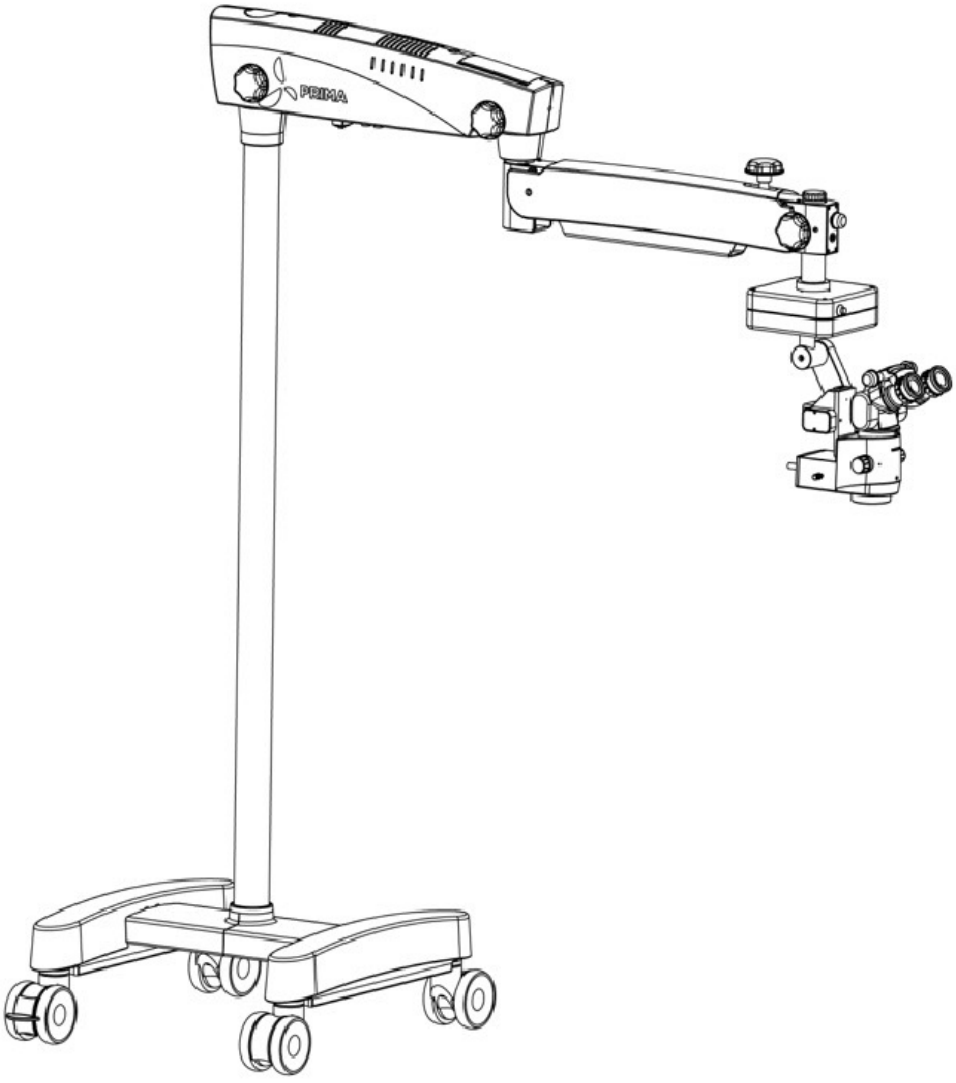
LABOMED®
ideas for vision

PRIMA OPH

User Manual

Ophthalmic Operating Microscope



To ensure correct use of this instrument and to avoid injury during operation, read this manual completely before use.

Part No.: 6135000-795
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INTRODUCTION

The LABOMED Prima OPH is a surgical and diagnostic microscope that adapts to different surgical needs. It provides consistent visualization during all intraoperative phases of ophthalmic surgery by giving a magnified view of the surgical field, without compromising performance.

The microscope provides very high optical image quality, good depth of focus and a wide field of view for precise surgery. Illumination control, the built-in tilt and the adjustable observation head help reduce surgeon fatigue and allow comfortable use over long periods.

Key features of this microscope:

1. The observation head is easily positioned with the suspension arm.

2. An advanced 5-step magnification changer provides the optical magnification for each procedure from five magnification settings.

3. Cold-light illumination from a high-intensity 50 W LED is delivered through a fiber-optic light guide. The brightness can be set to the most suitable level with the intensity control knob, which is located on the suspension arm within easy reach of the surgeon.

4. When the microscope is not in use, the suspension arm can be folded over the main body for compact storage.

5. The rigid H-form base with caster wheels gives the instrument greater stability and mobility.

6. The double iris diaphragm provides greater depth of field, which is particularly valuable for photography.

☞ Report any serious incident involving this device to Labotech Microscopes India Pvt. Ltd. or to your national health authority.

SAFETY INSTRUCTIONS

SAFETY

The instrument described in this manual has been developed and tested in accordance with LABOMED safety standards and with national and international regulations. This ensures a high degree of instrument safety.

Additional safety notes appear in other parts of this user manual. They are marked with a warning triangle containing an exclamation mark, as shown here. Pay special attention to these safety notes.

Safety is ensured only when this instrument is operated correctly. Read this manual carefully before switching the instrument on. Also read the user manuals of the other equipment used with this instrument. Further information is available from our service organization or an authorized representative.

DIRECTIVES AND STANDARDS

The instrument described in this manual complies with the following standards:
- EN
- IEC
- UL
- CSA

DIRECTIVES / REGULATIONS:

. Regulation (EU) 2017/745
. IEC 60601-1, 3rd edition (2005)
. IEC 60601-1-2
. EN 55011:2007

CLASSIFICATION

. For Europe, per MDR 2017/745, the unit is a Class I instrument per Rule 13, Annex VIII.
. For the United States, the FDA classification is Class I.
. Observe all applicable accident prevention regulations.
. IP code: IP 20 (foot switch: IP 24)

WARNINGS AND CAUTIONS

LABOMED is not responsible for the safety and reliability of this instrument when:
- Assembly, disassembly, repair or modification is carried out 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: USE THIS INSTRUMENT IN STRICT ACCORDANCE WITH THE INSTRUCTIONS OUTLINED IN THIS USER MANUAL. THE SAFETY OF THE OPERATOR AND THE PERFORMANCE OF THE INSTRUMENT CANNOT BE GUARANTEED IF IT IS USED IN A MANNER NOT SPECIFIED BY LABOMED.

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

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

WARNING: MAKE SURE THAT THE VOLTAGE APPLIED TO THE UNIT IS THE SAME AS THE VOLTAGE INDICATED ON THE DATA PLATE; OTHERWISE, DAMAGE TO THE UNIT MAY OCCUR.

WARNING: WHERE THE SUPPLY VOLTAGE FLUCTUATES, A CONSTANT-VOLTAGE STABILIZER OR A UPS IS RECOMMENDED FOR SAFE AND EFFICIENT USE OF THE DEVICE.

WARNING: TO AVOID THE RISK OF ELECTRIC SHOCK AND FOR THE SAFETY OF THE INSTRUMENT, THIS UNIT MUST BE PLUGGED INTO AN OUTLET WITH AN EARTH GROUND. DO NOT REMOVE OR DEFEAT THE EARTH GROUND CONNECTION OF THE POWER INPUT CONNECTOR ON THE UNIT'S POWER CORD.

WARNING: THE EQUIPMENT OR SYSTEM SHOULD NOT BE USED ADJACENT TO OR STACKED WITH OTHER EQUIPMENT. 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 WITH OXYGEN OR NITROUS OXIDE.

WARNING: BECAUSE PROLONGED INTENSE LIGHT EXPOSURE CAN DAMAGE THE RETINA, THE USE OF THIS 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.

WARNING: DURING TRANSPORTATION, THE EQUIPMENT MUST BE IN THE FOLDED POSITION SHOWN IN THE SECTION "MOVING POSITION".

WARNINGS AND 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 CONTAINS 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 ELECTRICAL EQUIPMENT NEEDS SPECIAL PRECAUTIONS REGARDING ELECTROMAGNETIC COMPATIBILITY (EMC) AND MUST 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: DO NOT USE THIS INSTRUMENT NEAR HIGH-FREQUENCY EMITTING SURGICAL EQUIPMENT.

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

CAUTION: DO NOT OPERATE THE DEVICE WITHOUT THE SILICONE COVERS ON THE HANDLES AND ALL KNOBS.

SPECIAL INSTRUCTIONS FOR INSTALLATION & USE

SAFE WORKING ORDER

- Do not operate the equipment contained in the delivery package in:
- Areas with a risk of explosion or fire, or where flammable anesthetics or volatile solvents such as alcohol, benzene or similar chemicals are present.
- Do not install, store or use the instrument in damp rooms. It is important to protect the instrument from humidity, wet conditions, water splashes and water spray.
- Do not use the instrument if you notice any electrical arcing, sparks, abnormal noises, smoke or fumes. Unplug it immediately and contact an authorized LABOMED service representative.

⚠ **Make sure that the power outlet is properly grounded.**

⚠ **If voltage fluctuations exceed 10% of the rated voltage, always use a constant-voltage stabilizer with this instrument.**

- Do not force cable connections. If the male and female parts do not connect easily, make sure that they match. If any connector is damaged, have it repaired by our service representative.
- All repairs, customization and upgrades must be carried out by an authorized LABOMED representative; otherwise, the LABOMED product warranty does not apply.
- The instrument must be operated only by trained personnel, for its intended use only, and only after they have understood the operating instructions.
- Use the instrument only with the accessories supplied. If you wish to use other accessories with this equipment, make sure that LABOMED has certified them for safe use with the instrument.
- Keep this user manual accessible at all times.
- Do not pull on the light source cable, the power cord or any other cable connection.

Have the instrument checked once every 12 months to ensure optimum performance.

SPECIAL INSTRUCTIONS FOR INSTALLATION & USE

REQUIREMENTS FOR OPERATION

Installation of the instrument must be carried out only by an authorized LABOMED agent or representative. Make sure that the following requirements for operation continue to be met:

- All safety-relevant mechanical connections (see this user manual) are properly made and all screw connections are tightened.
- All cables and plugs are in good working condition.
- The voltage setting of the instrument matches the rated line voltage on site.
- The power cord in use is the one designed for this instrument.

BEFORE EVERY USE AND AFTER RE-EQUIPPING THE INSTRUMENT

- Make sure that all “Requirements for operation” are met.
- Go through the checklist.
- Reattach or close any covers, panels or caps that have been removed or opened.
- Pay special attention to the warning symbols (triangular warning signs with exclamation marks) and labels on the instrument.

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 affects skin and biological tissue. For your own protection, keep the light level to the absolute minimum required for your procedure.

WARNING!

Use only the correct configuration of the LABOMED Prima surgical microscope for the relevant procedure.

WARNING LABELS AND NOTES



Caution

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



Instrument label plate

The instrument label plate shows the following:

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



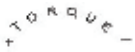
Brightness control

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



Red and green LED

The LED indicator at the front of the swivel arm, shown here, glows GREEN while the instrument is in its working position. It glows RED when the suspension arm is parked in its uppermost position, i.e. when the instrument is not in its working position. To use the instrument again, bring the arm down until the LED turns green. In the parking position, the illumination LED switches off to extend its life, while the fans keep running to keep the unit cool and safe.



Balance setting

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



Ceiling and wall mount

Do not use the mount to support yourself.



Maximum load

When the surgical microscope is mounted on a suspension system, the total weight of the microscope including accessories and coupling must not exceed 7.5 kg. See the user manual of the suspension system for the permissible maximum load.



Consult accompanying documents

REF Catalog number

Compliance with Medical Device Regulation (EU) 2017/745



Protective earth

WARNING LABELS AND NOTES (continued)



This Way Up: indicates the correct upright position of the transport package.



Keep Dry: keep the transport package away from rain.



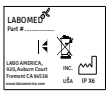
The CE mark (from the French “Conformité Européenne”) certifies that a product meets the European Union health, safety and environmental requirements that ensure consumer safety.



Manufacturer



Fragile: the contents of the transport package are fragile and must be handled with care.



IPX label for the foot control switch



Medical device



Authorized European representative



Serial No. (YY-year, MM-month, XXXX-serial no.)



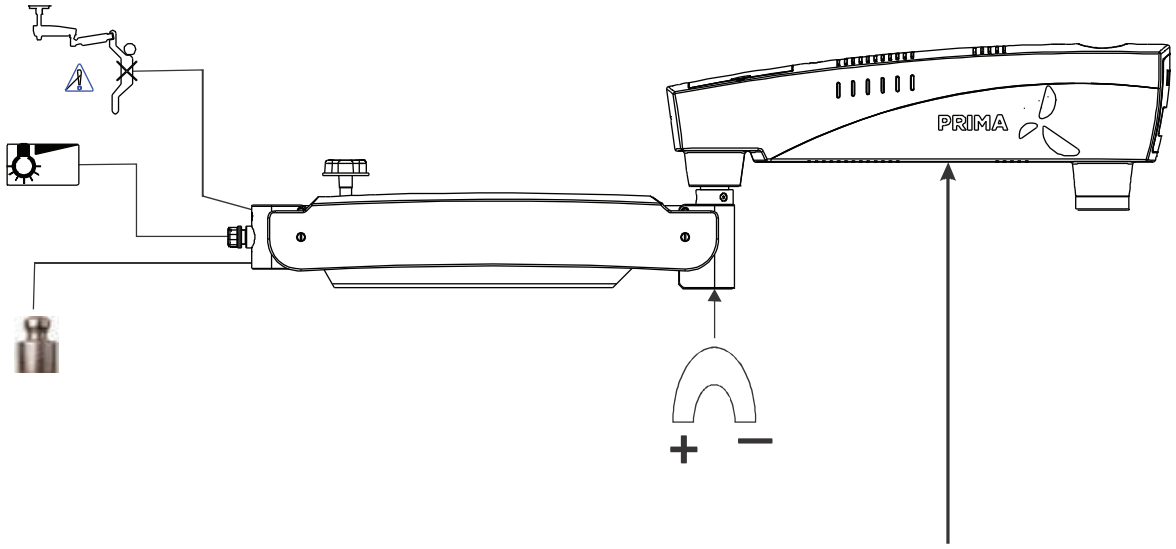
Model No.



Max. safe load 9 kg

IP 20 ingress protection

WARNING LABELS AND NOTES (continued)



PRIMA OPH (SURGICAL MICROSCOPE) LABOMED

REF .....
SN YY MM XXXXX
VOLTS:100-240~
HERTZ 50/60
POWER MAX 60 W

GTIN BAR CODE

"LABO AMERICA, INC.
920 Auburn Court
Fremont, CA 94538.
UNITED STATES OF AMERICA
+15104451257
SALES@LABOAMERICA.COM
WWW.laboamerica.com

