



PLANET
LIGHTING



PHANTOM

INSTALLATION MANUAL

1.0 INTRODUCTION

Please read this manual carefully before proceeding to correctly install the product, so as to protect “the Service Personnel” and “the Operator” from any injury. The manual contains the drawings relating to each installation task.

This appliance is a Class 1 medical device pursuant to AS/NZ standards 3200-2-41 (IEC 60601-2-41).

CONFORMITY

The manufacturer declares that this Product is in compliance with AS/NZ standards 3200-2-41 (IEC 60601-2-41).

VALIDITY OF MANUAL

This installation manual is valid for the following models:

- Phantom - wall mount
- Phantom - ceiling mount

CUSTOMER SERVICE

The Planet Lighting after-sales service is at your disposal for any further details you might require regarding the Product, its packaging, its transport and its installation and for any requests for technical and electrical diagrams:

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TRANSLATIONS

The original language of this manual is English. For all other translations, reference must be made to the original manual language.



1.1 GLOSSARY OF TERMS

TERM	DEFINITION
PRODUCT	THE EM (Electro-Medical) EQUIPMENT to which this manual refers is the Planet Model 'Phantom' examination/Minor procedure light. For ease of description, in this manual this EM EQUIPMENT will be called "Product".
OPERATOR	Person handling the equipment (e.g., professional health personnel, nonexpert person assisting the patient).
RESPONSIBLE ORGANIZATION	Entity accountable for the use and maintenance of an EM equipment or EM system (e.g., a hospital, an individual doctor or a non-expert person). Preparation and training are included in use.
SERVICE PERSONNEL	Individuals or entities accountable to the responsible organisation that installs, assembles, maintains or repairs the equipment. In certain circumstances, the safety of such persons depends on their knowledge and training and ability to take appropriate precautions when gaining access to hazardous parts of The Product assembly. By way of example only, the following professional figures are deemed as SERVICE PERSONNEL: • Construction Engineer, Draftsman, Building firm duly registered in the professional Register • Electrical Engineer, or other Electro-technical expert qualified to work as an electrician (for the electrical works) For the installation phase, as regards assembly operations only, a qualified person is deemed whosoever has attended a course organised by Planet Lighting or, alternatively, whosoever has carefully read the manual.



1.2 WARNINGS AND SAFETY NOTICES

WARNING	This manual is an integral part of the Product as indicated by AS/NZ standards 3200-2-41 (IEC 60601-2-41 and subsequent amendments and supplements. Read and keep this manual close to the Product.
WARNING	The Product is not suitable for use in premises where explosion risks exist. The Product is not suitable for use wherever there are inflammable mixes of anaesthetics with air, oxygen or N ₂ O nitrous oxide.
WARNING	Planet Lighting disclaims all liability for any injury to persons or damage to things caused by the Product having been installed by persons who are not "SERVICE PERSONNEL".
WARNING	The RESPONSIBLE ORGANISATION is entirely responsible for Product installation activities; no costs or responsibilities relating to the installation and/or commissioning of the Product may therefore be traced back and/or in any case attributed to Planet Lighting.
WARNING	The ceiling or wall structural works for Products to be installed on ceilings or walls, and the electrical works for supplying power to the Product shall be carried out in a workmanlike manner by SERVICE PERSONNEL to ensure these are sturdy and safe.
WARNING	The electrical system in the premises must conform to the applicable local standards, and any national regulations. A master switch must be installed with fuse or thermal magnetic circuit breaker to be able to interrupt power to the Product. DANGER – Electric shock risk To avoid any risk of electric shocks, the Product must only be connected to mains supplies with earth protection.

2.0 GENERAL INFORMATION

This installation manual describes how to install, maintain and operate the Planet Model 'Phantom' Examination/Minor procedure light (referred to throughout this document as the 'Product'). Prior to installation carefully read through all the instructions enclosed in this manual.

