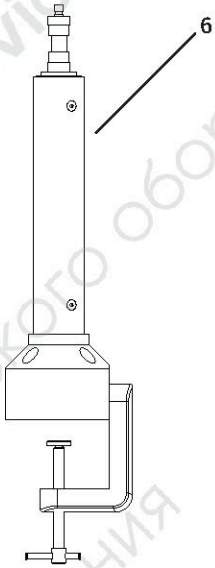
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7 SYSTEM DIAGRAM









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DESCRIPTION OF PART NO.

PART NO.	DESCRIPTION
1. 6167500-803	Swivel arm
2. 6167500-815	Suspension Arm Assembly
3. 6167500-500	eVALUX Illumination Box
4. 6137000-000	Microscope Carrier & Magnichanger Assembly
5. 6132012	12.5x Eyepiece
6. 6132010	10x Eyepiece
7. 6121035	45° inclined Binocular Head
8. 6122015	210° Straight binocular tube
9. 6133250-801	250mm Objective
10. 6133200-801	200 mm Objective
11. 6133300-801	300mm Objective
12. 6133400-801	400mm Objective
13. 6137300	Table Mount
14. 6135100-800	iVU S5 Digital Camera Module
15. 6165000-979	Indian power cord
16. 6165000-974	Shuko Power cord
17. 6165000-973	US Power cord
18. 6162086-972	Australian Power cord

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8 INSTALLATION

8.1 Engage the column on the table top by tighten the clamping screw from the bottom as shown as (A) in Fig. 2.

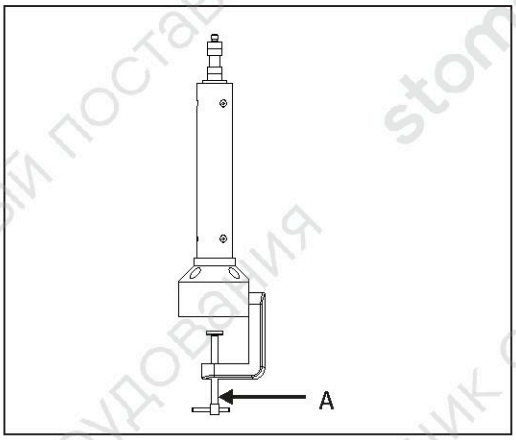


Fig. 2

8.2 Retrieve the swivel arm and suspension arm assembly from the packing box.

Ensure loosening of swivel arm lock knob(A). Install the swivel arm assembly on the upright column (1) figure 3.

Tighten the screw (2) as shown in fig. 3 for proper securing the swivel arm with suspension arm.

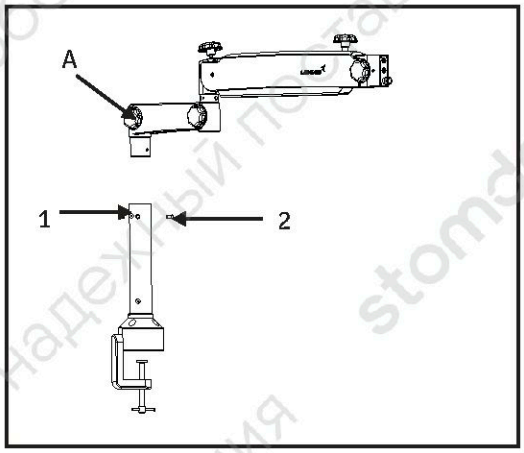


Fig. 3

8.3 Retrieve the eVALUX illumination box with small column assembly from the packing box.

Fix it in between the swivel and suspension arm assembly as shown in Fig. 4 and secure it by tighten the screws provided.

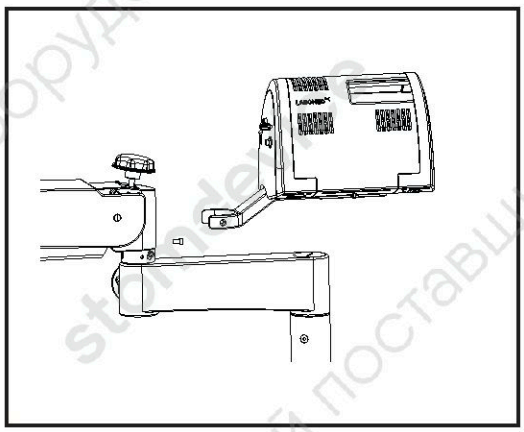


Fig. 4

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8.4 Retrieve the carrier assembly 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. Safely screw tagged within the arm.