Replace Fuse : F 2.5 A L 250 V
6211000-451 Label Revision: G

MD

TOTAL MASS -

MADE IN INDIA

DESCRIPTION OF PARTS

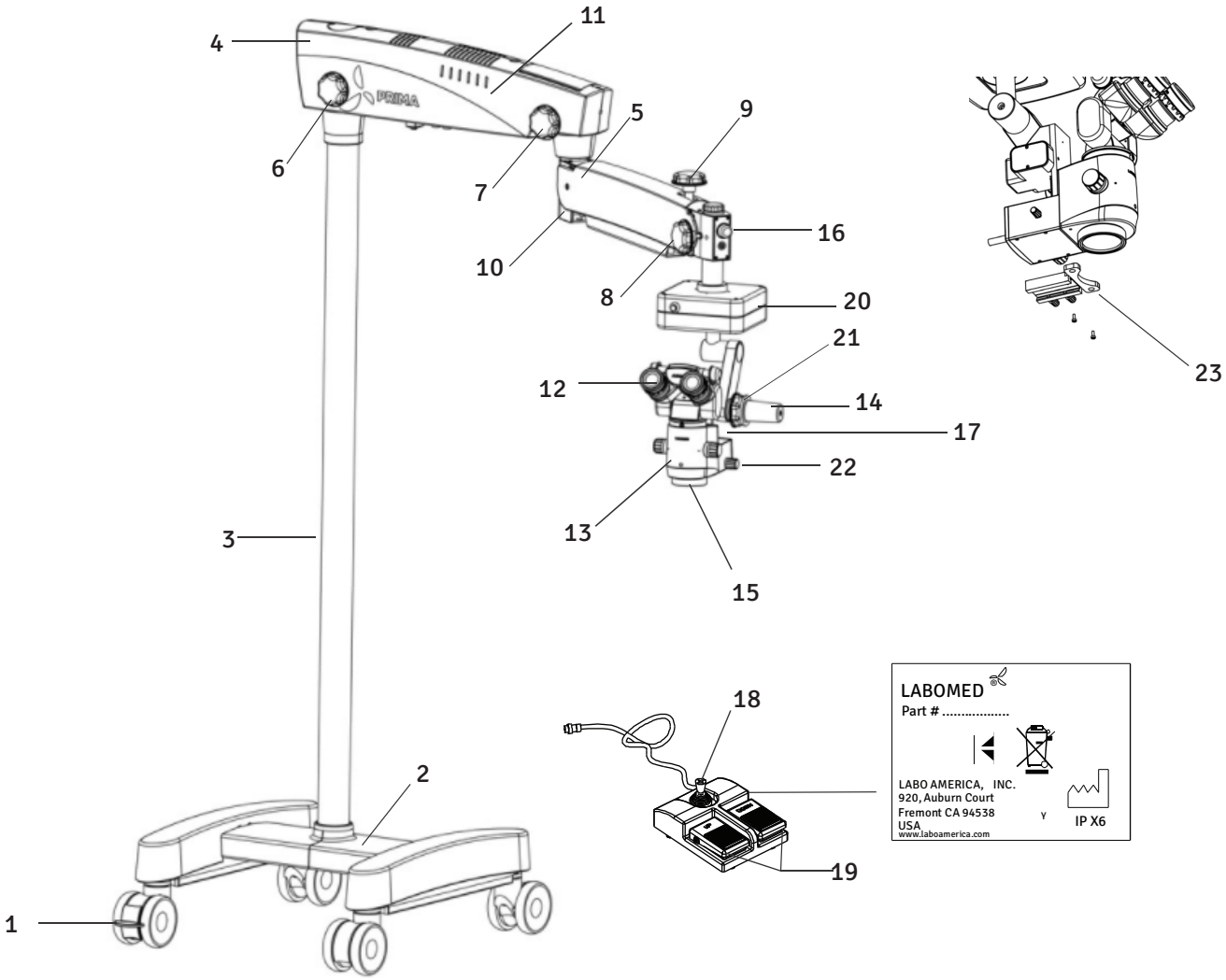
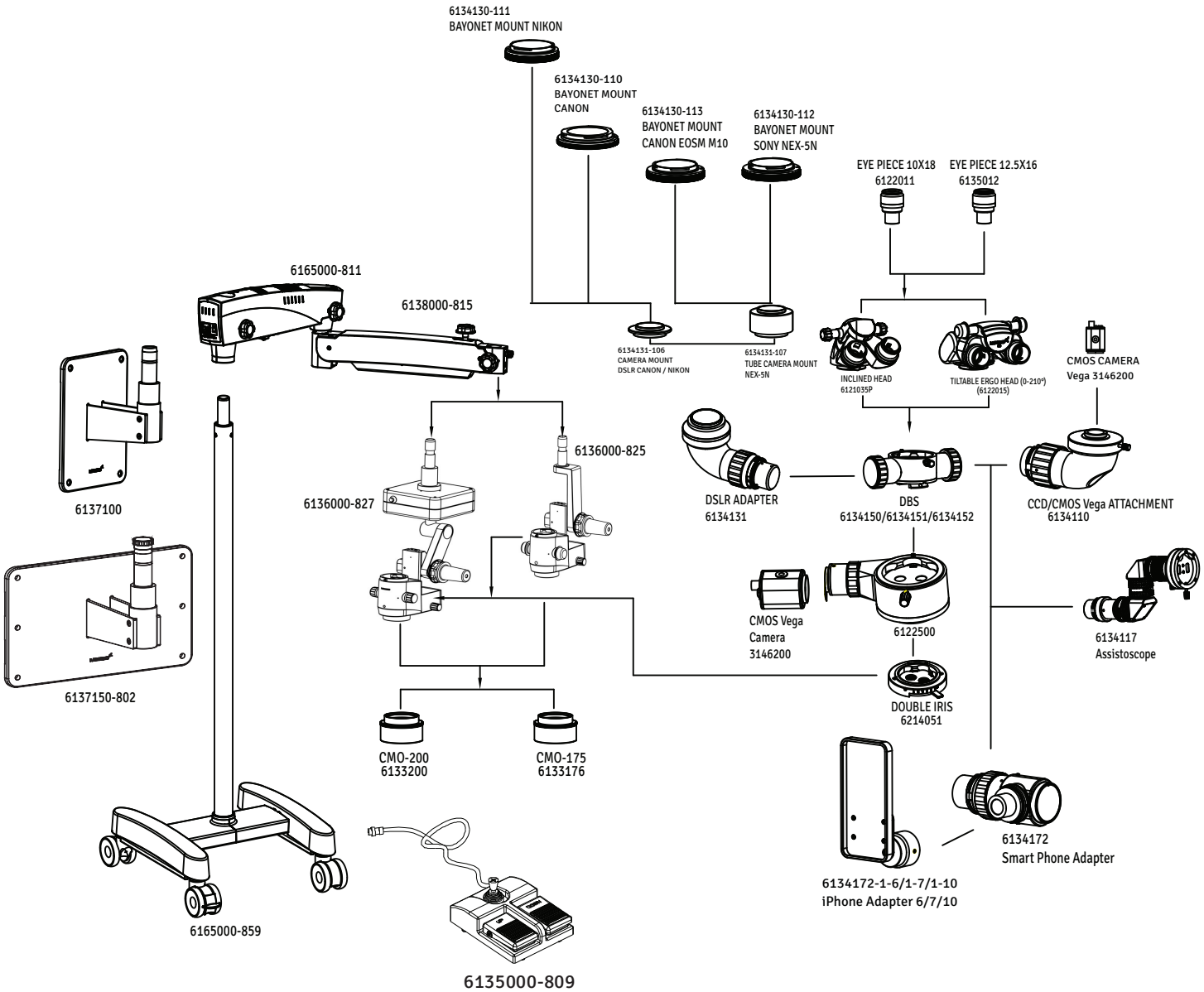


Fig. 1 1.

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. 0–210° binocular head with eyepieces
13. Magnification changer
14. Handle
15. Common main objective
16. Illumination control knob
17. Z-axis
18. Joystick for XY movement
19. Foot pedals for Z-axis
20. XY coupling
21. Tilt control and lock knob
22. Filter knob
23. Fundus viewing attachment adapter (Volk - Merlin)

SYSTEM DIAGRAM



SYSTEM DIAGRAM (continued)

DESCRIPTION OF PARTS

PART NO.	DESCRIPTION
1. 6165000-811	Swivel arm assembly
2. 6138000-815	Suspension arm assembly
3. 6136000-827	XY Coupling
4. 6136000-825	Z Axis Coupling
5. 6135012	12.5x Eyepiece
6. 6120010	10x Eyepiece
7. 6121035P	45° inclined Binocular Head
8. 6122015	210° tiltable binocular tube
9. 6133200	200mm Objective
10. 6133176	175mm Objective
11. 6135000-809	Foot Control for XY control
12. 6137100	Vertical Wall Mount
13. 6137150-802	Horizontal Wall Mount
14. 6165000-859	Floor Mount
15. 6134150	Double Beam Splitter 50-50
16. 6134151	Double Beam Splitter 70-30
17. 6134152	Double Beam Splitter 80-20
18. 6122500	Single beam splitter
19. 6134131	DSLR Adapter
20. 6134131-106	Camera Mount DSLR Canon/Nikon
21. 6134131-107	Tube Mount DSLR Sony
22. 6134130-111	Bayonet Mount Nikon
23. 6134130-110	Bayonet Mount Canon
24. 6134130-113	Bayonet Mount Canon EOSM M10
25. 6134130-112	Bayonet Mount Sony NEX
26. 6134110	CCD/CMOS Attachment
27. 6214051	Double Iris Diaphragm
28. 6134117	Assistoscope
29. 6134712	Smart Phone Adapter Tube
30. 6134172-1-6	iPhone Adapter i6
31. 6134172-1-7	iPhone Adapter i7/i8
32. 6134172-1-10	iPhone Adapter i10
33. 6165000-979	Indian Power Cord
34. 6165000-974	Schuko Power Cord
35. 6165000-973	USA Power Cord
36. 612086-972	Australian Power Cord

UNPACKING

The appliance is delivered in sub-assembled groups, together with one installation kit and one instruction and service manual.

On unpacking, check for the following:

1. Mobile base with brakes on caster wheels, or the mounting system type ordered.

2. Column (floor, ceiling or wall mount), as ordered.

3. Swivel arm and suspension arm assembly with fiber-optic cable.

4. XYZ assembly with magnification changer and objective.

5. Observation head: 0–210° tiltable ergo binocular tube.

6. Pair of eyepieces, as ordered.

7. Power cord.

8. Set of sterilizable caps.

9. Installation kit:
    a) Allen wrench 5.00 mm
    b) Allen wrench 8.00 mm

10. Instruction and operating manual.

DIMENSIONS (CASTER-MOUNTED STAND)

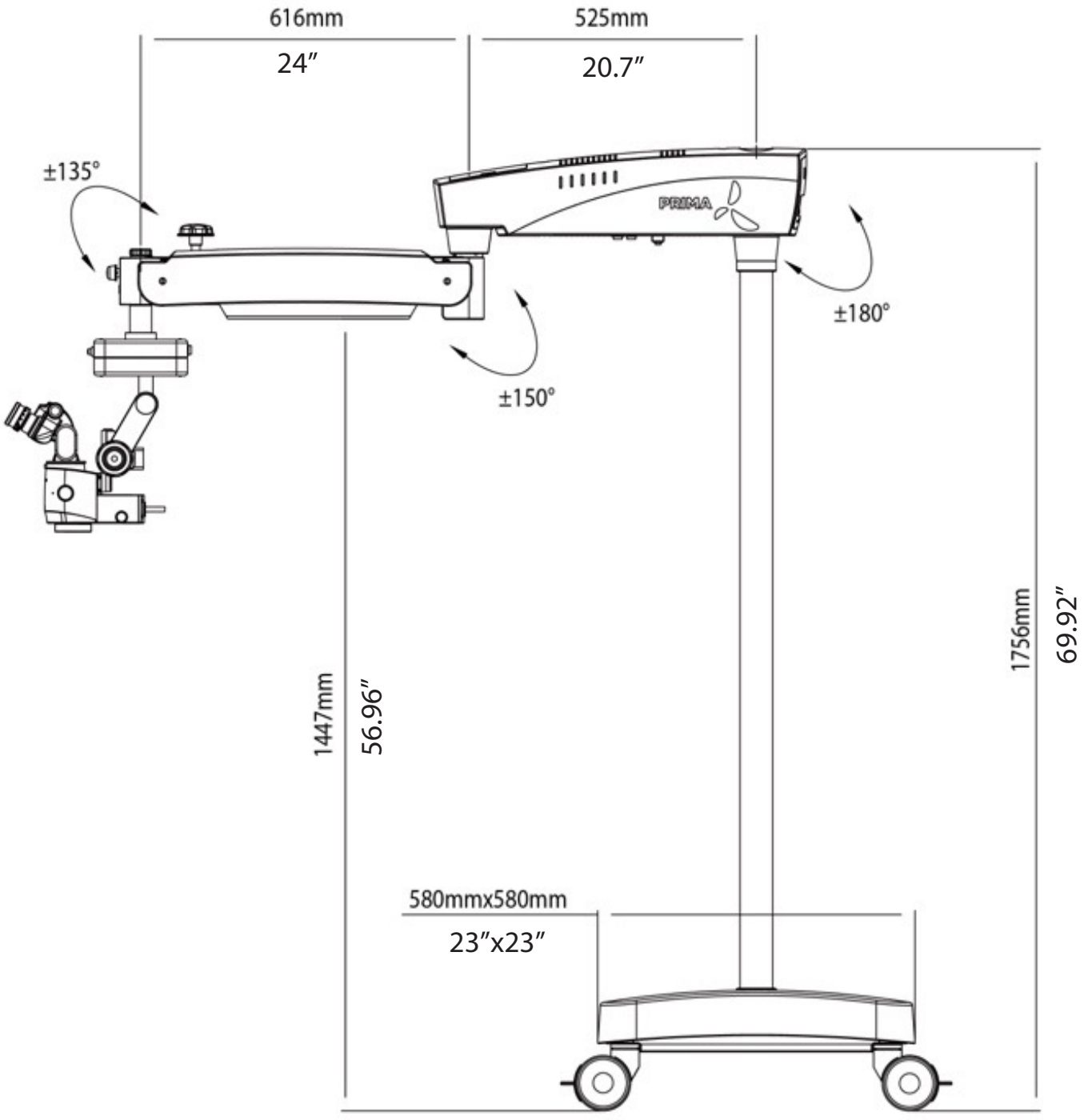


Fig. 1

DIMENSIONS (FLOOR-MOUNTED STAND)

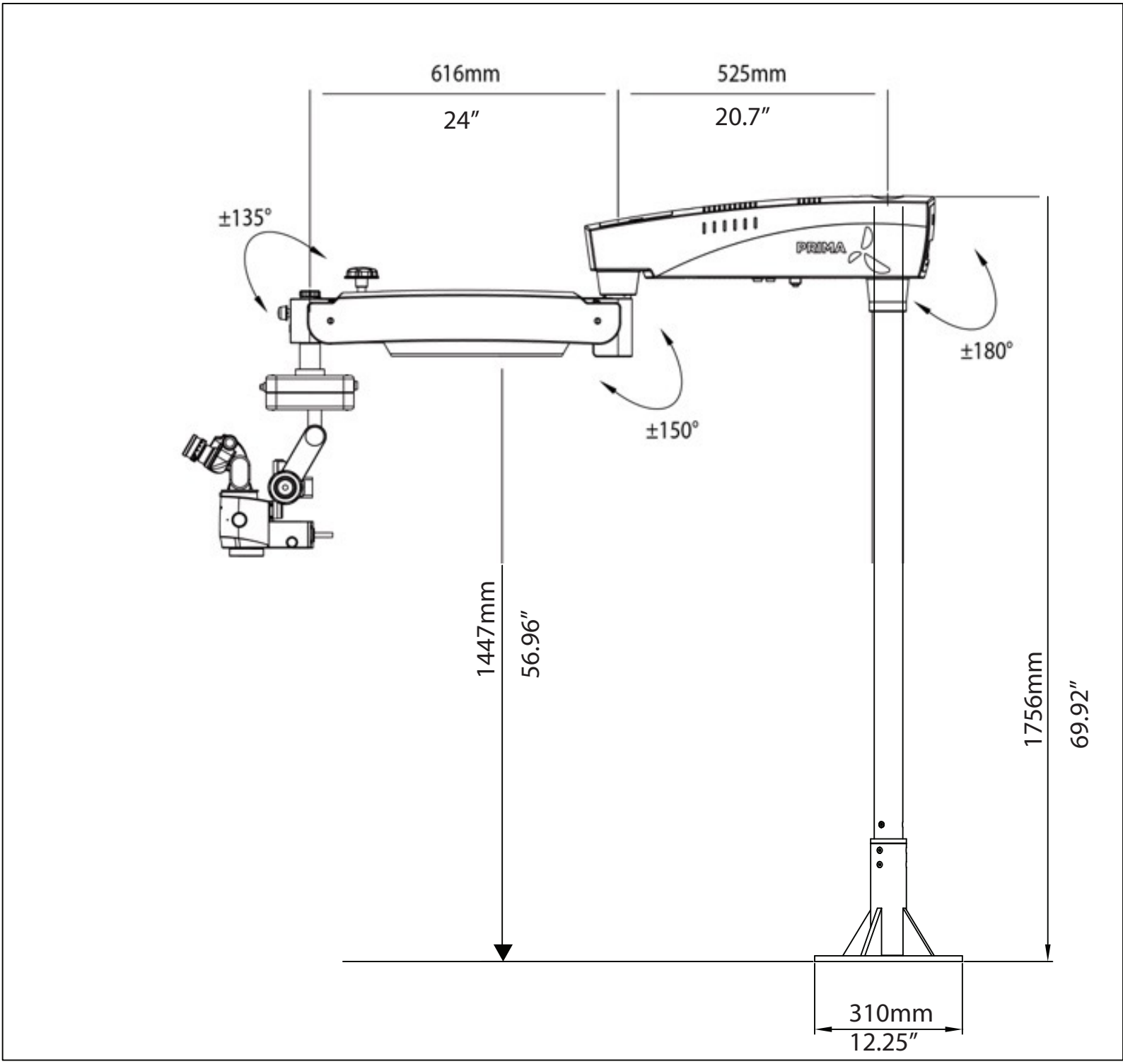


Fig. 2

WALL MOUNT ASSEMBLY (DIMENSIONS)

HORIZONTAL WALL MOUNT WITH STANDARD SUSPENSION ARM

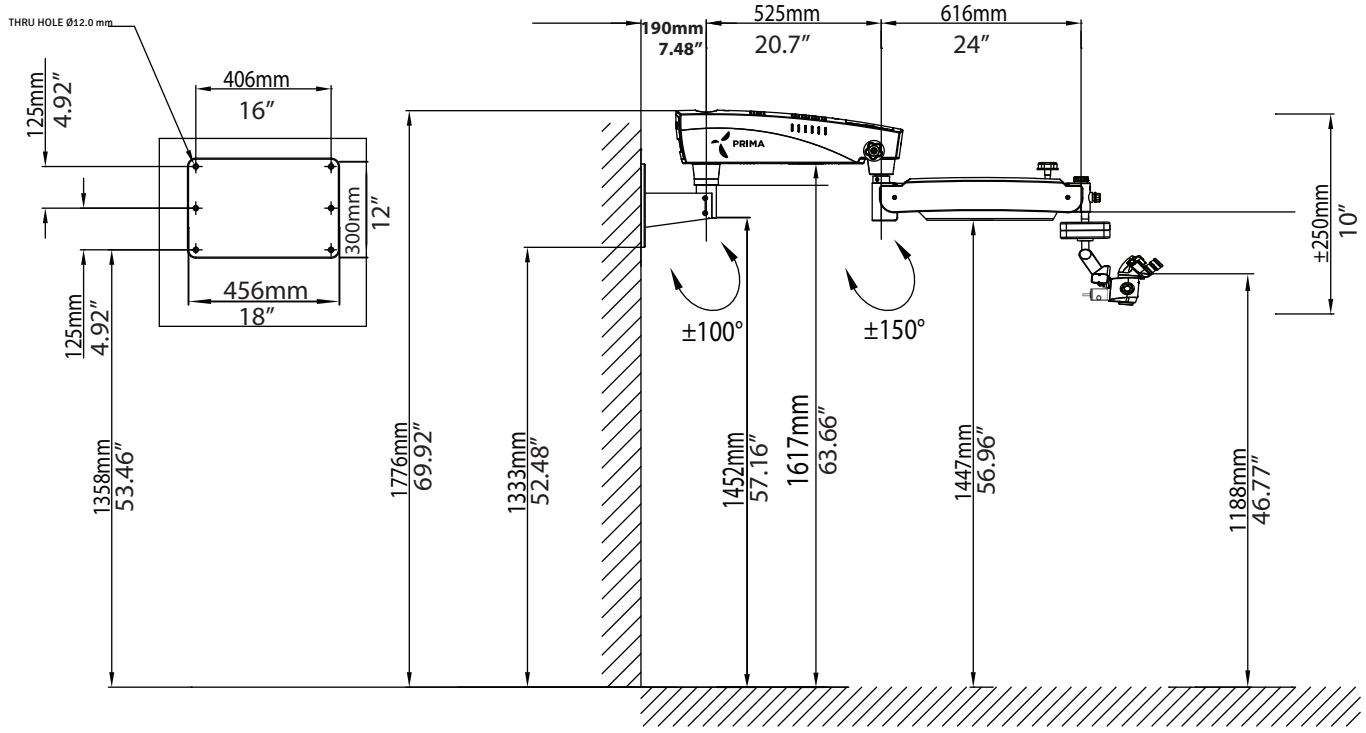


Fig. 3

WALL MOUNT ASSEMBLY (continued)