The Phantom Light Complies with AS/NZ standards 3200-2-41 (IEC 60601-2-41)



2.1 PRODUCT DEFINITION

The Product is a state of the art Examination/Minor procedure light which uses cutting-edge Solid State Lighting technology. Designed and manufactured in Australia by Planet Lighting (established 1911) an R&D driven, exporting designer and manufacturer with over 10 years experience in the design, manufacture and supply of Solid State Lighting devices worldwide.

The Planet Phantom provides an improved working environment, significantly reducing ongoing maintenance, with low operational costs and offers a “greener” alternative to similar products. The Planet model Phantom allows the accurate positioning of the lamp head above any work surface. It is designed to be mounted on a wall or ceiling and be pulled down from above when required, remaining there until repositioned.

At Planet we take great pride in the design and production of our lights and we are sure you will derive satisfaction from owning and using our products. When installed and maintained in accordance with the instructions contained in this service leaflet, this product will provide many years of trouble-free operation.

Should you have any enquiry, comment or special lighting need we would like to hear from you. We back our products with pride, service and a five year warranty.

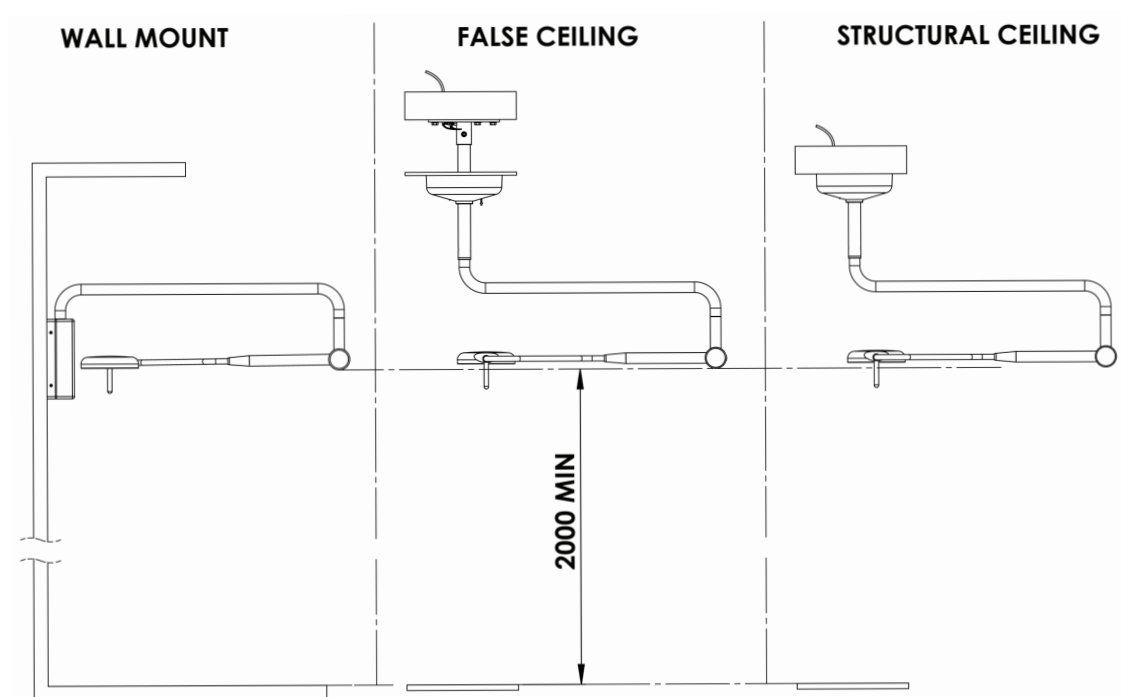


Fig 1.0



2.1 OPERATOR QUALIFICATION

The following qualification requirements are based on the definitions given under the 'Glossary of Terms' section on page 3. The qualification requirements for various tasks relating to the Product are as follows :

Installation:	SERVICE PERSONNEL
Use:	OPERATOR
Cleaning:	OPERATOR
Routine maintenance:	SERVICE PERSONNEL
Special maintenance:	SERVICE PERSONNEL
Disposal:	RESPONSIBLE ORGANISATION and SERVICE PERSONNEL

2.2 ENVIRONMENTAL CONSIDERATIONS

2.2.1 PACKAGING

Cardboard boxes containing Product. Dispose of these in compliance with national directives applicable for waste disposal.