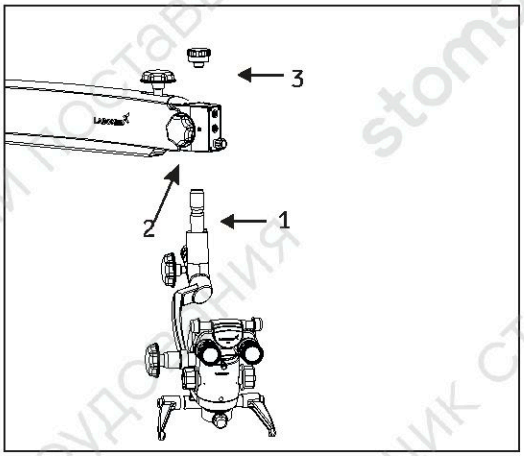


Fig. 5

8.5 Mounting the light guide

- Switch off the illumination system
- The light guide comes pre-routed through eVALUX illumination box (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.

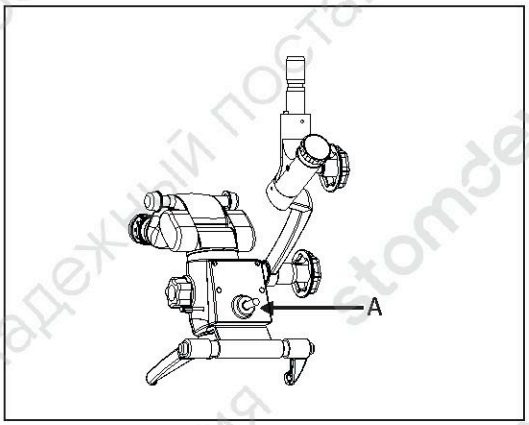


Fig. 6

8.6 Install the binocular head and eyepieces on the magnichanger. Secure the binocular head with head locking screw shown as (A) in figure 6a.

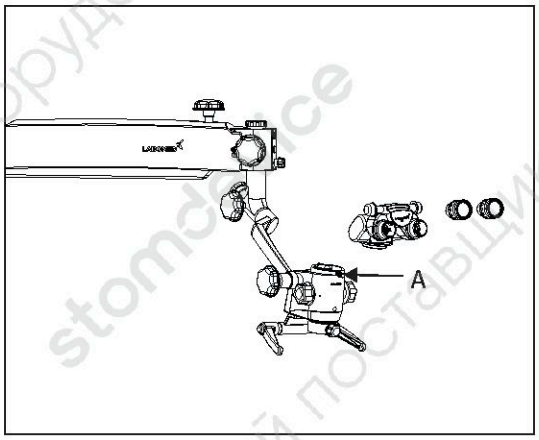


Fig. 6 a

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9 ELECTRICAL CONNECTIONS

Connect the power cable to the AC inlet socket (2) provided on the back of the illumination box as shown as(1) in the fig 7.

Switch on the power from on/off switch provided in the front of illumination box.

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. 7.

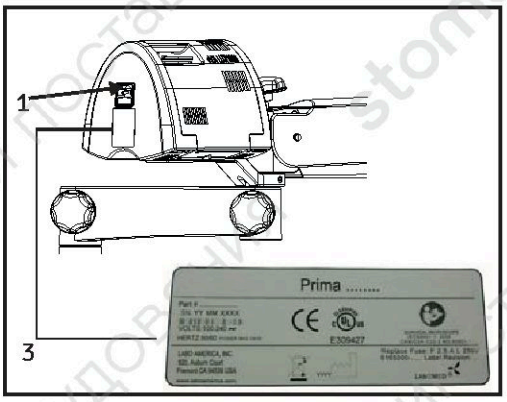


Fig. 7

10 CONTROLS

10.1 ON/OFF switch

It is located in the front of the illumination box as shown as (A) in fig. 8a. 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.

10.2 Intensity control knob

It is located in front of the suspension arm shown as (A) in Fig. 8. Brightness of field of view can be adjusted as per user comfort using intensity control knob.