VERTICAL WALL MOUNT WITH STANDARD SUSPENSION ARM

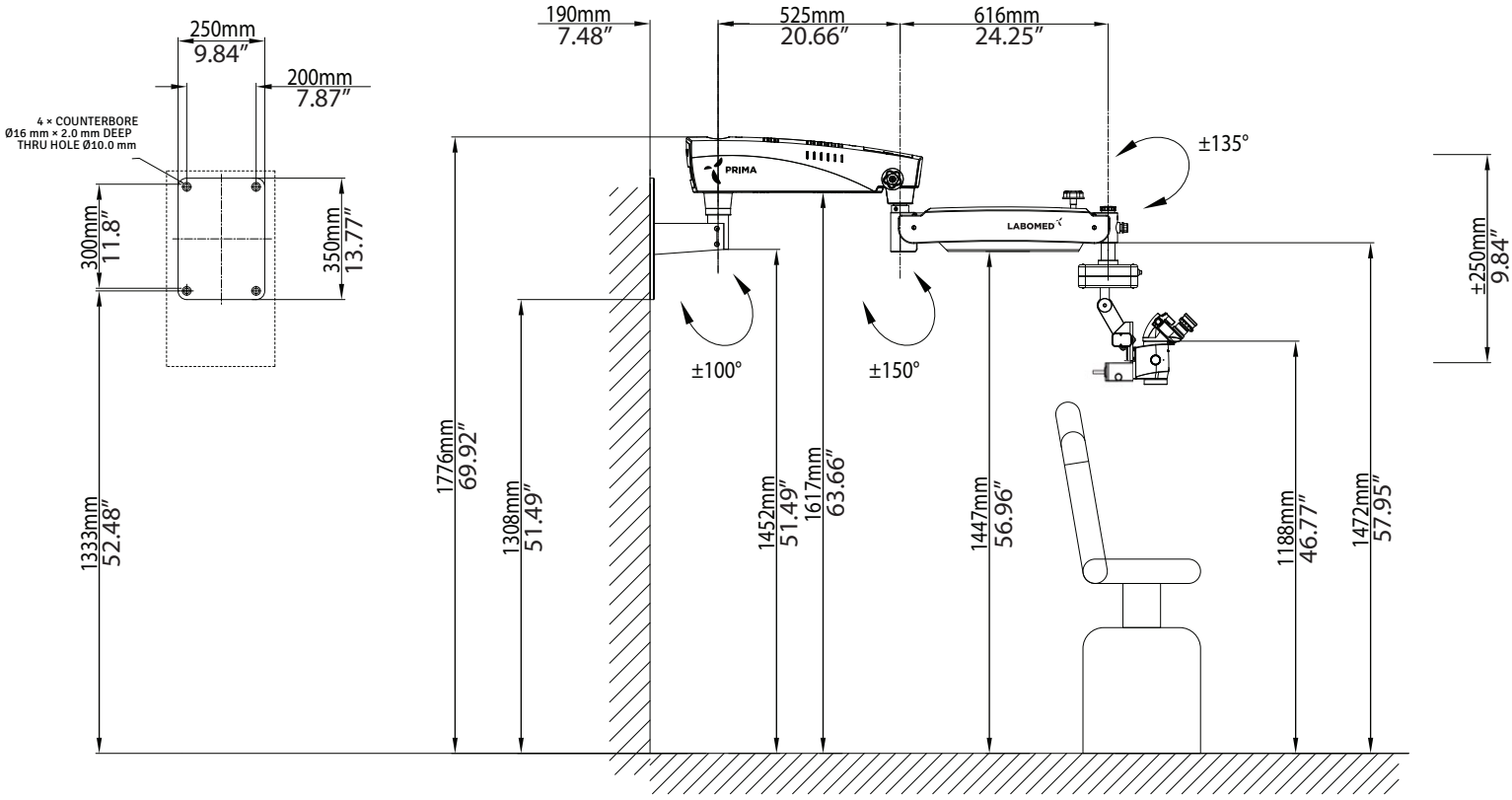


Fig. 3A

WALL MOUNT ASSEMBLY (continued)

VERTICAL WALL MOUNT (LONG BRACKET) WITH STANDARD SUSPENSION ARM

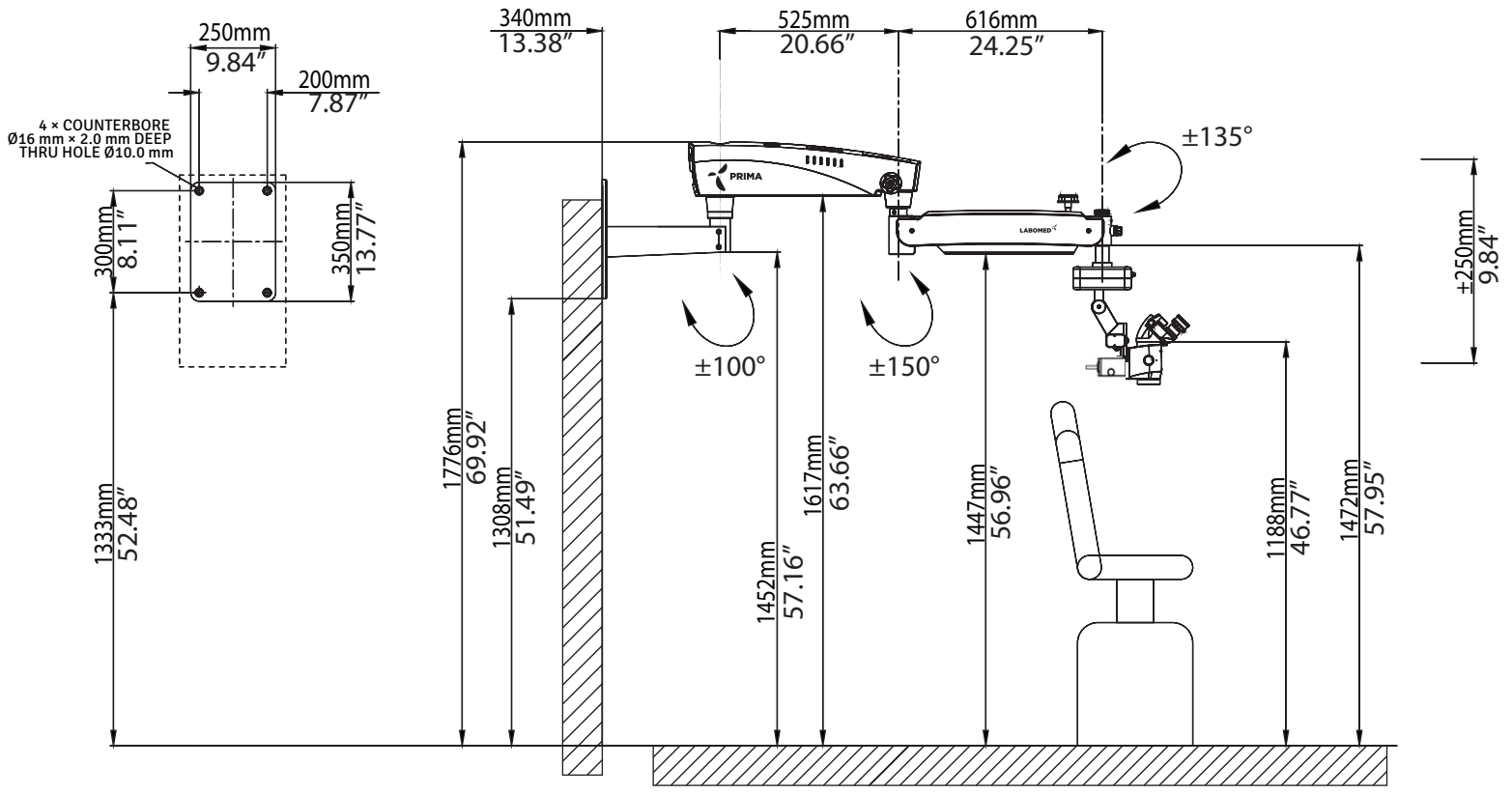


Fig. 3B

WALL MOUNT ASSEMBLY (continued)

HORIZONTAL WALL MOUNT WITH LONG SUSPENSION ARM

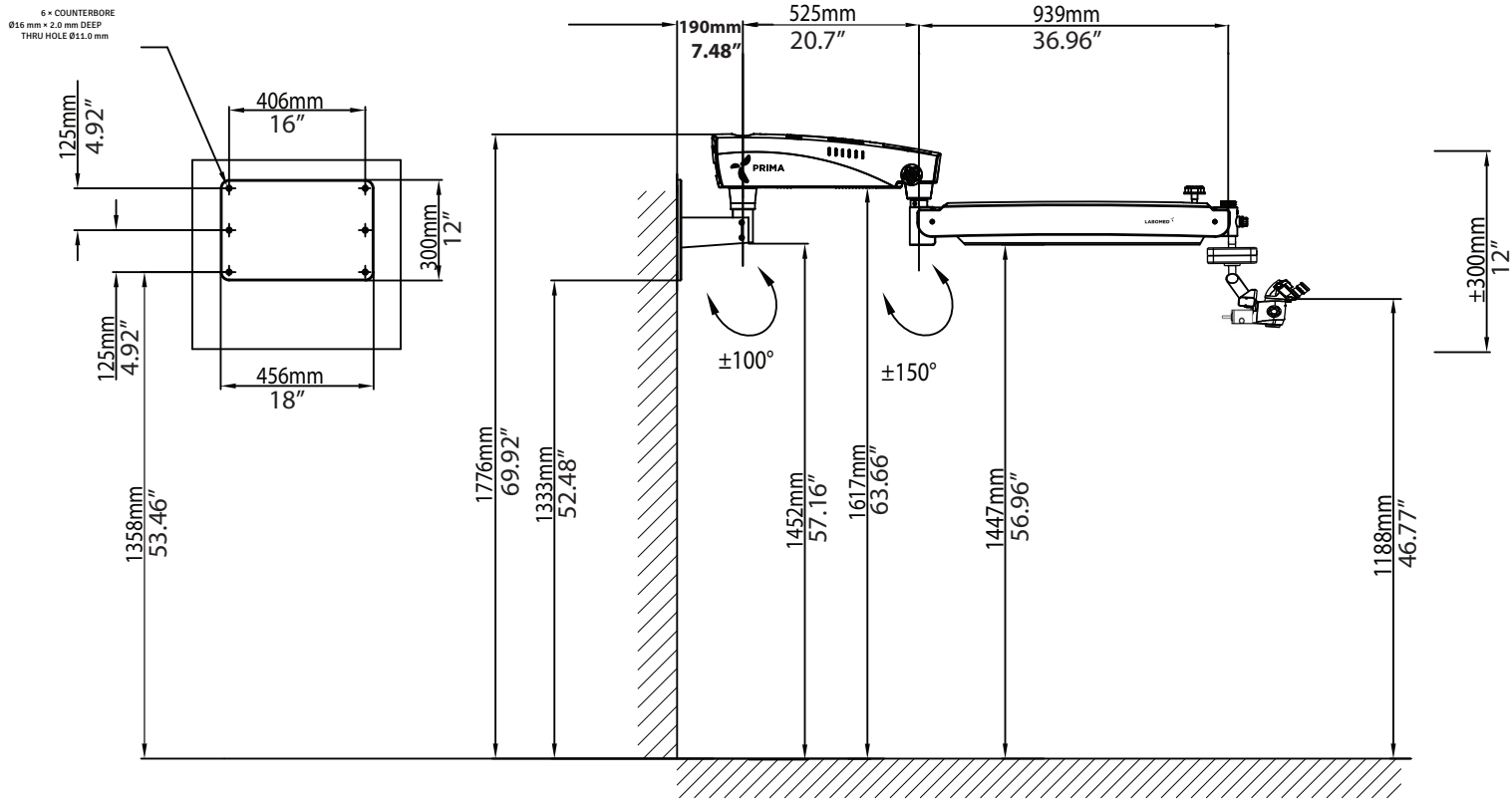


Fig. 4

WALL MOUNT ASSEMBLY (continued)

VERTICAL WALL MOUNT WITH LONG SUSPENSION ARM

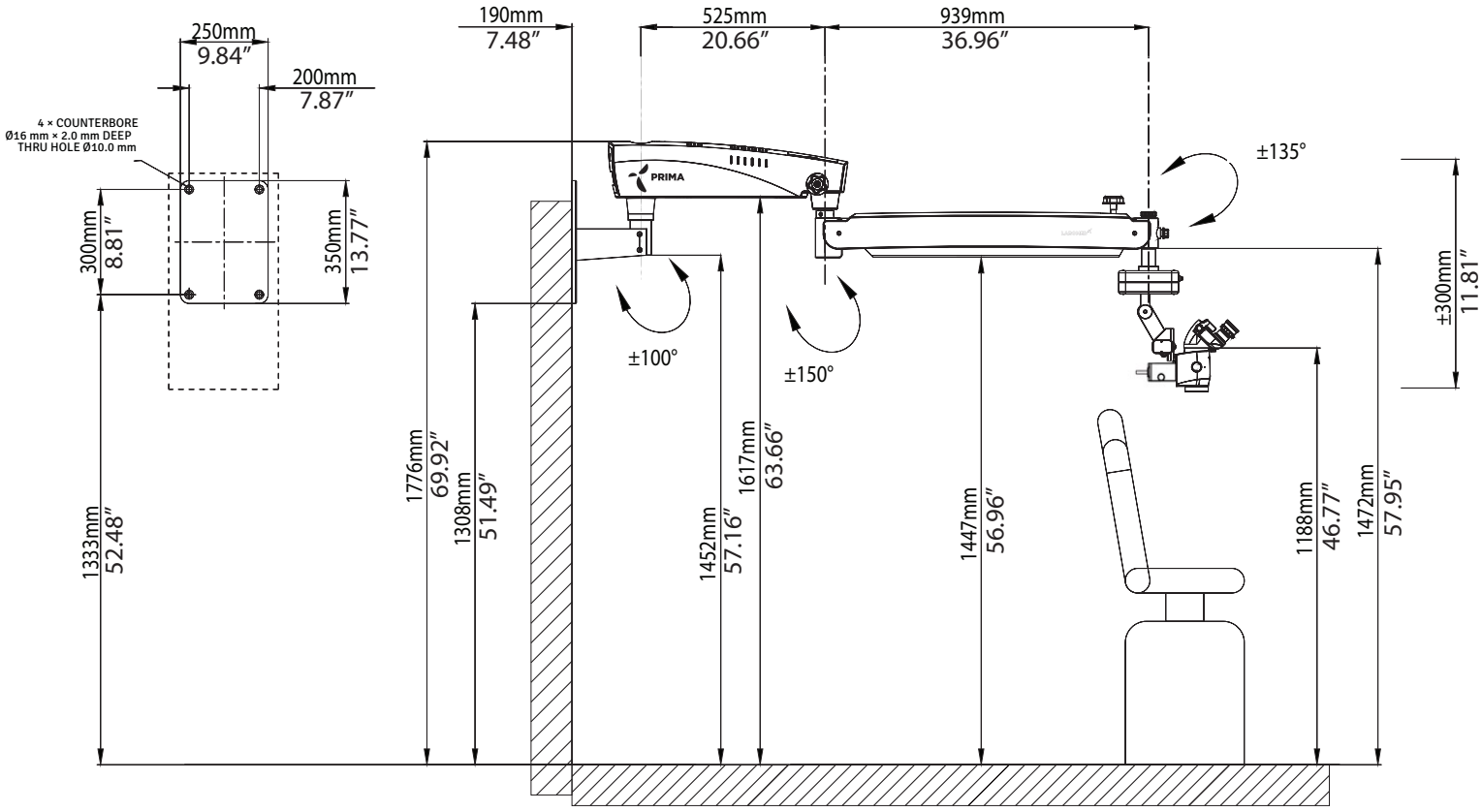


Fig. 4A

WALL MOUNT ASSEMBLY (continued)

VERTICAL WALL MOUNT (LONG BRACKET) WITH LONG SUSPENSION ARM

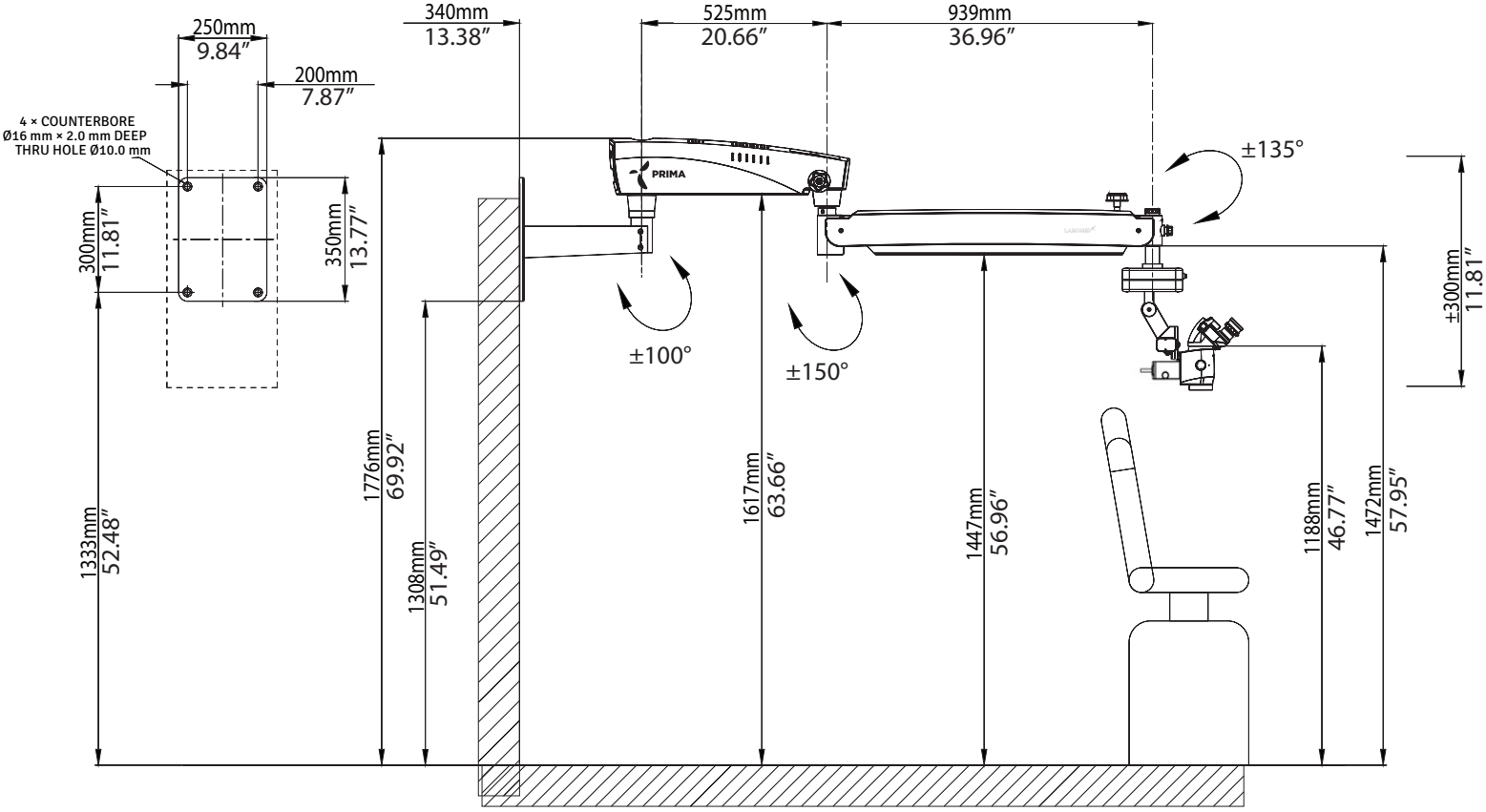


Fig. 4B

INSTALLATION REFERENCES (WALL MOUNT HORIZONTAL)

Wall mount: MARKING REFERENCE

Anchoring the wall mount

Reference
A Paper template for marking
B Wall mount assembly
C Distance from floor: choose the height for the ordered configuration from Figures 3 and 4.