2.2.2 TRANSPORT

Product transport is done by land, sea or air according to the following characteristics:

Temperature (°C):	-15 / +60
Humidity:	10 / 75 %
Atmospheric pressure (hPa):	500 / 1060

2.2.3 STORAGE

The packaged Product must be stored (warehoused) in dry premises having the following characteristics:

Temperature (°C):	-15 / +60
Humidity:	10 / 75 %
Atmospheric pressure (hPa):	500 / 1060

2.2.4 PLACE OF INSTALLATION

The premises where the product is started up must have the following characteristics:

Temperature (°C):	+10 / +40
Humidity:	30 / 75 %
Atmospheric pressure (hPa):	700 / 1060

2.2.5 RECYCLING

Design of the Product takes into account the materials used in the manufacture of components. This is to ensure when it reaches its end of life, the disposal method with the lowest or least negative impact, on human health and the environment is selected.

Unlike the sources of traditional light, LED's do not contain mercury, toxic gases, filaments or fragile parts. Due to the fixture being over 95% recyclable and there being no Bulbs/Globe changing during the LED life of 50,000+ hours, your environmental footprint will be significantly reduced.

When your Product reaches the end of its life, contact Planet Lighting or our local agents to learn about recycling options. The Phantom light must be disposed of properly according to local laws and, regulations.



2.3 GRAPHIC SIGNS AND SYMBOLS USED IN THE INSTALLATION MANUAL

The following safety measures must be put in place during Product installation, use and servicing. To emphasise their importance, a number of safety precautions are repeated throughout the manual. Follow the safety precautions before using or repairing the Product. Carefully abiding by the safety precautions improves the ability to use the Product safely and correctly and helps prevent incorrect maintenance which could be hazardous and cause damage. The safety measures are

approximate and not exhaustive; the Operator, the Responsible Organization and the Service Personnel must develop their capacities to upgrade and integrate them.

Indications such as DANGER, WARNING and CAUTION, preceded by the symbol  indicate the level of risk to which the SERVICE PERSONNEL, the RESPONSIBLE ORGANIZATION and the PRODUCT could be exposed.

DANGER: indicates an immediately hazardous situation which could result in death or serious injuries.

WARNING: indicates a potentially hazardous situation that could result in death or serious injuries.

CAUTION: indicates a potentially hazardous situation which could result in moderate or light injuries and Product damage.



This triangular symbol together with the explanation alongside (shown above) indicates the type of hazard to be dealt with.

2.4 GRAPHIC SYMBOLS USED ON PACKAGING

The following table lists the common symbols used by Planet Lighting on our packaging.

DESIGNATION	SYMBOL	DESCRIPTION
THIS SIDE UP		Package must always be transported, handled and stored with the arrows always pointing upwards.
FRAGILE		The cargo is easily broken or damaged. Cargoes marked with this symbol should be handled carefully and should never be tipped over or slung.
TWO PERSON LIFT		Cargo with this symbol weighs in excess of 20kg. For personal safety these items should only be lifted mechanically, or by two or more people.