10.3 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. 8 .

10.4 Camera & Potentiometer output in center, shown as D in fig. 8

10.5 Camera output shown as E in fig. 8

10.6 Camera potentiometer inlet, shown as G in fig. 8a.

10.7 Yellow filter to swing in and swing out as shown as F in fig. 8a

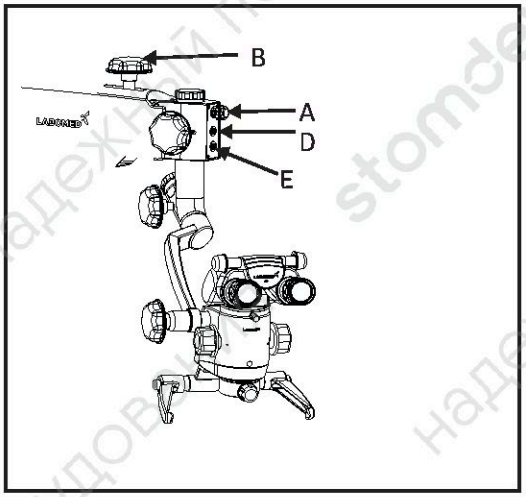


Fig. 8

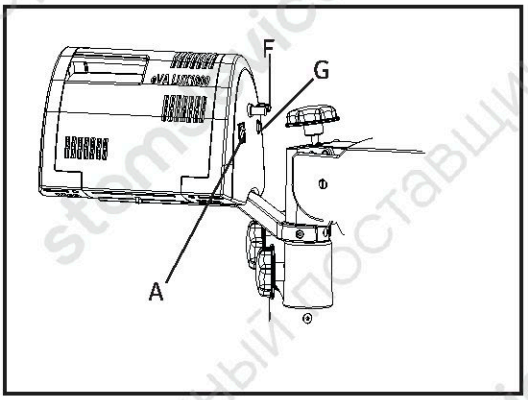


Fig. 8a

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11 INSTRUCTIONS FOR USING THE MICROSCOPE

Setting up of Microscope:

1. Clamp the table mount on the table properly.

2. Although tension on microscope is factory preset as per the ordered configuration. Still user can adjust up and down force by tuning the knob (B) clockwise or anticlockwise.

3. Lock the Up & Down movement of suspension arm using locking knob(C) in fig. 10 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. 9. Rotate it clockwise or anti clock wise to achieve desired illumination level Functional setup keep it as minimum.

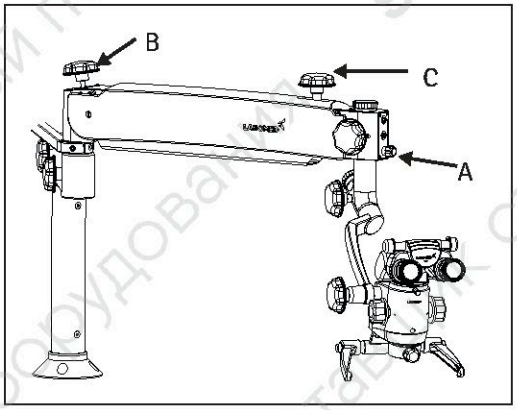


Fig. 9

Setting up of magnification (Ref. Fig. 10)

1. Adjust to highest magnification with one of the rotating knobs (10a) provided at magnification changer.

2. Fine focusing is done through knob (10b) provided on objective as shown in fig. 10

3. Absolute centering of observation area in field of view can be done by manual handle (10c).

4. Make sure that the magnification changer is engaged in the index point at the click stop position.

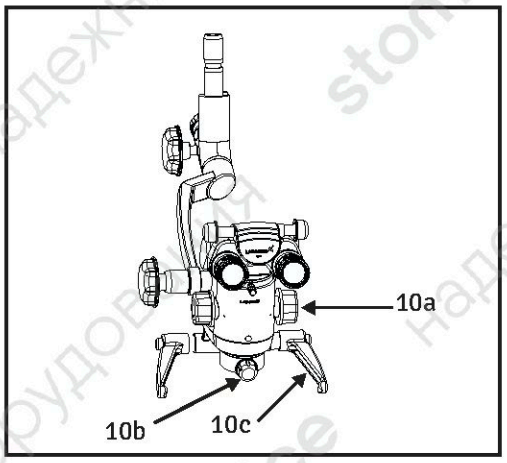


Fig. 10

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11 INSTRUCTIONS FOR USING THE MICROSCOPE

Intended use:

The PRIMA DNT Trainer surgical microscope has been designed for teaching procedures in the field of dentistry, i.e. the microscope meets the special requirements of this discipline.