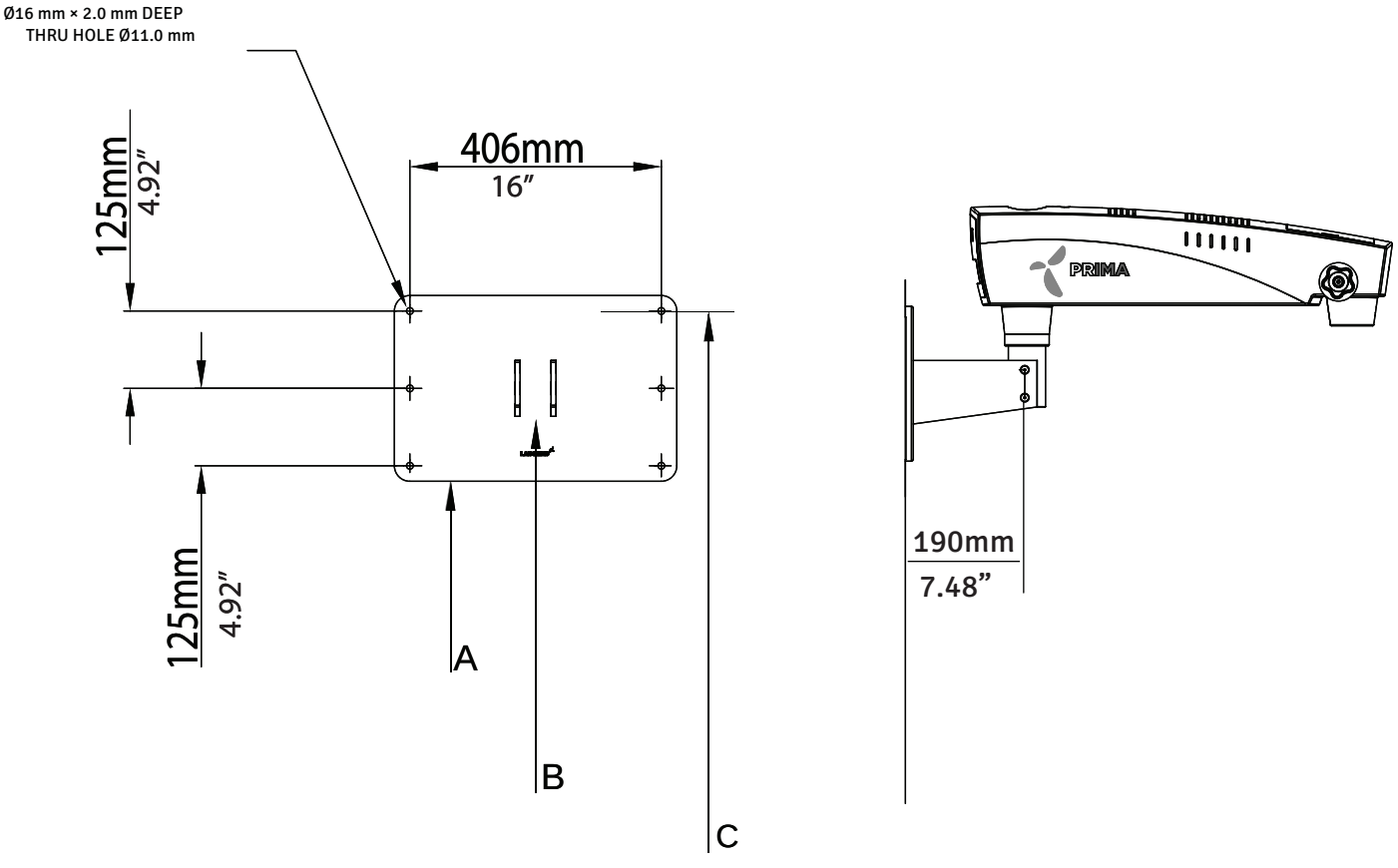


Fig. 5

INSTALLATION REFERENCES (WALL MOUNT VERTICAL)

Wall mount: MARKING REFERENCE

Anchoring the wall mount

Reference
A Paper template for marking
B Wall mount assembly
C Distance from floor: choose the height for the ordered configuration from Figures 3 and 4.

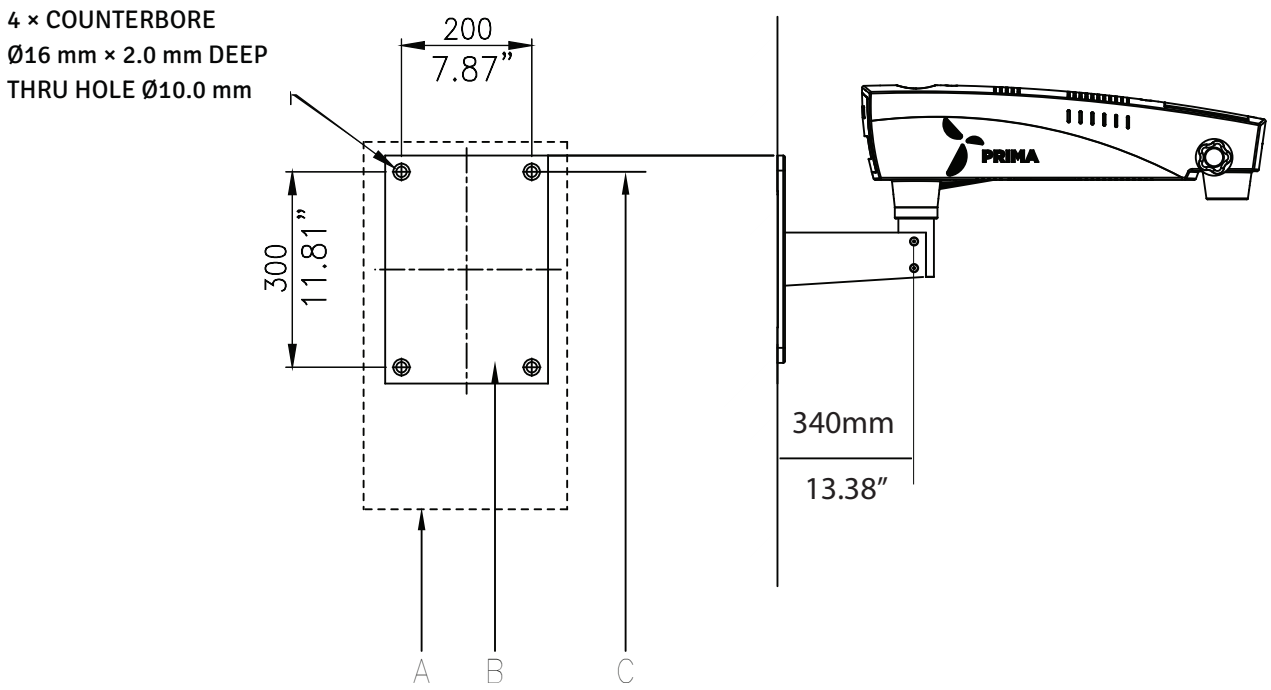


Fig. 5A

INSTALLATION REFERENCES (WALL MOUNT)

Wall mount: alternative installation at the patient's side (with standard suspension arm)

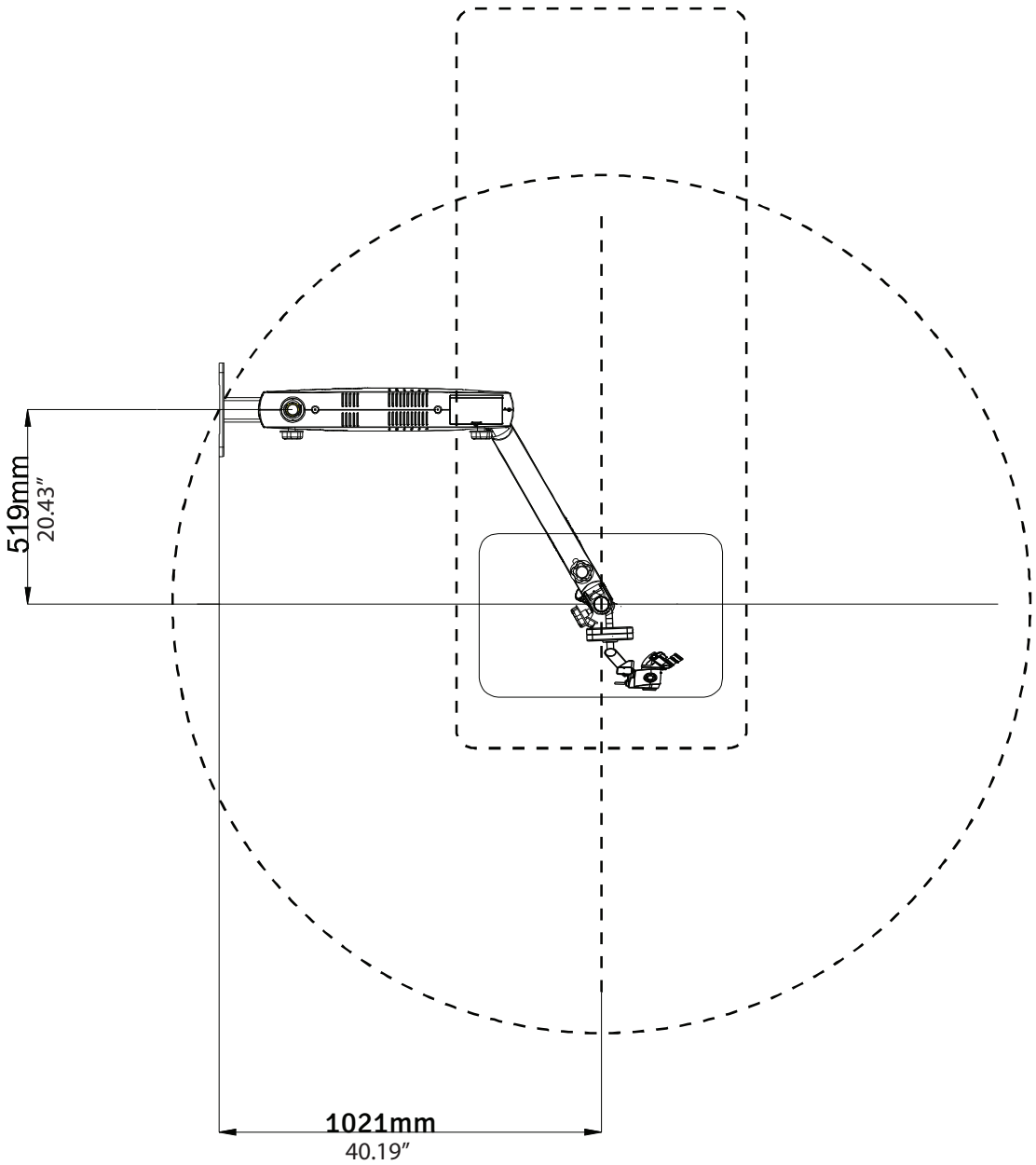


Fig. 6

INSTALLATION REFERENCES (WALL MOUNT) (continued)

Wall mount: alternative installation at the patient's side (with long suspension arm)

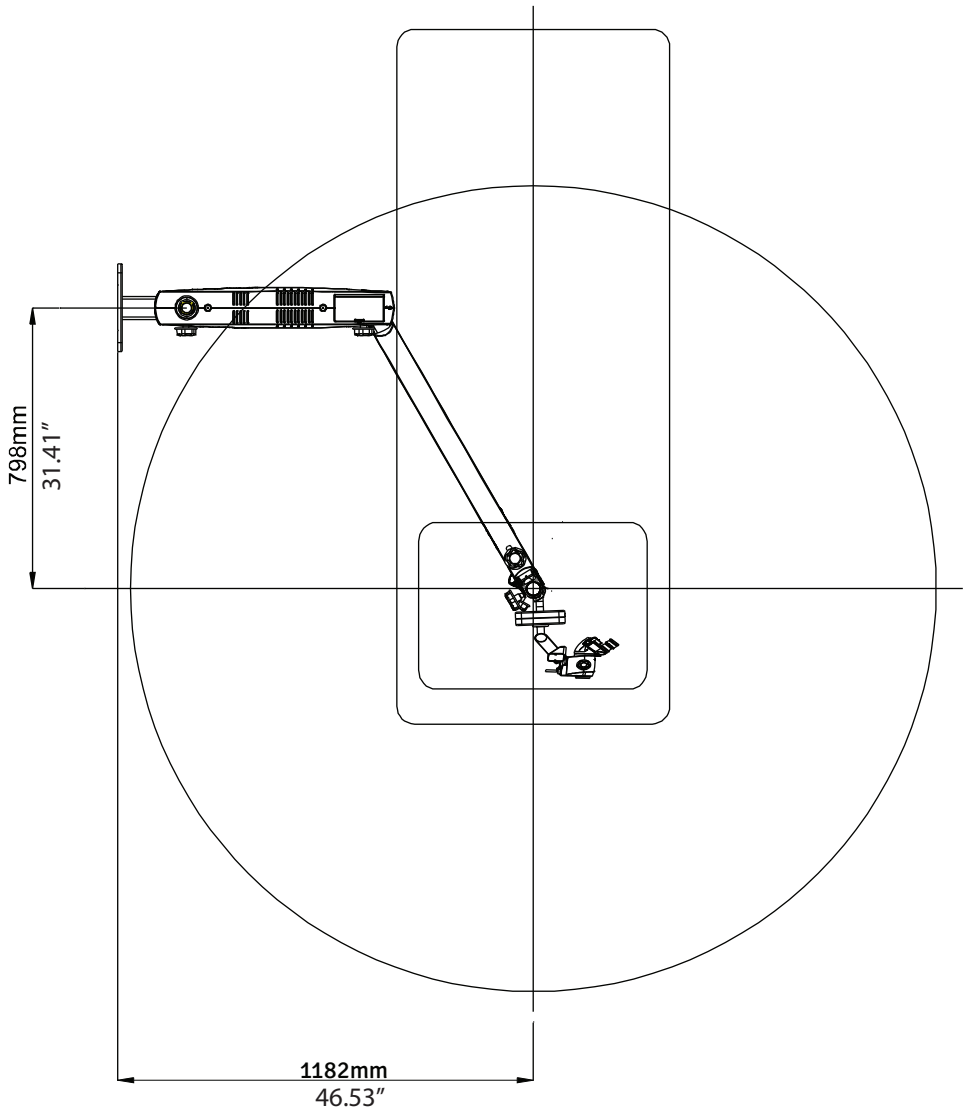


Fig. 7

WALL MOUNT INSTALLATION REFERENCES (WOODEN WALL)