2.5 GRAPHIC SYMBOLS USED ON THE PRODUCT

Below are the symbols to be found on the Product:

DESIGNATION	SYMBOL	DESCRIPTION
POSITIVE	+VE	Connect positive wire here
NEGATIVE	-VE	Connect negative wire here.
ACTIVE/LIVE	L	Connect active/live wire here
NEUTRAL	N	Connect neutral wire here
EARTH		Connect earth wire here
DATE OF MANUFACTURE		Date of manufacture (Month/Year)
MANUFACTURER		Manufacturers address
READ OPERATING MANUAL		Compulsory to read the operating manual

2.6 WARRANTY AND LIABILITIES

Planet Lighting disclaims all liability with regard to unreliable Product operation in the following cases:

- Installation, authorised modifications and repairs have not been performed by SERVICE PERSONNEL
- The Product has not been used for its intended purpose and in conformity with the operating instructions (see operation manual).
- The premises have not been approved for healthcare activities
- The premises are not built in conformity with the law and applicable regulations
- The electrical system in the premises is not in compliance with appropriate requirements

2.7 STRUCTURAL CHANGES OR VARIATIONS

No arbitrary structural changes or variations to the Product are admitted. Any modifications must have the prior written authorisation of Planet Lighting. In case of the Product having been tampered with, the warranty shall be invalidated and the manufacturer disclaims all liability for any injuries or damage caused to the OPERATOR, the RESPONSIBLE ORGANISATION and the SERVICE PERSONNEL.



3.0 PLANNING

3.1 PREPARING THE PREMISES STRUCTURALLY

WARNING – SAFE STRUCTURAL WORKS

The structural works for preparing the ceiling to install the Product must be sturdy and safe and completed in a workmanlike manner, according to applicable building regulations.

By way of example only, the professional persons charged with completing the structural works could be: Construction Engineer, Structural engineer, or a Builder, duly registered in the respective professional register.

DANGER – WRONG WALL PERFORATION

In case of wrong perforation of the Product supporting wall (e.g., the breakage of a reinforced-concrete ceiling/wall iron) always inform the building manager as this could affect the stability of the building.

WARNING – CEILING AND WALL STRUCTURAL CAPACITY

Following are the structural loadings and approx product weights. The listed weights and loads are static only, and as such do not include any dynamic loads or externally applied loads such as operator handling. For similar detail, you may also refer to Fig 2.0 for Ceiling, and Fig 15.0 for Wall mounted versions:

Structural capacity requirements – Ceiling Mounted

Total Mass - structural ceiling fitting only:	10.6kg
Mass - arm only:	6.3kg
Torque (at mounting plate):	63Nm

Structural capacity requirements – Wall Mounted

Total Mass - structural fitting only:	10.22kg
Mass - arm only:	6.3kg
Torque (at mounting plate):	69Nm

The Product installation premises must conform to local building standards.

After making sure the premises used for medical purposes are in conformity with the above requirements, proceed to mechanically anchor the ceiling and wall plate, assessing the type of building and making all consequent adaptations.

THE SERVICE PERSONNEL have all technical, civil and legal responsibilities relating to correctly and suitably performing Product anchoring and installation operations in an adequate manner.



3.2 CORRECTLY WIRING THE PREMISES

DANGER – SAFE WIRING INSTALLATIONS

The premises used for medical purposes must be safely wired in a workmanlike manner by SERVICE PERSONNEL to power the Product.

DANGER – ELECTRICAL ENVIRONMENT IN COMPLIANCE WITH THE LAW

Before installing the Product, the SERVICE PERSONNEL must make sure the following conditions exist:

- The wiring system of the environment (premises) in which installation is made must conform with regulations for premises used for medical purposes and with applicable national laws and/or regulations.
- The electrical system must have a certificate of conformity issued by whosoever installed it.
- The earth system must be certified as required by applicable regulations.

4.0 INSTALLATION

The Planet Model Phantom arm is designed to be mounted above the immediate work area. Standard mounting fixtures for Planet Model Phantom are: Ceiling Mount & Wall Mount (specialised mountings are available on application). For mounting, please use the relevant Ceiling or Wall Mount Template document provided on our website – see PHANTOM MOUNTING TEMPLATES.

NOTE: Before using these templates, ensure the scale and measurements have printed accurately to avoid any installation errors caused by incorrect printer settings. In all cases the suggested mounting height (measured at swivel head) is two metres from floor level, as seen in Fig 1.0.