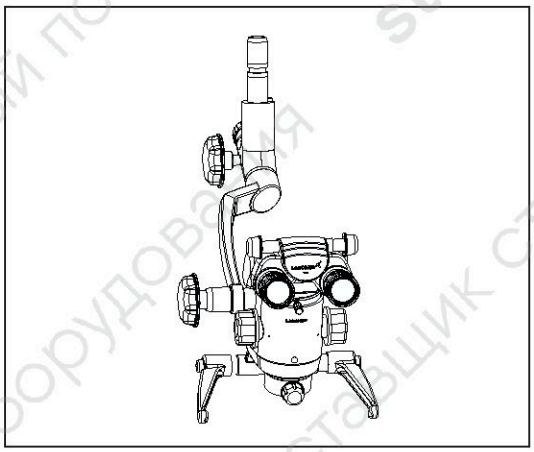


Fig. 11

Description of the modules

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 fine focusing knob and focal lengths of 250 mm to 400 mm are available for different working distances.

The ergonomic 210° tiltable binocular tube is provided for the main surgery.

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

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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.

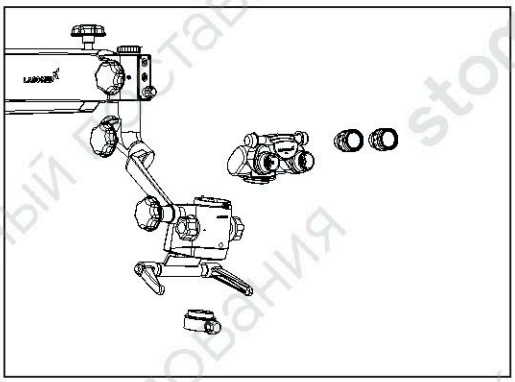


Fig. 12

13 REPLACING THE ILLUMINATION SOURCE

Loosen the screws of eVALUX illumination box as shown in fig.13. Detach the fibre optic cable and replace the illumination assembly A with new assembly. Secure back the illumination box with screws.

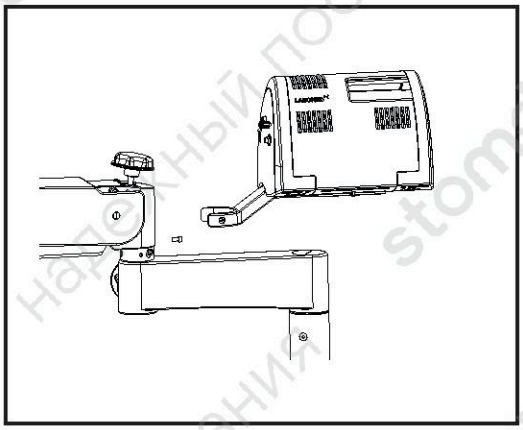


Fig. 13

14 FUSE REPLACEMENT

The fuse is located with the AC inlet, provided on the back side of illumination box as shown in fig. 14. 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 provided adjacent to AC inlet as shown in fig. 14

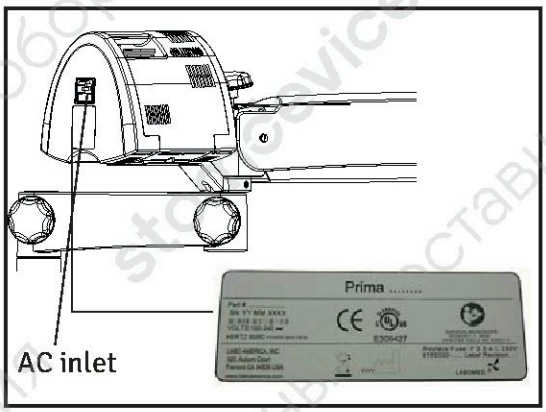


Fig. 14

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15 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 knob (B) provided on suspension arm by moving it clock wise or anticlockwise.