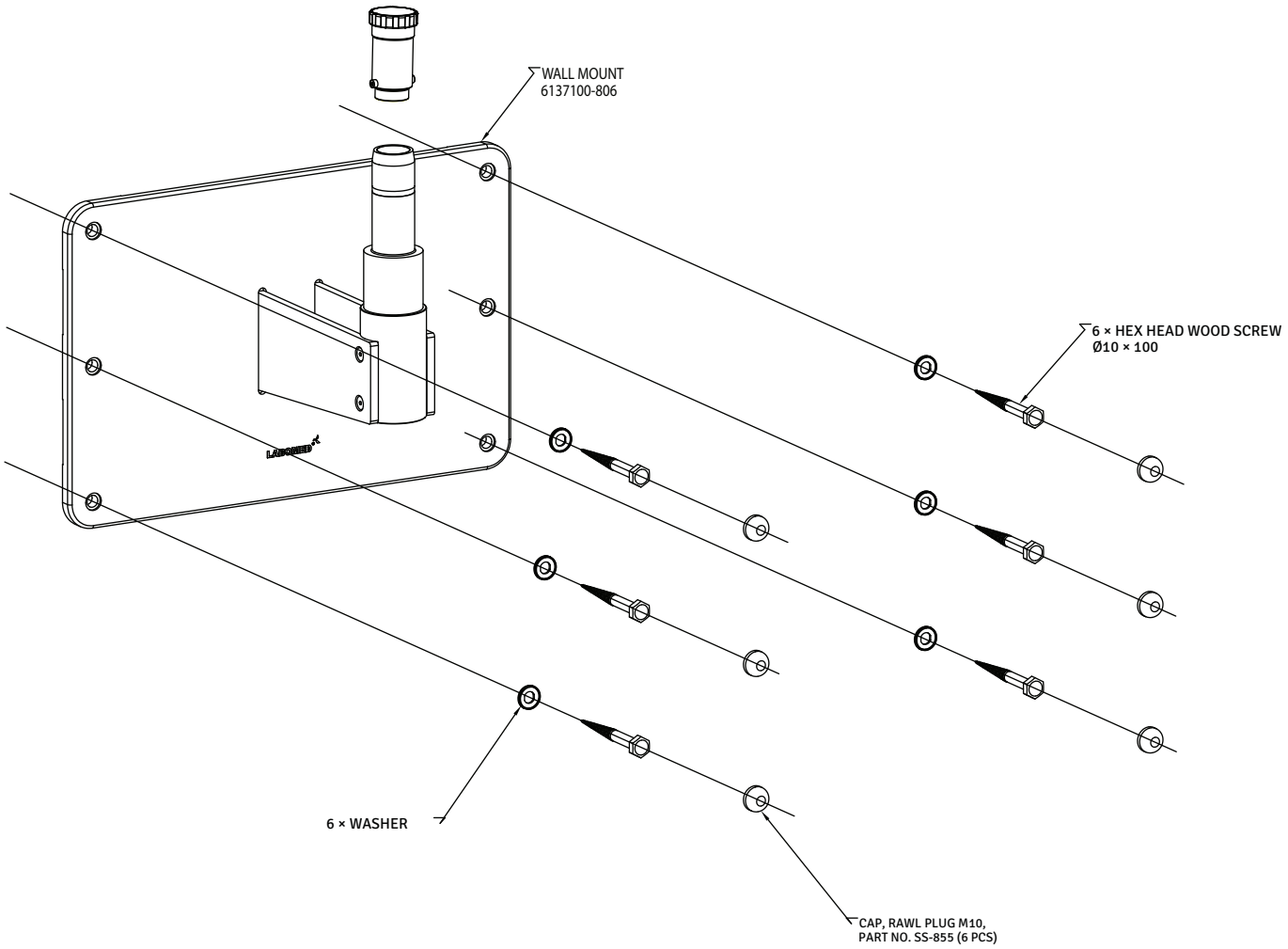
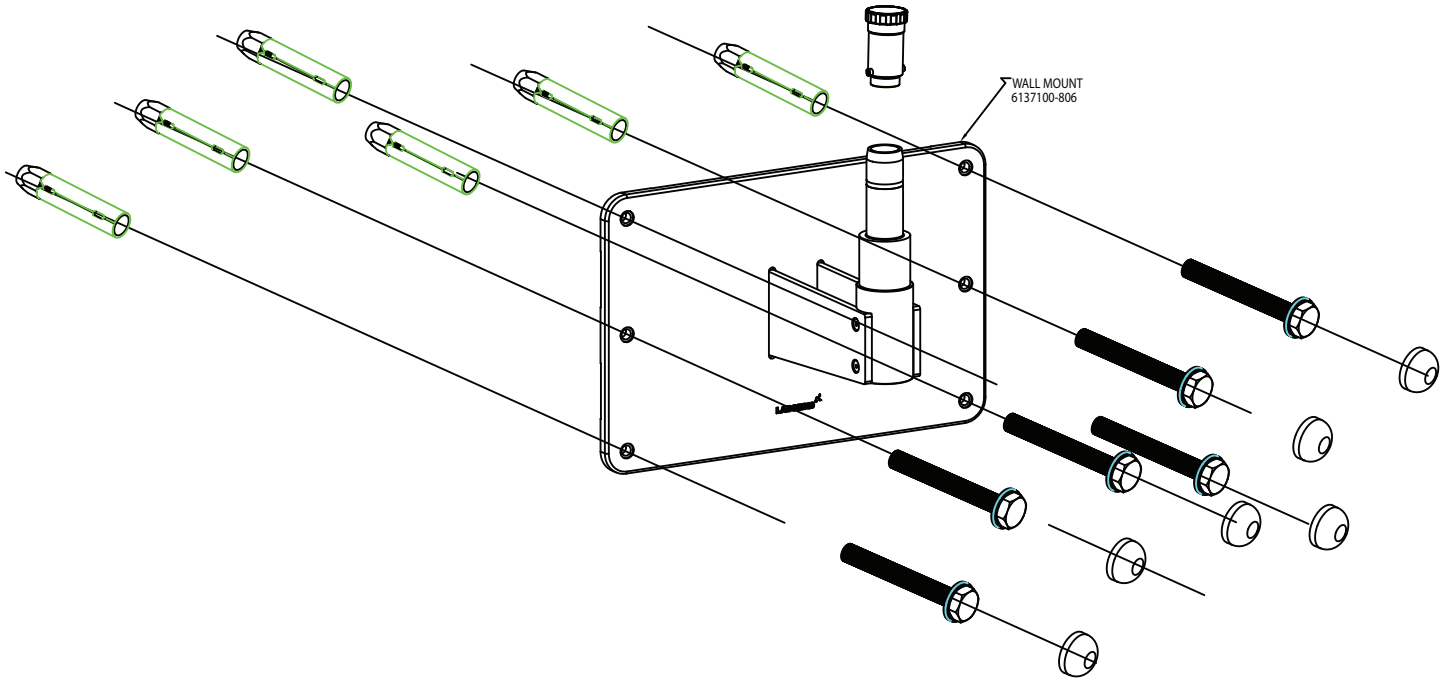


Fig. 8

HORIZONTAL WALL MOUNT INSTALLATION REFERENCES (SOLID BRICK WALL)



VERTICAL WALL MOUNT INSTALLATION REFERENCES (SOLID BRICK WALL)

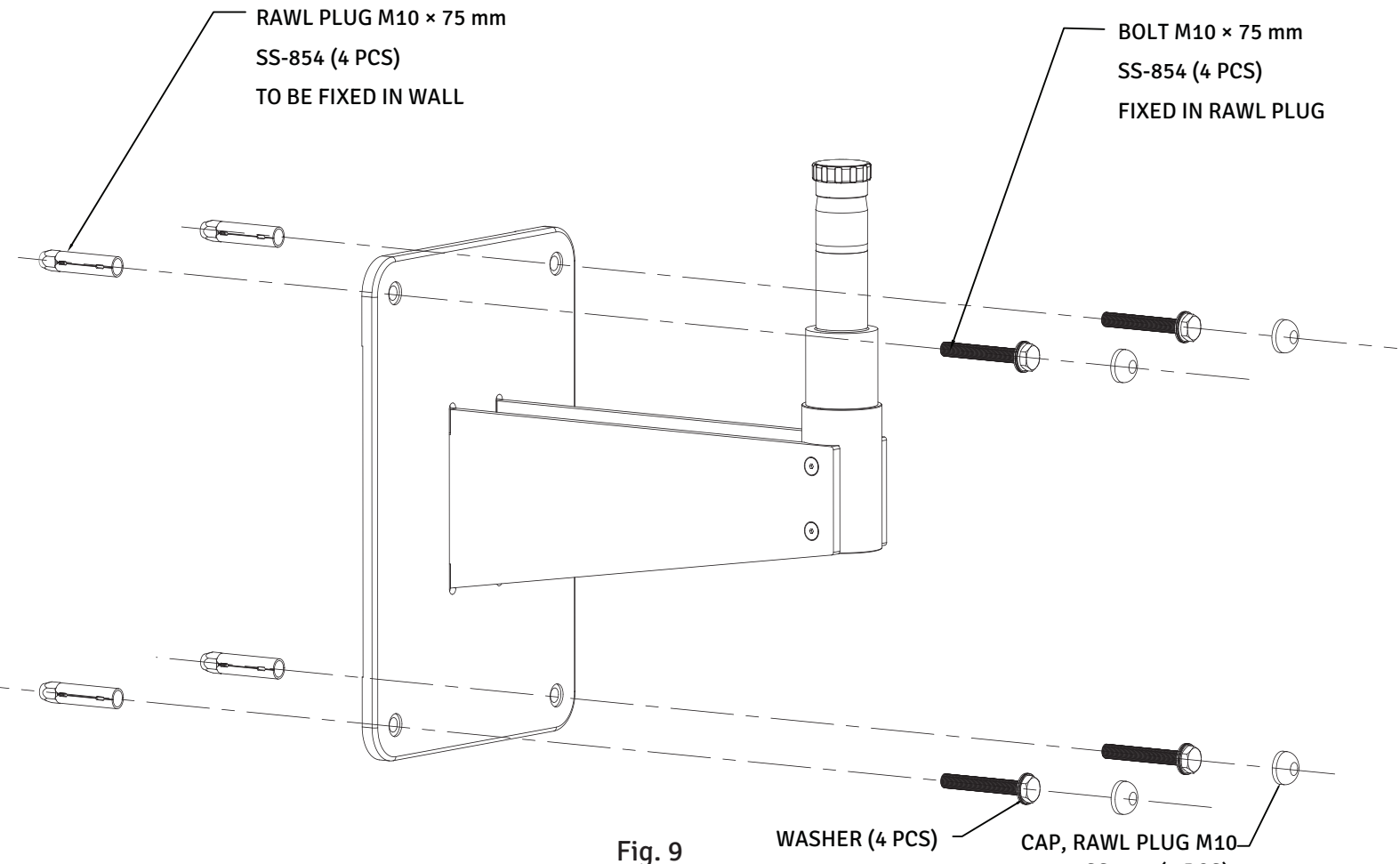


Fig. 9

INSTALLATION REFERENCES (WALL MOUNT)

WALL MOUNT WITH STANDARD SUSPENSION ARM & SWIVEL ARM WITH 8" EXTENSION ARM

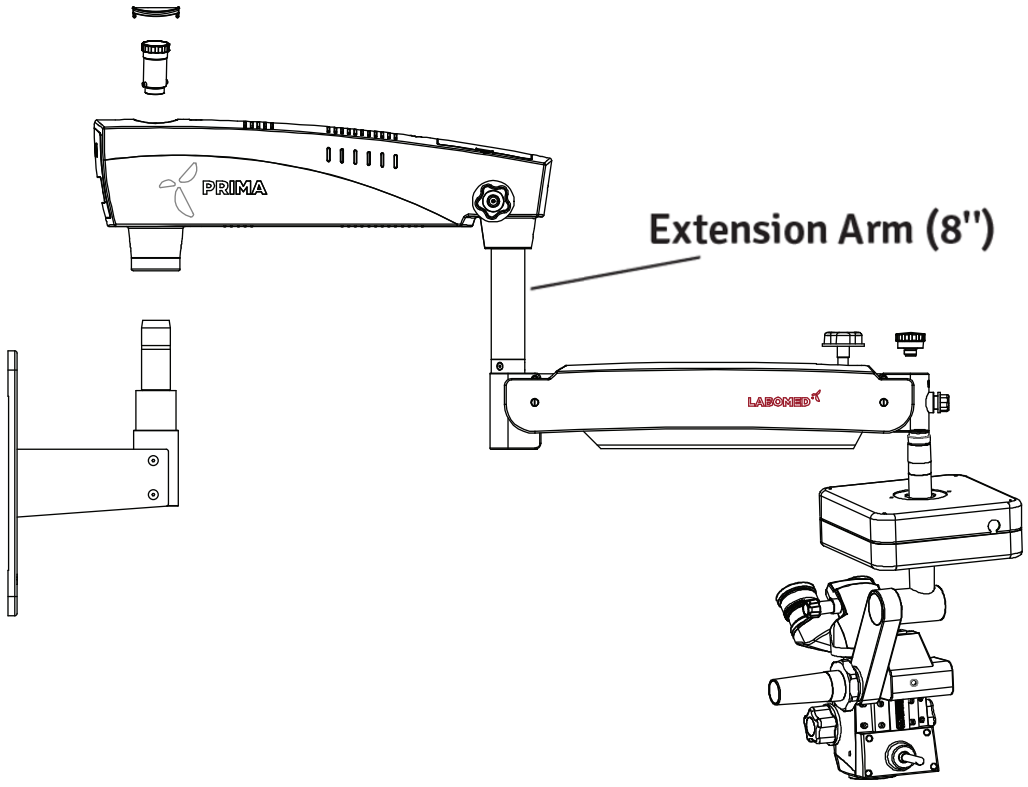


Fig. 10

INSTALLATION PREPARATION (WALL MOUNT)

WALL MOUNT INSTALLATION

Before installing a LABOMED wall mount microscope, make sure there is enough space for the selected configuration. See Figures 6 and 7.

Measure the distance between the stud centers. The LABOMED wall mount is designed to mount directly on a wall with wood studs at 406 mm (16") centers, or on a solid brick or concrete wall at least 229 mm (9") thick.

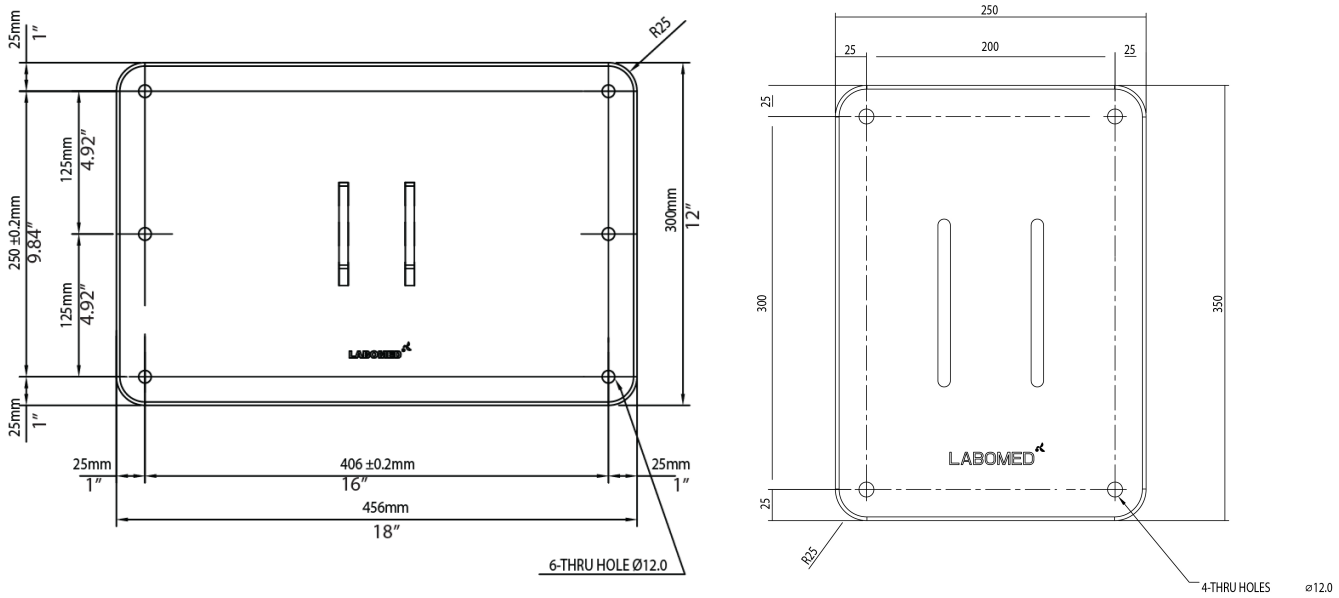


Fig. 11

CONTENTS

1. Paper template for marking - 1
2. Wall mount assembly - 1
3. Hex lag bolts (for wooden walls) - 6
4. Plain washer - 6
5. RAWL anchor bolts (for masonry walls) - 6
6. Cap set bolt - 6

WALL MOUNT INSTALLATION PROCEDURE

WALL MOUNT INSTALLATION ON STANDARD 16" (406 MM) WOODEN WALL STUD SPACING

To secure the wall mount system to wooden wall studs at 16" (406 mm) centers, use 3/8" × 4" hex head lag screws.

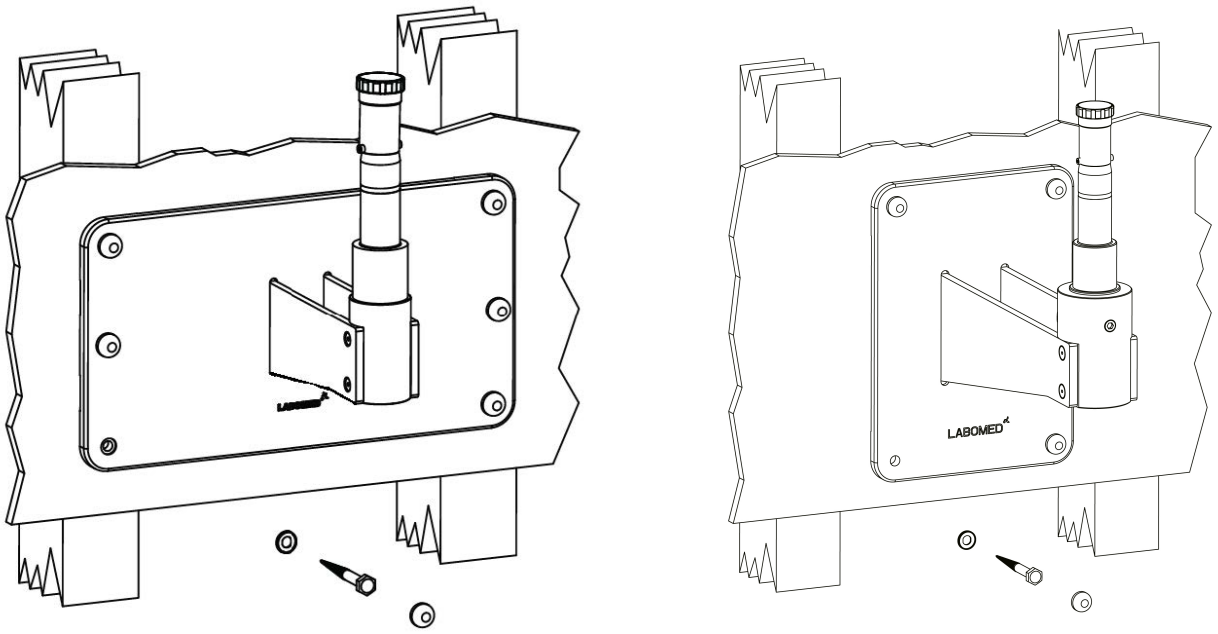


Fig. 12

WARNING: THE MOUNTING HARDWARE SUPPLIED FOR WOODEN WALLS IS NOT DESIGNED FOR WALLS WITH STEEL STUDS OR FOR CINDER BLOCK OR MASONRY WALLS.

WALL MOUNT INSTALLATION PROCEDURE (continued)

LEVELING THE WALL MOUNT PLATE ASSEMBLY

After installation, the wall mount (6137100-806) must be level both horizontally and vertically. Leveling the wall mount assembly prevents the microscope system from drifting from side to side when it is used at full extension.