4.1 CEILING MOUNT

WARNING

The qualified electrician who is responsible for the installation of the Phantom must include an isolation switch(all -pole disconnection) in the fixed wiring of the Phantom and a cable tie near the terminal block of the primary(240V) wiring (Phase and Neutral) to secure the cables.

STRUCTURAL LOADS – CEILING MOUNT:

The structural integrity of the mounting surface is the responsibility of the installer. Structural loads are as follows:

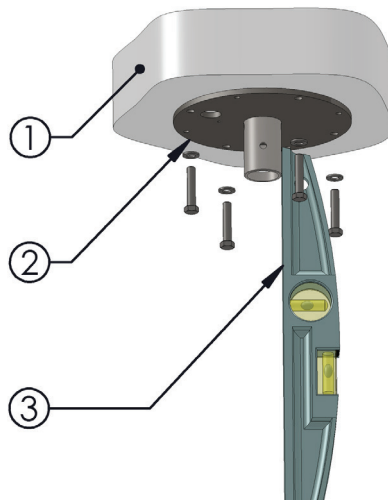


Fig. 3.0



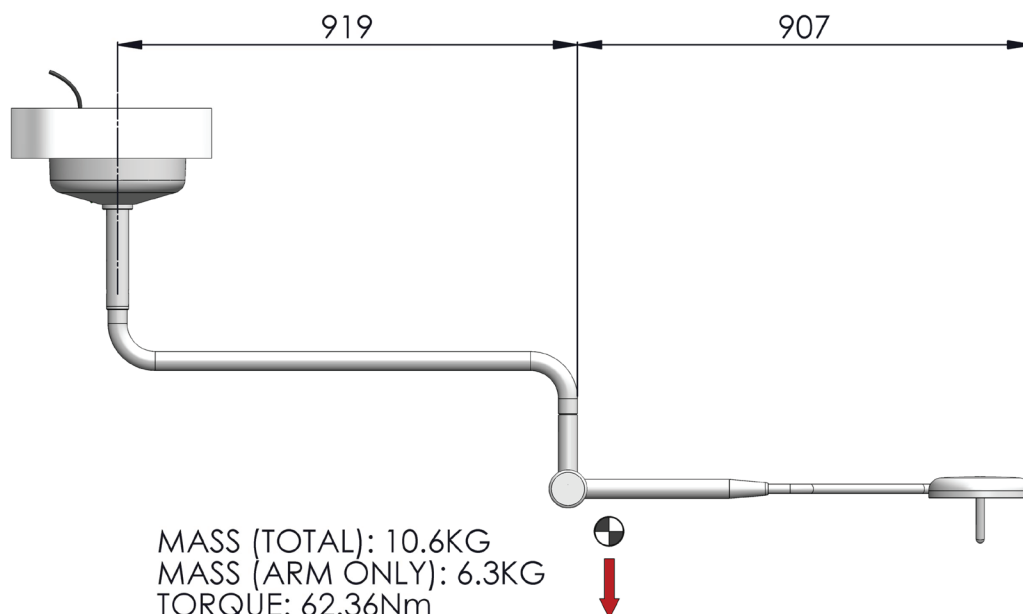


Fig. 2.0

4.1.1 MOUNT CEILING PLATE - AND LEVEL

Use the Phantom Ceiling Template (refer 4.0 Installation) to mark out the hole locations for the ceiling plate.

1. Installer must ensure sufficient structural integrity of the mounting surface (Refer to 3.1).
2. Fix the ceiling plate to the structural ceiling using suitable fixings (to be selected by the installer).
3. It is very important that the installer ensures the mounting plate and collar are level. This will ensure that the centre axis of the mounting collar is plumb, and the light is balanced.