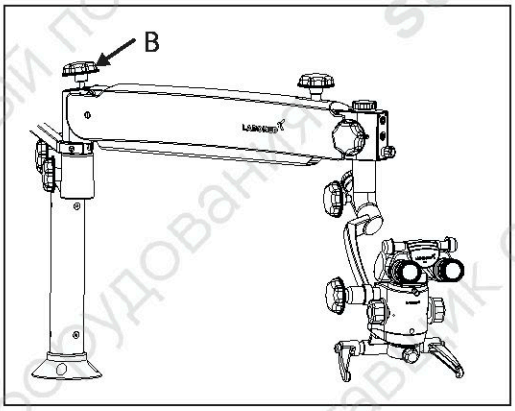


Fig. 15

16 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, 13.5Amp

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17 CLEANING AND SERVICING

17.1 CLEANING OF OPTICAL SURFACES:

The Max lite multi-layer coating of the optical components (e.g. eyepieces objective lenses) ensured optimum images quality.
Image quality is impaired by even slight contamination. To protect the internal optics from dust, the system should never be left without the objective lens, binocular tube and eyepieces. After use, cover the system to protect it from dust, Always store optical components and accessories which are not being used in dust-free cases.

Clean the external surfaces of optical components as required.

Never spray fumigates directly on the instruments or optical surfaces.

17.2 CAUTION:

Do not use any chemical detergents or aggressive substances. These may damage the optical surfaces.

- Remove coarse dirt (splashes or blood etc.) using distilled water to which a dash of household dish-washing liquid has been added. Wipe the surface only with a damp,under no circumstances with a wet cloth. Any remaining marks can be easily removed using the following aides.
- For through cleaning of optical surfaces, use the optics cleaning set or damp optics cleaning wipes (available from specialized dealers).
- Remove minor contamination such as dust, streaks, etc. using a clean microfiber cleaning cloth (available from specialized dealer).

17.3 CLEANING MECHANICAL SURFACES:

All mechanical surface of the equipment can be cleaned by wiping them with a damp cloth. Do not use any aggressive or abrasive detergents.

Wipe off any residue with a mixture of 50% ethyl alcohol and 50% distilled water plus a dash of household dish-washing liquid.

17.4 STERILIZATION

The asepsis sets available from LABOMED contain rubber caps, sleeves and grips which can be Sterilized in autoclaves. We recommend the following program for sterilization:

Sterilization temperature:	134° C
Sterilizing time:	10 minute
Instrument :	Standard, Autoclove

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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).

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18 TROUBLESHOOTING GUIDE

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	Power cable not plugged in	Plug in power cable
	Power switch in OFF position	Press the power switch to ON position
	Defective instrument fuse	Change the fuse
	Defective power cable	Change the power cable
	Line power failure	Contact in-house technician
	Failure of suspension system Electronics	Contact the service department
	Light guide not properly inserted in arm of microscope	Insert the light guide properly to get maximum illumination
Insufficient illumination	Brightness level set too low	Adjust brightness control knob
	Light guide not properly inserted in arm of microscope	Insert the light guide properly to get maximum illumination
	Defective light guide (illumination not uniform)	Change the light guide
Inoperative surgical field illumination	Inoperative surgical field illumination	Insert the light guide as far as it will go
	Failure of electronics	Illuminate the surgical field using an alternate illuminator,and contact the service department
	Switch off via limit switch on suspension arm system	Move the suspension system into the working position
	The thermal cut-off in the lamp housing is contaminated	Clean the thermal cut-off with a dry brush or blow it clean, with compressed air
	Defective fan; failure of system electronics	Contact the service department

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Problem	Possible Cause	Remedy
Up and down motion of knob on suspension system is too stiff	The friction adjustment screw on the suspension system is tightened too firmly	Loosen the friction adjustment screw on the suspension system as needed
No image visible infield of view.	Magnichanger is not indexed properly.	Index magnichanger properly.

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19 DISPOSALS

Disposal must comply with locally applicable laws and regulations.