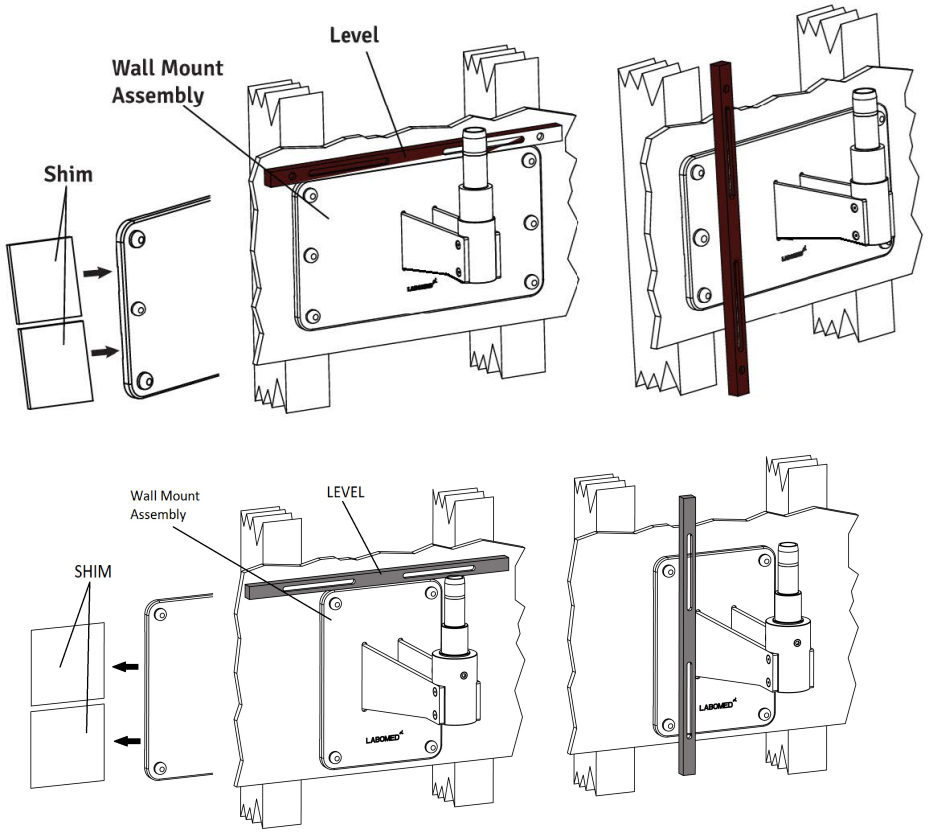


Fig. 13

1. Slightly tighten the bolts on the top side, leaving the bottom bolts slightly loose.
2. Place a level across the top of the back plate to check horizontal alignment. See Figure 13.
3. Use the 17 mm socket and ratchet to slightly loosen the 3/8" × 4" hex head lag screws in the corners of the back plate.
4. Adjust the back plate until it is level, then tighten the three bottom lag screws, leaving the top lag screws slightly loose.
5. Place a level vertically along the face of the wall mount, on both sides, to make sure it is perpendicular to the floor. See Figure 13.
6. If the wall mount is not perpendicular, insert shim material between the wall mount and the wall next to the lag screws (see Figure 13). Check with the level and tighten the lag screws once the mount is level.
7. Check the other side, insert shims as needed, then tighten the lag screws.
8. When the wall mount is level both horizontally and vertically, securely tighten all six lag screws.

WALL MOUNT INSTALLATION PROCEDURE (continued)

WALL MOUNT INSTALLATION ON A SOLID BRICK MASONRY WALL, MINIMUM 9" THICK

To secure this wall mount to a solid brick wall, use the six (6) M10 × 75 mm RAWL anchor bolts provided. See the figure below.

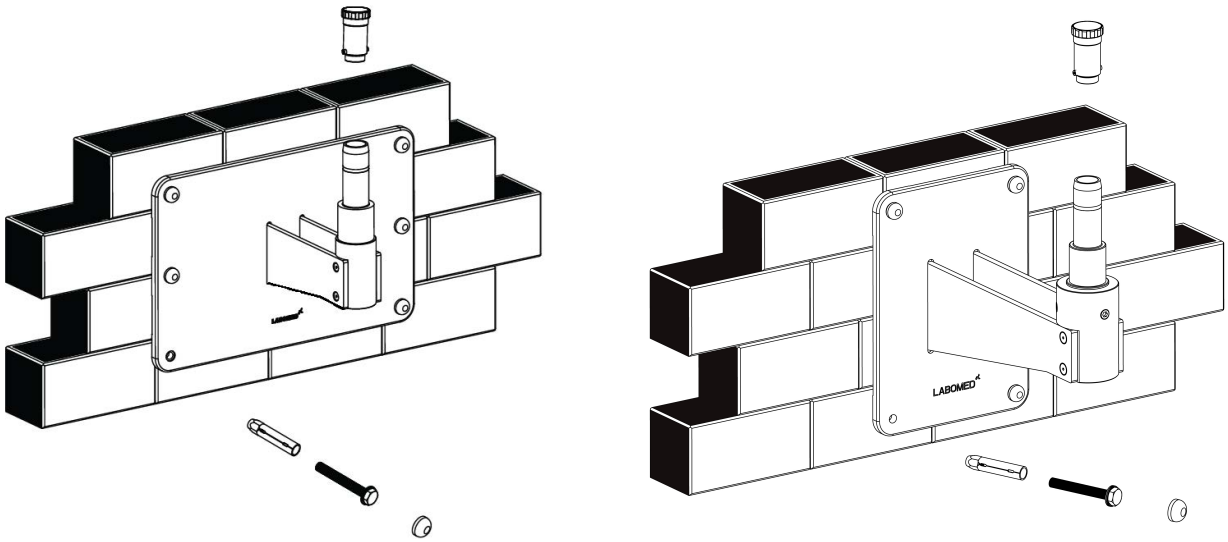


Fig. 14

1. Determine where on the wall the microscope will be mounted.
2. Tape the paper template to the wall. Mark the six (6) holes, making sure the template is straight.
3. Using a 16 mm masonry drill bit, drill six (6) 16 mm holes, at least 65 mm deep, at the positions marked.
4. Use the 10 mm × 75 mm RAWL anchor bolts.
5. Place the RAWL bolts through the holes and carefully insert them into the wall.
6. Remove the threaded bolt.
7. Position the wall mount against the wall. Place a flat washer under the head of each bolt and thread the six (6) RAWL bolts into the wall.
8. Using a 17 mm socket and ratchet, tighten the six (6) RAWL bolts to secure the wall mount in position, making sure its top edge and front face are level.

NOTICE: Shims and shim materials are supplied by the customer, not by LABOMED. Many shim materials are available commercially; no specific type or brand is implied.

WALL MOUNT INSTALLATION PROCEDURE (continued)

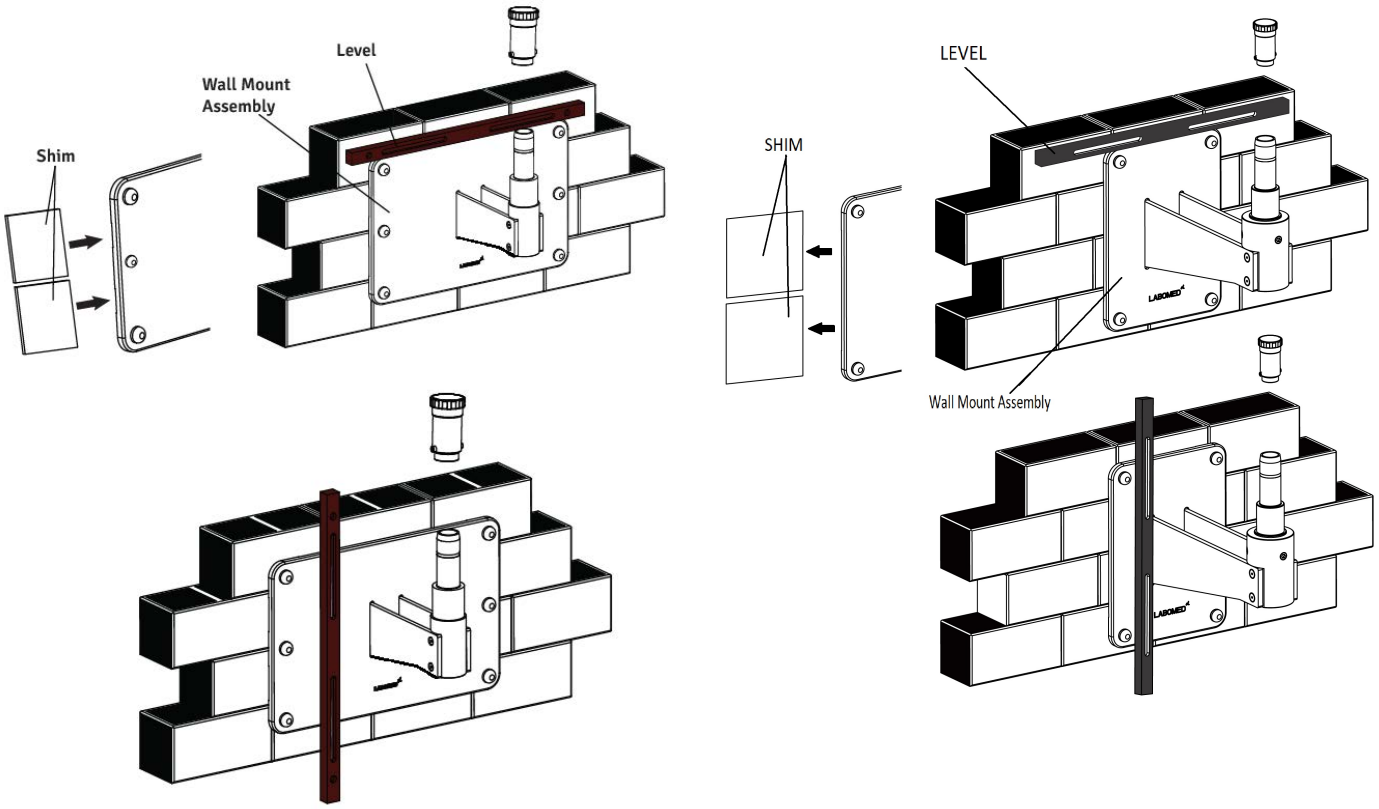


Fig. 15

WALL MOUNT INSTALLATION PROCEDURE (continued)

LEVELING THE WALL MOUNT ON MASONRY WALL

1. Slightly tighten the bolts on the top side, leaving the bottom bolts slightly loose.
2. Place a level across the top of the back plate to check horizontal alignment. See Figure 15.
3. Use a 17 mm socket and ratchet to slightly loosen the six (6) toggle bolts in the corners of the back plate.
4. Adjust the wall mount until it is level, then tighten the three bottom RAWL bolts, leaving the top toggle bolts slightly loose.
5. Place a level vertically along the face of the back plate, on both sides, to make sure it is perpendicular to the floor. See Figure 15.
6. If the back plate is not perpendicular, insert shim material between the back plate and the wall next to the RAWL bolts. Check with the level and tighten the toggle bolts once the mount is level.
7. Check the other side, insert shims as needed, then tighten the toggle bolts. See Figure 15.
8. When the back plate is level both horizontally and vertically, securely tighten all six toggle bolts.

INSTALLING THE HORIZONTAL ARM ASSEMBLY

1. Open the microscope arm box and remove the arm.
2. Unscrew the threaded plug from the wall mount shaft as shown in Fig. 15.
3. Assemble the arm on the wall mount shaft (see Fig. 14) and reinstall the threaded plug.
4. Complete the installation as shown in Fig. 1, 2, 3 or 4, according to the configuration ordered.

WALL MOUNT INSTALLATION PROCEDURE (continued)

Construction requirements for the wall mount

1. The 6137100 wall mount must be installed only as recommended in this manual.

2. The responsible construction specialist must confirm in writing that the applicable regional and local codes and regulations have been complied with and that the points listed below have been addressed. The customer must keep this confirmation with the wall mount records. A copy of this document must be provided to the LABOMED representative or dealer.

3. The wall post on which the Prima wall mount is installed must have the following load capacity: Perpendicular force: minimum 2500 N Torque:
Perpendicular to the wall 2500 Nm minimum Parallel to the wall 2000 Nm minimum Also take into account any additional loads acting on the wall and any other loads anchored in the wall.
The wall construction must meet these requirements.

4. The wall flange must be aligned vertically and horizontally as explained in this manual.

Note:
If an existing wall anchor plate is ever replaced, never reuse the old anchors. New anchor holes must be drilled. When calculating the effective strength of the new anchors, take into account the weakening effect of the holes in the wall.

5. On the basis of the above, the person responsible for the building must decide on, and take responsibility for, the most suitable anchoring method.

WALL MOUNT INSTALLATION PROCEDURE (continued)

Control and power supply of the system

Note:
The maximum weight of the surgical microscope including accessories must not exceed 7 kg. For the weights of the accessories, contact LABOMED.

The weight of the mount including the surgical microscope is as follows:
Wall mount kit: approx. 19 kg
Surgical microscope: approx. 18 kg
Total: approx. 37 kg

Power line: 3 × 1.5 mm² Fusing: 2.5 A Power consumption: max. 200 W

CONTENTS: Wall Mount Kit

1. RAWL plugs - 6 pcs
2. Washers - 6 pcs
3. Wall mount

INSTALLATION

1. Cut the tape on one of the wheel support assembly boxes as shown in Fig. 1.



Fig. 1

2. Remove the four (4) foam sheets as shown in Fig. 2.



Fig. 2

3. Lift out 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. Lift off the top cover as shown in Fig. 5 and place it next to the wheel support assembly. Repeat the same procedure for the other wheel support assembly.



Fig. 5

6. Place both wheel support assemblies on the floor close to each other. Using the Allen wrench provided (8 mm), remove the two (2) screws already mounted on each wheel support assembly, as shown in Fig. 6.



Fig. 6

INSTALLATION: BASE (continued)

7. Cut the tape on the center support assembly box as shown in Fig. 7.



Fig. 7

8. Remove the two (2) foam sheets as shown in Fig. 8.



Fig. 8

9. Lift out the center support assembly as shown in Fig. 9.



Fig. 9

10. Place the center support assembly on the wheel support assemblies, aligning the corresponding holes, as shown in Fig. 10.



Fig. 10

11. Tighten the four (4) screws with the 8 mm Allen wrench as shown in Fig. 11.



Fig. 11

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



Fig. 12

MICROSCOPE INSTALLATION

1. Open the microscope box and remove the column. Engage the column on the shaft by aligning the three guide holes on the column and the shaft, shown as B in Fig. 13.

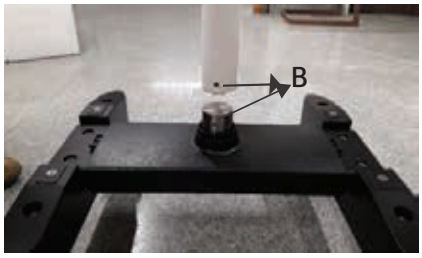


Fig. 13

2. Tighten the three Allen screws on the sides, shown as C in Fig. 14.

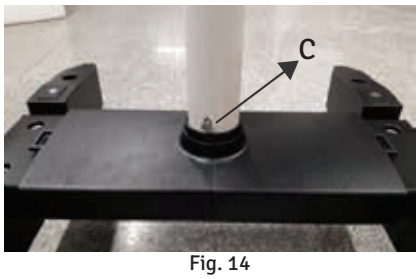


Fig. 14

3. Make sure that ring (D) is fixed in place during assembly of the column, as shown in Fig. 15.

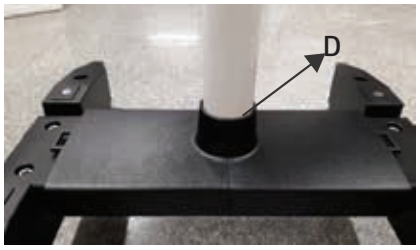


Fig. 15

Remove the swivel arm and suspension arm assembly from the packing box and proceed as follows (see Fig. 3):

Loosen the swivel arm lock knob (A).

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

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

Fit the protective cap (3) and loosen the suspension arm locking knob (B) so that the arm can rotate.

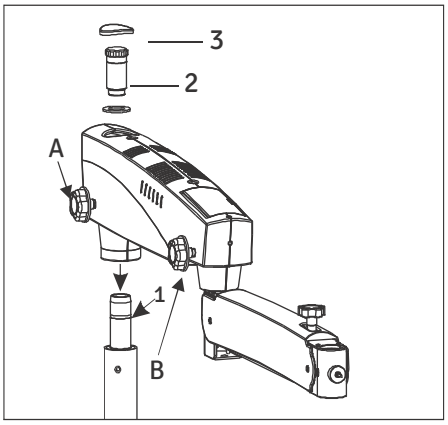


Fig. 3

MICROSCOPE INSTALLATION (continued)

Remove the XYZ coupling assembly from the packing and proceed as follows (see Fig. 5):

- Install the coupling on the suspension arm by sliding the guide shaft (1) into the suspension arm.
- Lock the inclined coupling with the threaded plug (3).
- Make sure the magnification changer handles (M) have their silicone **covers.**

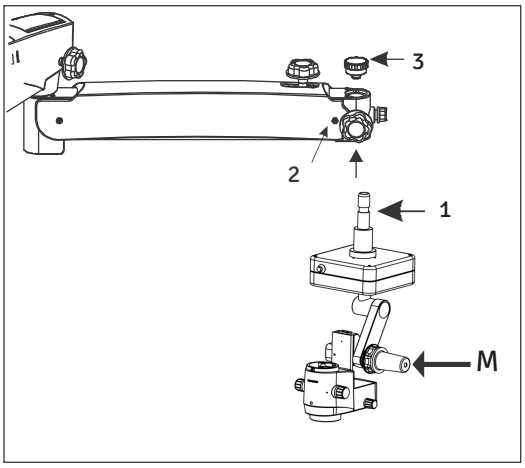


Fig. 5

Make sure that the safety screw is tightened in position (2) to prevent the coupling from falling suddenly. The safety screw is fitted in the arm.

Mounting the light guide

- Switch off the illumination system.
- The light guide comes pre-routed through the swivel arm (which houses the LED illumination system) and the suspension arm.
- Insert the light guide into the microscope receptacle until it clicks in place, as shown at A in Fig. 6 fiber cable must index in position while it is inserted into the fiber-optic mount.
- Make sure that the light guide is routed so that the carrier system and the surgical microscope are not obstructed and can move through their entire range without stretching, kinking or twisting the light guide.

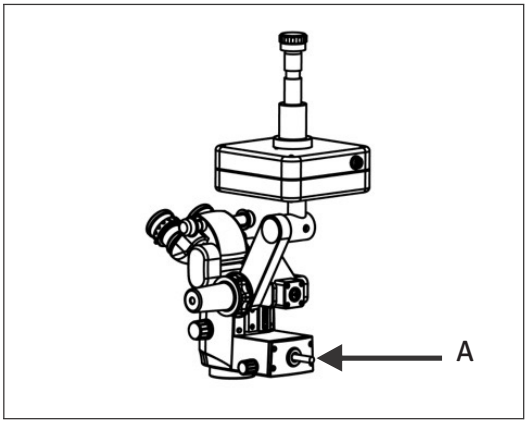


Fig. 6

Install the binocular head and eyepieces on the magnification changer. Secure the binocular head with the head locking screw, shown as (A) in Fig. 6a.

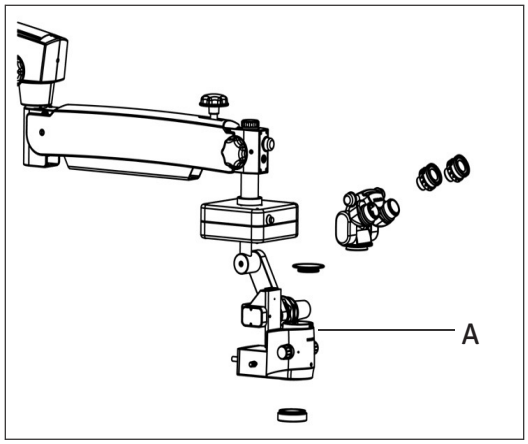


Fig. 6a

ELECTRICAL CONNECTIONS

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

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

Note: The power supply has a universal input of 100–240 V AC, 50/60 Hz. Before plugging in, follow the instructions on the electrical label at the bottom of the arm, shown as (3) in Fig. 8.