NOTE: If ceiling tube is the pre-welded type, please go to section 4.1.5

4.1.2 DETERMINE THE CEILING TUBE LENGTH

2600	160
2650	210
2700	260
2750	310
2800	360
2850	410
2900	460
2950	510
3000	560
3050	610
3100	660
3150	710
3200	760
3250	810
3300	860
3330	910

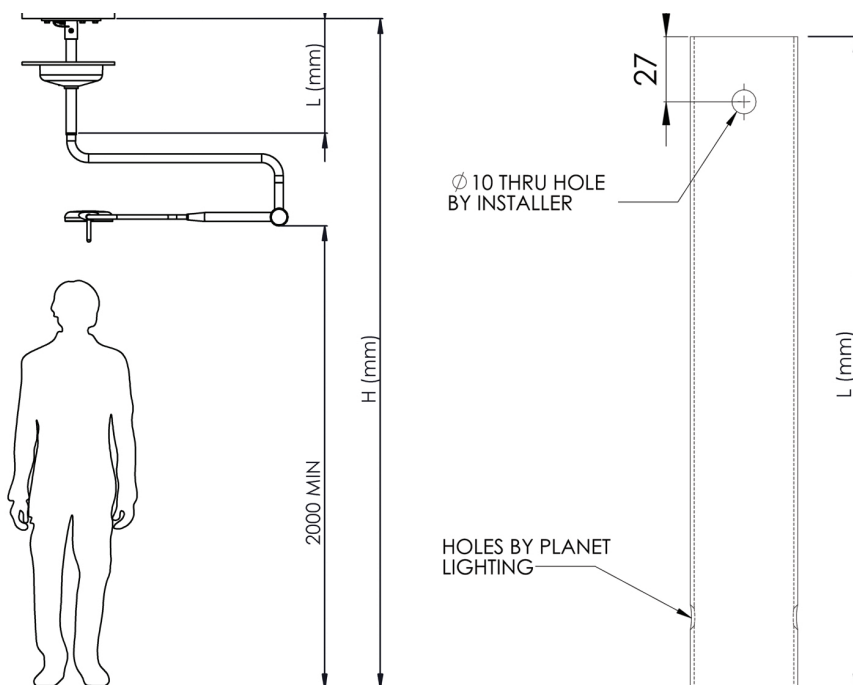


Fig. 4.0

4.1.3 CUT CEILING TUBE TO LENGTH

WARNING

Do not cut tube end with countersunk holes

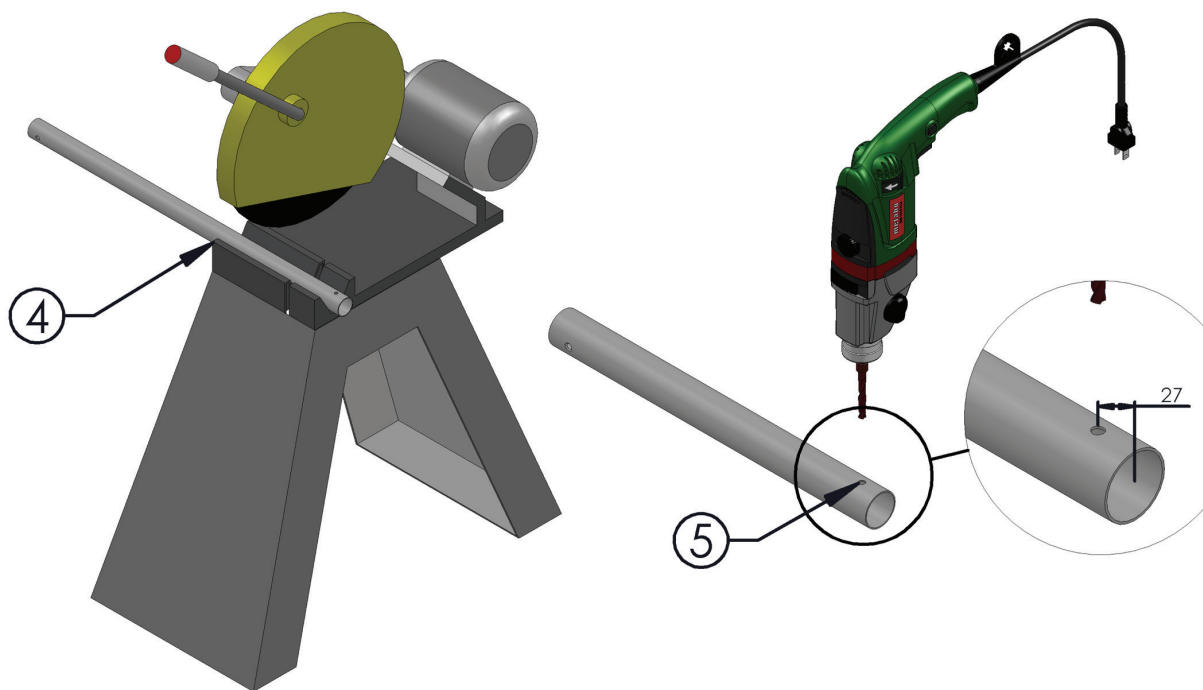


Fig. 5.0

4. Cut ceiling tube to length, based on the table in Fig. 4.0