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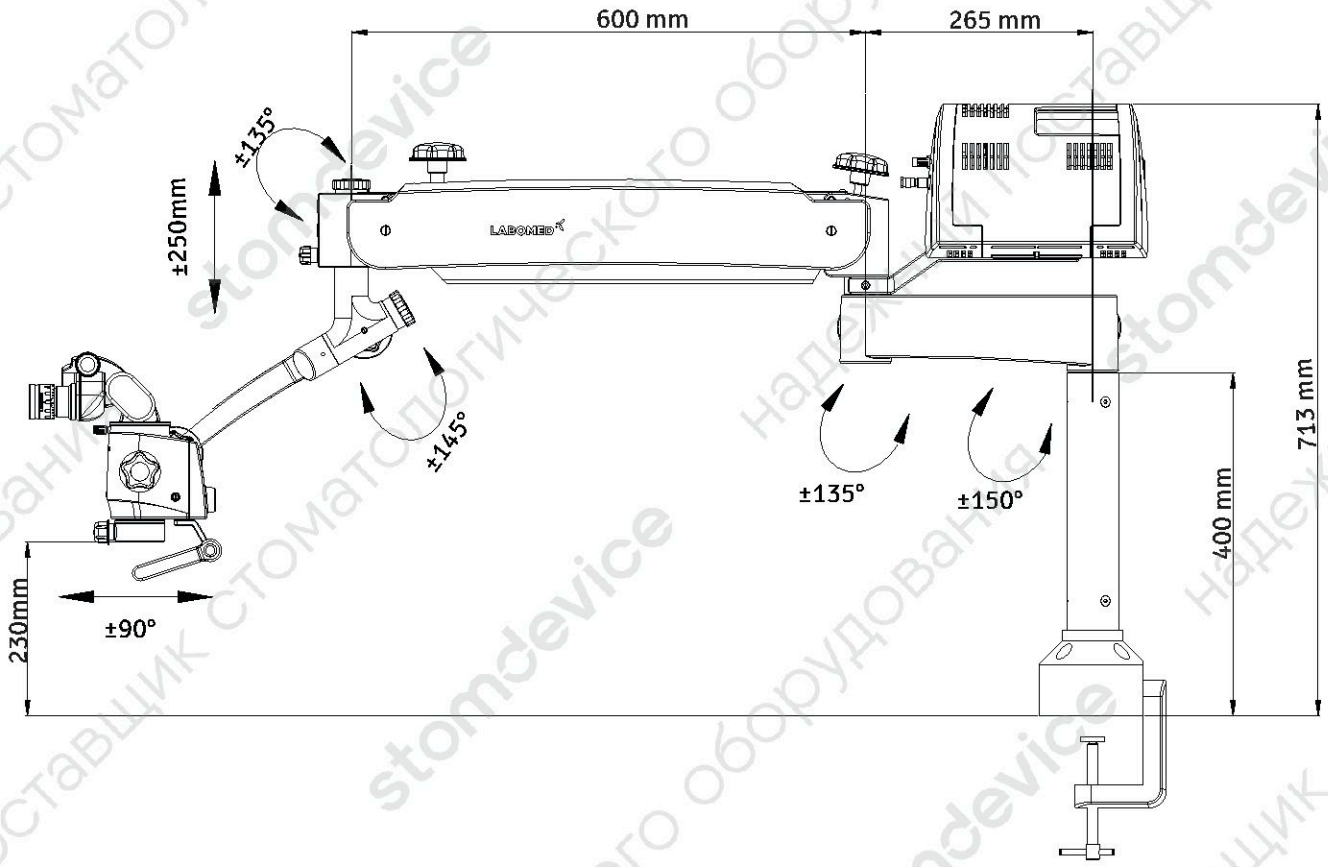
20 SPECIFICATIONS

Binocular Tubes	210° or 45° inclined head
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= 250mm, manual fine focus
Light Source	50W LED
Built-in filters	Green & Yellow
Vertical Movement of Arm	550mm
Microscope Carrier	Straight Carrier
Accessories	iVu S5 Beam splitter integrated digital camera Module;
Type:	Table Mount
Pillar Height:	400mm
Weight of complete microscope:	22 Kg. Approx.
Elevation Stroke:	500mm
Stand Height in Horizontal Position:	713mm

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21 DIMENSIONS

TABLE MOUNT



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Revision History

Rev. No.	Date of Release	DCR #	Change	App. By

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