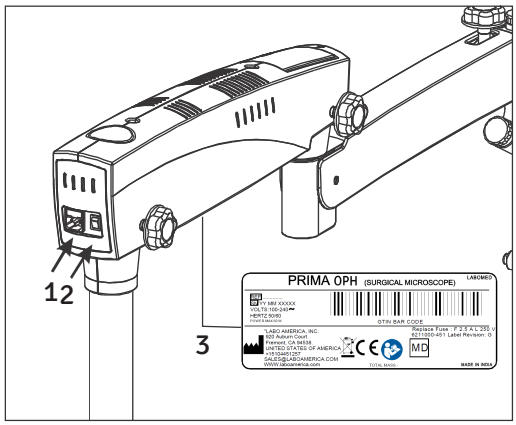


Fig. 8

CONTROLS

ON/OFF switch (shown as 2 in Fig. 8 above)

The switch is on the back of the swivel arm. In the ON position, the green LED lights and the cooling fan starts. Set the intensity control knob to minimum before switching the system on.

To extend the LED life, switch the microscope off or raise the suspension arm to the parked position when it is not in use.

INTENSITY CONTROL KNOB

The knob is at the front of the suspension arm, shown as (A) in Fig. 9. Use it to set the brightness of the field of view for comfortable viewing.

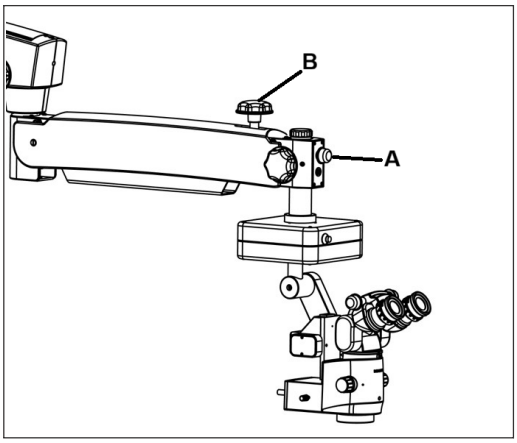


Fig. 9

SWIVEL ARM LOCKING KNOB

This knob locks the swivel arm in the desired position after initial focusing on the area of interest. Turn it clockwise to lock. The knob is shown as (B) in Fig. 9.

BRAKES

Press down the two brakes on the caster wheels to stop the stand from moving. To release, press the upper part of the brake. See Fig. 10.

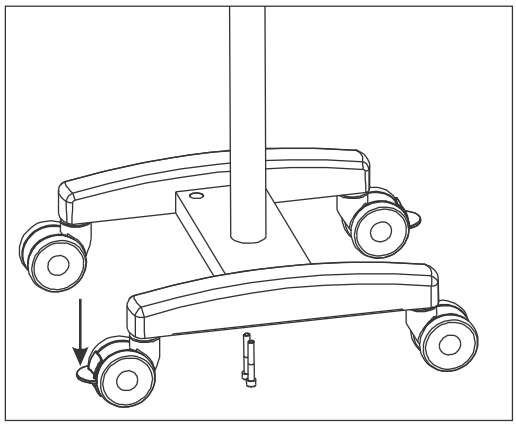
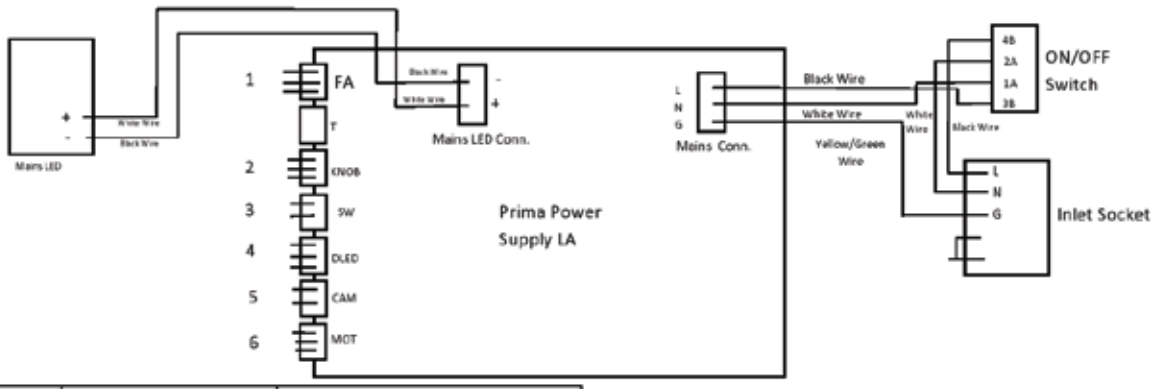


Fig. 10

PRIMA WIRING 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

INSTRUCTIONS FOR USING THE MICROSCOPE

SETTING UP THE MICROSCOPE:

1. Lock all the brakes on the base wheels after positioning the microscope at the area of interest, for stability.

2. The tension on the microscope is factory-preset for the configuration ordered. You can still adjust the up and down force by turning the Allen screw clockwise or counterclockwise with an 8.0 mm Allen wrench. See Fig. 11 for the location of the tension adjusting screw.

3. After coarse focusing on the area of interest, lock the up and down movement of the suspension arm with the locking knob (B) in Fig. 9.

4. Set the interpupillary distance on the IPD scale for comfortable viewing.

5. The illumination is controlled with the control knob (A), Fig. 11. Turn it clockwise or counterclockwise to set the illumination level. Keep it at minimum during functional setup.

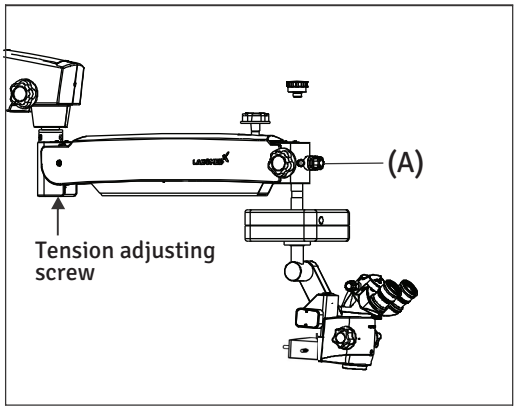


Fig. 11

SETTING UP THE MAGNIFICATION (see Fig. 12)

1. Set the highest magnification with one of the rotating knobs (12a) on the magnification changer.

2. Fine focusing is done with the foot pedals.

3. Center the observation area exactly in the field of view with the manual handle (12c).

4. Make sure that the magnification changer is engaged at an index (click-stop) position.

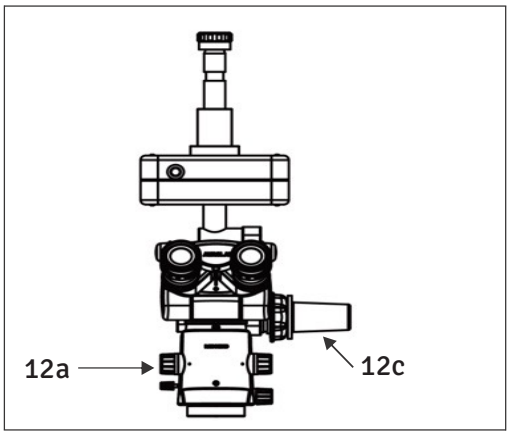


Fig. 12

INSTRUCTIONS FOR USING THE MICROSCOPE

INTENDED USE:

The PRIMA OPH surgical microscope is designed for surgical procedures in ophthalmology and 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 the horizontal plane. The range of travel is 50 mm × 50 mm.

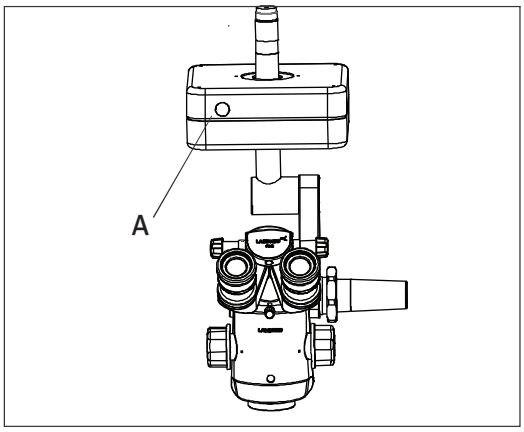


Fig. 13

The X-Y coupling has a re-centering function. When you press the red activator button, shown as (A) in Fig. 13:
- the X-Y coupling returns to its center position.
- XY movement is controlled with the joystick on the foot control.

Z-axis movement: the Z-axis coupling allows fine, motorized focusing on the area of interest within a travel range of 40 mm. Two foot pedals on the foot control move the Z-axis up and down.

2. SUPPORT ARM FOR THE SURGICAL MICROSCOPE

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

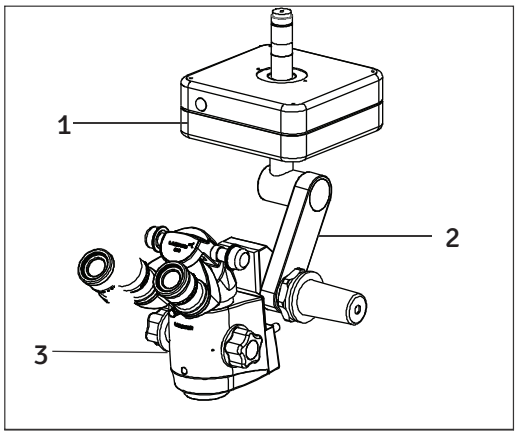


Fig. 14

3. MAIN MICROSCOPE

The Max Lite coated optics of the main microscope provide superb optical quality. The microscope image shows optimum contrast and excellent detail recognition, with a large depth of field.
The bright microscope image is a particular benefit in vitreoretinal surgery.
Objective lenses with focal lengths of 175 mm and 200 mm are available for different working distances.

INSTRUCTIONS FOR USING THE MICROSCOPE

The ergonomic 0–210° tiltable binocular tube is provided for the main surgeon. Its large tilt range allows work with minimum fatigue.

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

CHANGING THE OBJECTIVES / EYEPIECES

1. To remove an objective, turn it counterclockwise. To fit it, thread it in clockwise.

2. To install the eyepieces, insert them into the eyepiece tubes of the observation head.

3. A range of objectives and eyepieces is available.

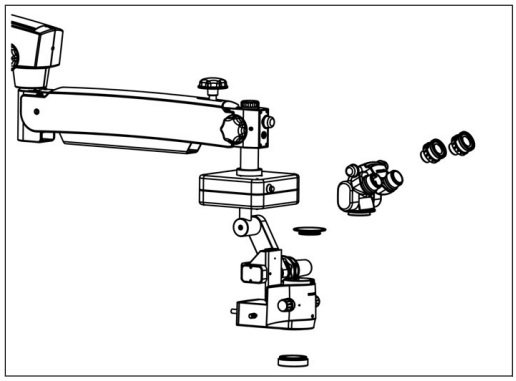


Fig. 15

REPLACING THE ILLUMINATION SOURCE

Open the swivel arm covers. Detach the fiber-optic cable and replace illumination assembly A with a new assembly. Refit the arm covers.

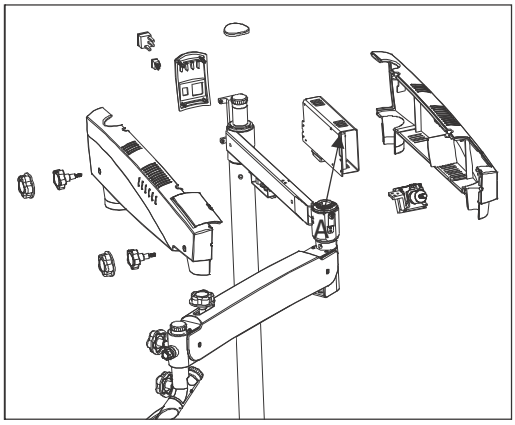


Fig. 16

FUSE REPLACEMENT

The fuse holder is part of the AC inlet, next to the on/off switch. Open the fuse compartment with a flat-head screwdriver. It holds two fuses: one in use and one spare. Replace the blown fuse with a new fuse and close the fuse compartment.

For fuse replacement, see the label shown in Fig. 17.

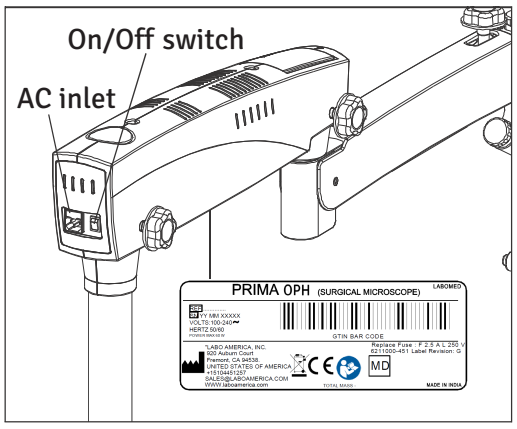


Fig. 17

THERMAL CUT-OFF

The instrument is designed for safe operation, with sufficient cooling provided by free and forced air circulation from the fans in the electrical box.
In addition, the instrument has a built-in “auto thermal cut-off” safety mechanism that operates if the LED temperature exceeds 70 °C. If the thermal cut-off fails, there is no risk to the instrument; only the LED may fail. In that case, only the LED needs to be replaced, and the thermal cut-off then works again. To replace the LED, call LABOMED service personnel or an authorized dealer.

LED specification: 3.7 V, 13.5 A

ADJUSTING TENSION WHEN USING ACCESSORIES

After additional accessories have been mounted, compensate for the additional load on the suspension arm by turning the tension control screw on the suspension arm clockwise or counterclockwise.

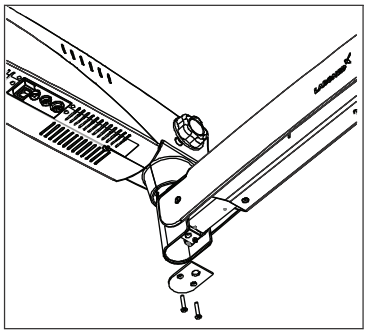


Fig. 18

See Fig. 18.

1. Remove the plate as shown by unscrewing the two screws.

2. Using a 4 mm Allen wrench, loosen the two Allen bolts as far as possible, as shown in Fig. 19. Note that these two screws do not come out.

3. Insert an 8 mm hex wrench in bolt (A), shown in Fig. 20. Turn it clockwise to increase the gas spring tension, or counterclockwise to reduce it.

4. When the gas spring has the desired tension, retighten the two screws as shown in Fig. 19.

5. Refit the plates shown in Fig. 18.

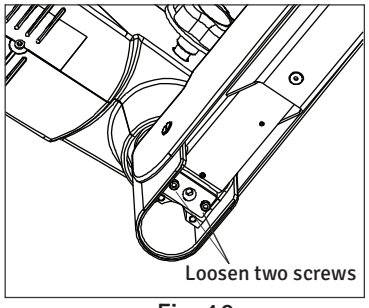


Fig. 19

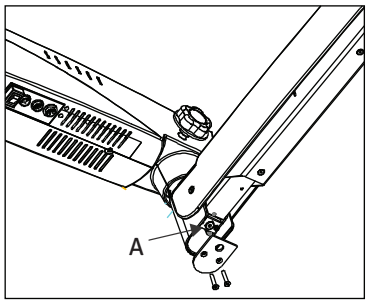
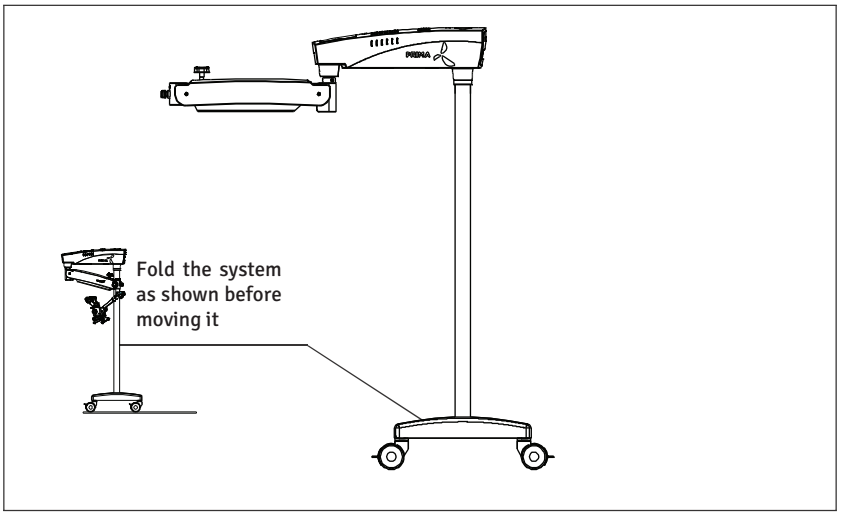


Fig. 20

MOVING POSITION



Position of the system for safe transportation.



RELOCATING THE STAND

- Switch off the unit at the power switch.
- Disconnect the power cable from the line supply.
- Disconnect the video cable from the video modules (e.g. video monitor, USB monitor) and the camera control unit.
- Release the locks by pressing their upper parts downward.
- Bring the unit into its moving position.
- Watch the height when passing through doorways.
- Avoid collisions of any kind.
- Do not move the stand over steps or edges: it may tip over!
- Be extremely careful when moving over slopes.
- Do not park the stand on slopes.
- Press the locks downward.
- Check that the stand is locked in position.

CLEANING AND SERVICING

CARE & MAINTENANCE (Fig. 11)

This instrument is a high-quality technical product that requires no special periodic maintenance if handled carefully. To ensure optimum performance and safe working order, check its safe functioning once every 12 months as shown in the table below. We recommend having this check performed by our service representative as part of regular maintenance. If a failure occurs that you cannot correct using the troubleshooting table, attach an "out of order" sign to the instrument and contact our service representative for service parts, circuit diagrams and other assistance.