5. Measure, and drill 10mm through-hole for the locking bolt, as shown in Fig. 5.0.

4.1.4 PRE CEILING FIT OUT

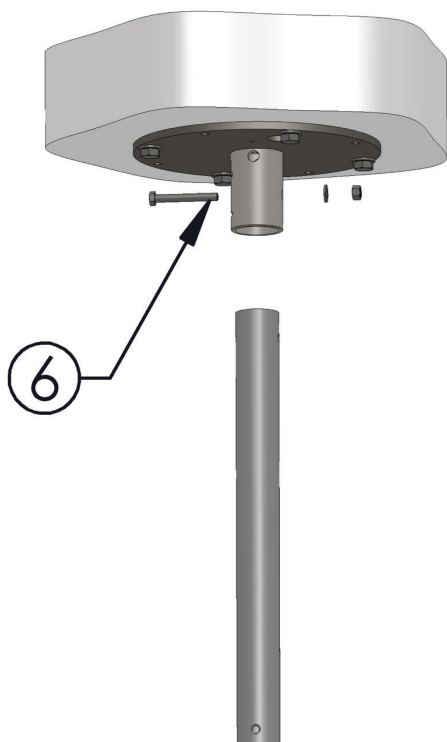


Fig. 6.0

6. Assemble ceiling tube to ceiling plate, with the locking bolt and nut, as shown in Fig. 6.0

7. Reticulate 240V power to the power supply mounting location in accordance with local standards and regulations. Attach the mounting plate earth, and reticulate power to the mounting location, as shown in Fig 7.0.