Surgical Microscope Maintenance/Servicing 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:

- When accessories are not in use, protect them from dust, e.g. with a dust cover.
- Remove dust with a rubber blower bulb and a soft brush.
- Clean lenses and eyepieces with special optical cleaning cloths and pure alcohol.
- Protect the microscope from moisture, fumes, acids and cosmetic materials. Do not store chemicals close to the instrument.
- Protect it from improper handling. Never install other device sockets or unscrew the optical system or 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 with a damp disposable cloth.
- Use disinfectants based on the following ingredients: aldehydes, alcohols, quaternary ammonium

CLEANING AND SERVICING (continued)

- Camera: clean optical components with a lint-free cloth moistened with a little methanol or glass cleaner. Do not use ethanol or spirit.
- Do not clean products or optical components in a cleaning/disinfecting device or an ultrasonic bath.
- LABOMED Maxi Lite coatings are fungus-resistant. If you clean as described above, the coatings will not be damaged.

TROPICAL ENVIRONMENTS / FUNGUS:

LABOMED uses specific safety precautions in its manufacturing techniques and materials. Other preventive measures include:

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

OCCUPATIONAL SAFETY AND HEALTH PROTECTION:

Observe occupational safety and health protection for the persons responsible for processing contaminated products.

Follow current regulations on hospital hygiene and infection prevention when preparing, cleaning and disinfecting the products.

INSTRUCTIONS

WORKPLACE:

Remove surface contamination with a paper towel.

REPROCESSING:

Reprocess a product immediately after use, or as required, following the cleaning instructions below.

CLEANING & SERVICING:

Required: water, detergent, spirit, microfiber cloth

- Take a linen or other soft cloth. Moisten it slightly with running tap water (below 40 °C), add a little detergent and clean the metal and plastic parts.
- Clean all optical components with spirit or alcohol.
- Dry the optical components with a microfiber cloth; dry the rest of the product with a paper towel.
- For servicing as required, contact the LABOMED after-sales service department.

AUTOCLAVING:

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

Temperature:	134 °C
Time:	10 minutes
Instrument:	Standard autoclave

CLEANING AND DISINFECTION

FOLLOWING DISINFECTANTS ARE RECOMMENDED FOR CLEANING AND DISINFECTION

1. For cleaning and disinfecting the painted, powder-coated, anodized, plastic, screen-printed and bare metal external parts:
Use ordinary household bleach (sodium hypochlorite 5%), diluted to 5000 ppm (10 parts water to 1 part bleach).

2. For cleaning optical surfaces:
Use 70% isopropyl alcohol.

PROCEDURE

- Take a muslin cloth.
- Moisten it until it feels wet.
- Disinfect and clean the surface gently, without much hand pressure, by drawing the wipe from one end to the other. Do not rub the parts.

NOTE:

1. Wear a mask and gloves when cleaning and disinfecting.
2. The muslin cloth must not be dripping wet, to prevent seepage into and rusting of moving or bare parts.
3. Alcohol is flammable; use it as a surface disinfectant only in well-ventilated spaces.

Prima OPH

AMBIENT REQUIREMENTS

For operation	Temperature Rel. humidity (non-condensing) Air pressure	+10 °C ... +40 °C 30% ... 90% 700 hPa ... 1,060 hPa
For transportation and storage	Temperature Rel. humidity (non-condensing) Air pressure	-40 °C ... +70 °C 10% ... 100% 500 hPa ... 1,060 hPa

The device is subject to the conformity assessment procedure under Article 52(7) and technical documentation in accordance with Annexes II and III of Regulation (EU) 2017/745. These devices are Class I (without a measuring function and non-invasive) per Rule 1, Annex VIII of MDR 2017/745. The CE mark on every microscope indicates compliance with the legal requirements.

TROUBLESHOOTING TABLE

This instrument is a high-quality technical product that requires no special periodic maintenance if handled carefully. To ensure optimum performance and safe working order, have its safety checked once every 12 months. We recommend having this check performed by our service representatives as part of regular maintenance. If a failure occurs that you cannot correct using the troubleshooting table, attach an “out of order” sign to the instrument and contact our service representative for service parts, circuit diagrams and other assistance.

PROBLEM	POSSIBLE CAUSE	REMEDY
No illumination at all	Power cable not plugged in	Plug in power cable.
	Power switch not pressed	Press the power switch.
	Defective instrument fuse	Replace the instrument fuse.
	Defective power cable	Replace the power cable.
	Line power failure	Contact the in-house technician.
	Failure of suspension system electronics	Contact the service department.
	Light guide not properly inserted in the arm or microscope	Insert the light guide properly to get maximum illumination.
Insufficient illumination	Brightness level set too low	Adjust the brightness with the brightness control knob.
	Light guide not properly inserted in the arm or microscope	Insert the light guide properly to get maximum illumination.
	Defective light guide (non-uniform illumination)	Replace the light guide.
Surgical field illumination inoperative or blinks	Light guide not properly inserted in the microscope arm	Insert the light guide as far as it will go.
	Failure of electronics	Use an OR illuminator for the surgical field. Contact the service department.
	Switched off by the micro switch on the suspension system	Move the suspension arm into the working position.

TROUBLESHOOTING TABLE (continued)

PROBLEM	POSSIBLE CAUSE	REMEDY
	Thermal cut-off in the lamp housing is contaminated.	Clean the thermal cut-off with a dry brush; blow it clean if necessary.
	Defective fan. Failure of system electronics.	Contact the service department. Illuminate the surgical field with an OR illuminator.
Up and down movement of the suspension system too stiff	Friction adjustment screw on the suspension system tightened too firmly	Loosen the friction adjustment screw on the suspension system as required.
Microscope unstable	Wheel brakes not applied	Apply the brakes.
No image visible in the field of view	Magnification changer not properly indexed	Index the magnification changer properly.

DISPOSAL

Dispose of the device in accordance with locally applicable laws and regulations.

SPECIFICATIONS

Technical Data (Specifications)

Binocular tubes:	0–210° tiltable ergo head, IPD 48–75 mm
Eyepieces:	WF 10x/16 mm with eye guards; optional WF 12.5x/16 mm
Apochromatic magnichanger:	0.4x, 0.6x, 1.0x, 1.6x and 2.5x
Objective:	f = 200 mm, motorized fine focus; optional: f = 175 mm, motorized fine focus
Light source:	50 W LED
Maximum wattage:	200W
LED specification:	3.7 V, 13.5 A
Built-in filters:	Green and blue
Maximum arm extension:	1125mm
Vertical movement of arm:	550mm
Microscope carriers: X-Y travel Z-axis travel	Motorized XY travel and Z-axis focus control 50 x 50 mm 40mm
Foot control:	6-speed foot control
Accessories:	Assistant binocular attachment, double beam splitter 50:50 and 80:20/70:30; CMO 175 fixed, CMOS adapter
Type:	Floor stand
Base (dimensions):	600 mm width 620 mm length
Stand height:	1733mm
Weight of complete microscope:	Approx. 90 kg
Stand height in horizontal position:	1100mm

Guidance and Manufacturer's Declaration

Electromagnetic Emissions

All Equipment and Systems

Guidance and Manufacturer's Declaration - Electromagnetic Emissions

The Prima OPH is intended for use in the electromagnetic environment specified below. The customer or user of the Prima OPH should ensure that it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment Guidance
RF Emissions CISPR 11	Group 1 Class A	The Prima OPH uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
Harmonics IEC 61000-3-2	Class A	The Prima OPH is suitable for use in all establishments other than domestic establishments and those directly connected to the public low-voltage power network that supplies buildings used for domestic purposes.
Flicker IEC 61000-3-3	Complies	

GUIDANCE TABLES

Guidance and Manufacturer's Declaration

Electromagnetic Immunity

All Equipment and Systems

Guidance and Manufacturer's Declaration - Electromagnetic Immunity

The Prima OPH is intended for use in the electromagnetic environment specified below. The customer or user of the Prima OPH should ensure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
ESD IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are synthetic, the relative humidity should be at least 30%.
EFT IEC 61000-4-4	± 2 kV mains ± 1 kV I/Os	± 2 kV mains ± 1 kV I/Os	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential ± 2 kV common	± 1 kV differential ± 2 kV common	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, dropouts, IEC 61000-4-11	>95% Dip for 0.5 Cycle 60% Dip for 5 Cycles 30% Dip for 25 Cycles >95% Dip for 5 Seconds	>95% Dip for 0.5 Cycle 60% Dip for 5 Cycles 30% Dip for 25 Cycles >95% Dip for 5 Seconds	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Prima OPH requires continued operation during power mains interruptions, it is recommended that the Prima OPH be powered from an uninterruptible power supply or battery.
Power frequency 50/60 Hz magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be those of a typical commercial or hospital environment.

GUIDANCE TABLES

Guidance and Manufacturer's Declaration

Electromagnetic Immunity

Equipment and Systems that are NOT Life-Supporting

Guidance and Manufacturer's Declaration – Electromagnetic Immunity

The Prima OPH is intended for use in the electromagnetic environment specified below. The customer or user of the Prima OPH should ensure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic environment guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	(V1) = 3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the Prima OPH, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Radiated RF IEC 61000-4-3	80 MHz to 2.5 GHz @ 3 V/m	(E1) = 3 V/m	**Recommended Separation Distance:** **$d=(3.5/V1)\sqrt{P}$** **$d=(3.5/E1)\sqrt{P}$** **80 to 800 MHz** **$d=(7/E1)\sqrt{P}$** **800 MHz to 2.5 GHz** Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol. 

Note 1: At 80 MHz and 800 MHz, the higher frequency range applies. Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people. *Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast, cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the ME equipment or ME system is used exceeds the applicable compliance level, the ME equipment or ME system should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the ME equipment or ME system. *Over the frequency range 150 kHz to 80 MHz, field strengths should be less than [V1] V/m.

GUIDANCE TABLES

Recommended separation distance between Portable and Mobile RF Communications equipment and the Prima OPH for ME equipment and ME systems that are not life-supporting.

Guidance and Manufacturer's Declaration - Electromagnetic Immunity

Recommended separation distance between portable and mobile RF communications equipment and the Prima OPH

The Prima OPH is intended for use in electromagnetic environments in which radiated RF disturbances are controlled. The customer or user of the Prima OPH can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Prima OPH as recommended below, according to the maximum output power of the communication equipment.

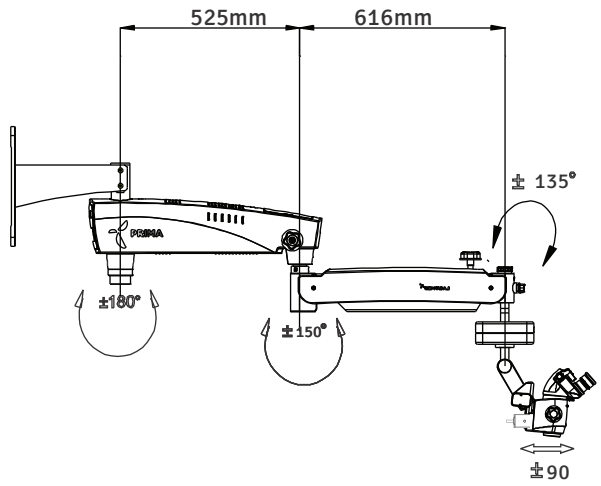
Max Output Power of Transmitter (W)	Separation (m) 150 kHz to 80 MHz d=(3.5/V1)√P	Separation (m) 80 to 800 MHz d=(3.5/E1)√P	Separation (m) 800 MHz to 2.5 GHz d=(7/E1)√P
0.01	0.1166	0.1166	0.2333
0.1	0.3689	0.3689	0.7378
1	1.1666	1.1666	2.3333
10	3.6893	3.6893	7.3786
100	11.6666	11.6666	23.3333

For transmitters rated at a maximum output power not listed above, the recommended separation distance (d) in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

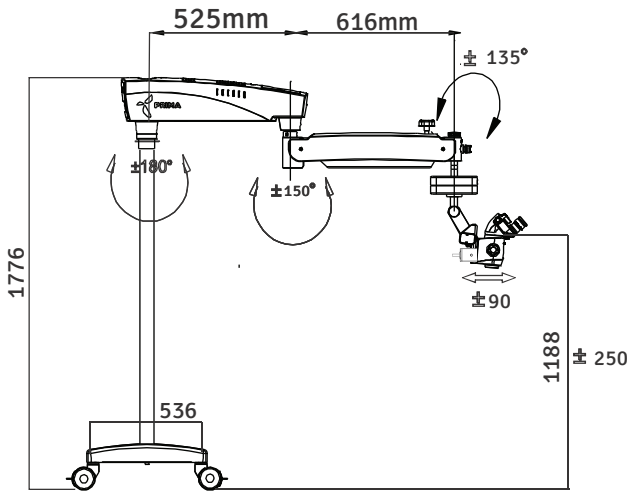
Note 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies. Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

DIMENSIONS

Wall Mount



Floor Mount



GLOSSARY

Ametropia Compensation	Compensation of nearsightedness or farsightedness. This can be done for each eye with the two individual eyepieces (range: +5 to -5 diopters).
Working distance	Distance from the front lens to the object plane (250 mm).
Color temperature	The color characteristic of a light source. Color temperature describes a light source as warm or cold relative to natural light. Its unit of measure is the kelvin (K).
Light field diameter	The size of the field illuminated at a distance of 250 mm.
Field of view diameter	The visible area of an object that can be seen through the microscope. The greater the magnification, the smaller the field of view, and vice versa.
Green filter	Green filters in the ophthalmic microscope make red tissue (blood vessels) and the pink tissue of the optic nerve appear gray. The green filter is also known as a red-free filter.
Blue filter	The blue filter is used with fluorescein stain. The dye pools in areas where the corneal epithelium is broken or absent; it absorbs blue light and emits green.
Illumination intensity	The luminous flux from a light source onto a given area. Its unit of measure is the lux (lx).
LED	Light-emitting diode. An electronic semiconductor device that emits light when an electric current passes through it.
Eyepiece	The optical part facing the eyes, through which the enlarged image produced by the microscope is viewed.
Convergent beam path	The light beams for the right and left eye converge at a point 250 mm in front of the front lens. This distance corresponds to the working distance. The eye therefore does not have to focus on this point by itself, as it does with a parallel beam path.
DSLR Camera	(Digital single-lens reflex) camera with a digital imaging sensor.
CCD Camera	(Charge-coupled device) camera with a technology that stores a charge and moves it out of the photo sensor in an organized way.
CMOS Camera	(Complementary metal-oxide semiconductor) camera in which the image sensor is a silicon chip that captures and reads light.
DBS	(Double beam splitter) splits the light beam in two directions (to the eyes and to the side port) for simultaneous viewing and photography, videography or co-observation. The light is distributed 70% to the eyes and 30% to the side ports for photography, videography and co-observation.

WARRANTY

This product is warranted by LABOMED against defects in material and workmanship under normal use for a period of one year from the date of invoice to the original purchaser. (An authorized dealer shall not be considered the original purchaser.) Under this warranty, LABOMED's obligation is to repair or replace the defective part or product at LABOMED's discretion.

This warranty applies to new products and does not apply to a product that has been tampered with, altered in any way, misused, damaged by accident or negligence, or that has had the serial number removed, altered or effaced. Nor shall this warranty be extended to a product installed or operated in a manner not in accordance with the applicable LABOMED instruction manual, nor to a product that has been sold, serviced, installed or repaired other than by a LABOMED factory or an authorized LABOMED dealer.

All claims under this warranty must be made in writing to the LABOMED factory or to the authorized dealer that made the original sale of this device, and must be accompanied by a copy of the purchaser's invoice.

This warranty is in lieu of all other warranties, express or implied. All implied warranties of merchantability or fitness for a particular use are hereby disclaimed. No representative or other person is authorized to assume any other obligations for a LABOMED product. LABOMED shall not be liable for any special, incidental or consequential damages for any negligence, breach of warranty, strict liability, or any other damages resulting from or relating to the design, manufacture, sale, use or handling of the product.

PRODUCT CHANGES

LABOMED reserves the right to make changes in design or to make additions to or improvements in its products without obligation to add such to products previously manufactured.

CLAIMS FOR SHORTAGES

We use extreme care in selecting, checking, rechecking and packing to eliminate the possibility of error. If any shipping errors are discovered:

1. Carefully go through the packing material to make sure nothing was inadvertently overlooked when the unit was unpacked.
2. Call the dealer from whom you purchased the product and report the shortage. The materials are packed at the factory, and nothing should be missing if the box has never been opened.
3. Claims must be filed within 30 days of purchase.

CLAIMS FOR DAMAGES IN TRANSIT

Our shipping responsibility ends with safe delivery in good condition to the transportation company. Claims for loss or damage in transit should be made promptly and directly to the transportation company.

If, on delivery, the outside of the packing case shows evidence of rough handling or damage, ask the transportation company's agent to note "Received in Bad Order" on the delivery receipt. If, within 48 hours of delivery, concealed damage is found when unpacking the shipment and there is no exterior evidence of rough handling, ask the transportation company to make out a "Bad Order" report. This procedure is necessary for the dealer to maintain the right of recovery from the carrier.

Liability release for wall and/or ceiling installations:

By signing below, the purchaser confirms that the correct and secure installation of the mounting plates and hardware for the LABOMED Prima microscope(s) purchased is the sole responsibility of the purchaser and the appointed contractor, and will comply with applicable building codes and good practice. Labo America, Inc. and all of its affiliates will be held harmless and will not bear any liability for damage and/or injury caused by improperly installed and secured mounting plates and hardware.

Purchaser's name and address:

Project location (if different from the above):

Licensed contractor/company name and details (address, license no., phone number):

Client Signature:

Contractor Signature:

Date:

Date:

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Revision History

Rev. No.	Date of Release	DCR #	Change	App. By
1.4	June 15, 2019	DCR/20A/19	System Diagram updated as per marketing brochure	S.Bal
1.5	June 14, 2020	DCR/20A/19		S.Bal
1.6	July, 2020		cleaning and disinfection	S.Bal
1.7	Feb , 2022	DCR/05/22	Add Wall Mount Information	S.Bal
1.8	May , 2023	DCR/09/23	Vertical Wall Mount Details Added	S.Bal
1.9	Aug, 2024	DCR/11/2024	Regulatory Information	S.Bal
2.0	Sep, 2024	DCR/12/2024	Symbols updated per EU MDR 2017/745 & ISO 15223	S Bal
2.1	Jan, 2025	DCR/01/2025	Max. Safe load Symbol added	S.Bal
2.2	**Mar, 2025**	**DCR/07/2025**	**added wall mount diagrams for more clarification**	**S.Bal**
2.3	June,2025	DCR/14/2025	corrected (MDR Regulation (EU) 2017/745 and caution for fibre optic cable indexing added	S.bal
2.4	July,2025	DCR/**16**/2025	silicone cover instructions added	S.bal
2.5	Feb,2026	DCR/**04**/2026	IP Code added	S.bal

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ideas for vision

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