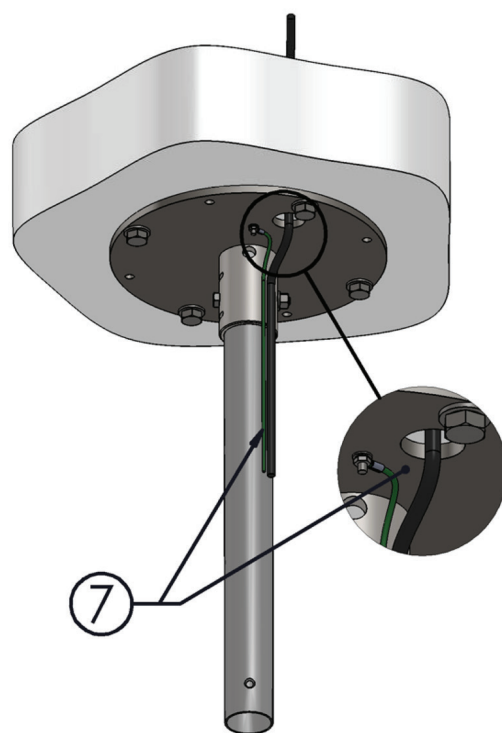


Fig. 7.0

4.1.5 RETICULATE POWER TO CEILING LEVEL

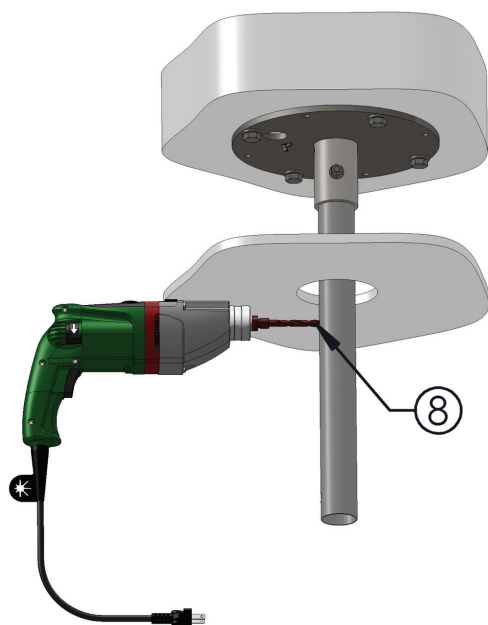


Fig. 8.0

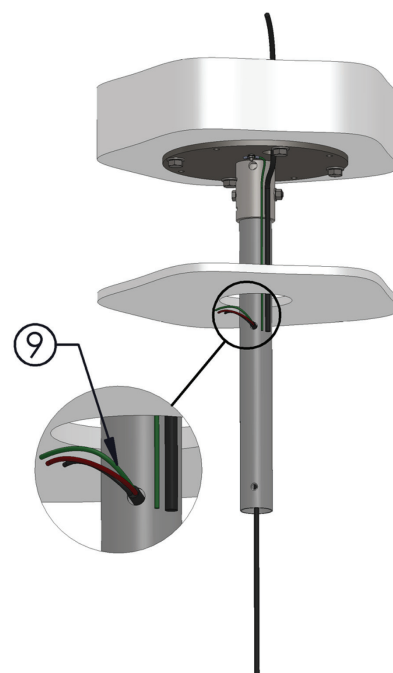


Fig. 9.0

8. Drill cable access hole in the ceiling tube at the sub-ceiling level, as shown in Fig. 8.0. Take care to remove power cords from the drilling area, before drilling.

9. Complete the reticulation of 24V power to the power supply mounting location as shown in Fig 9.0.

4.1.6 POSITION POWER SUPPLY AND TIGHTEN ONTO THE CEILING TUBE

10. Slide power supply into mounting position, as close to the ceiling as possible, as shown in Fig. 10.0.

11. Using the u-bolt, nuts and washers supplied, attach the power supply assembly to the ceiling tube, as shown in Fig. 10.0.

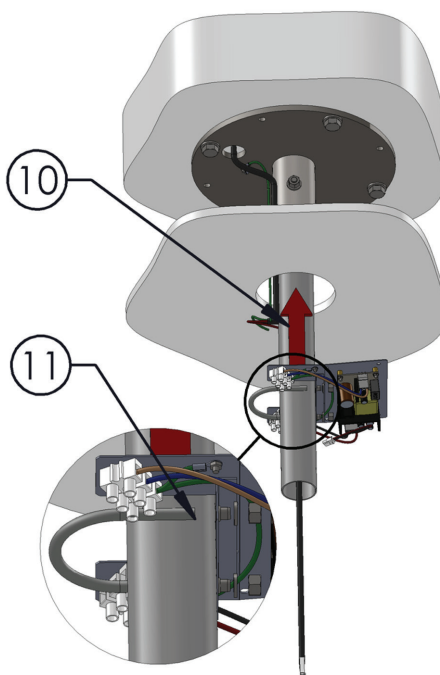


Fig. 10.0



4.1.7 CONNECT POWER

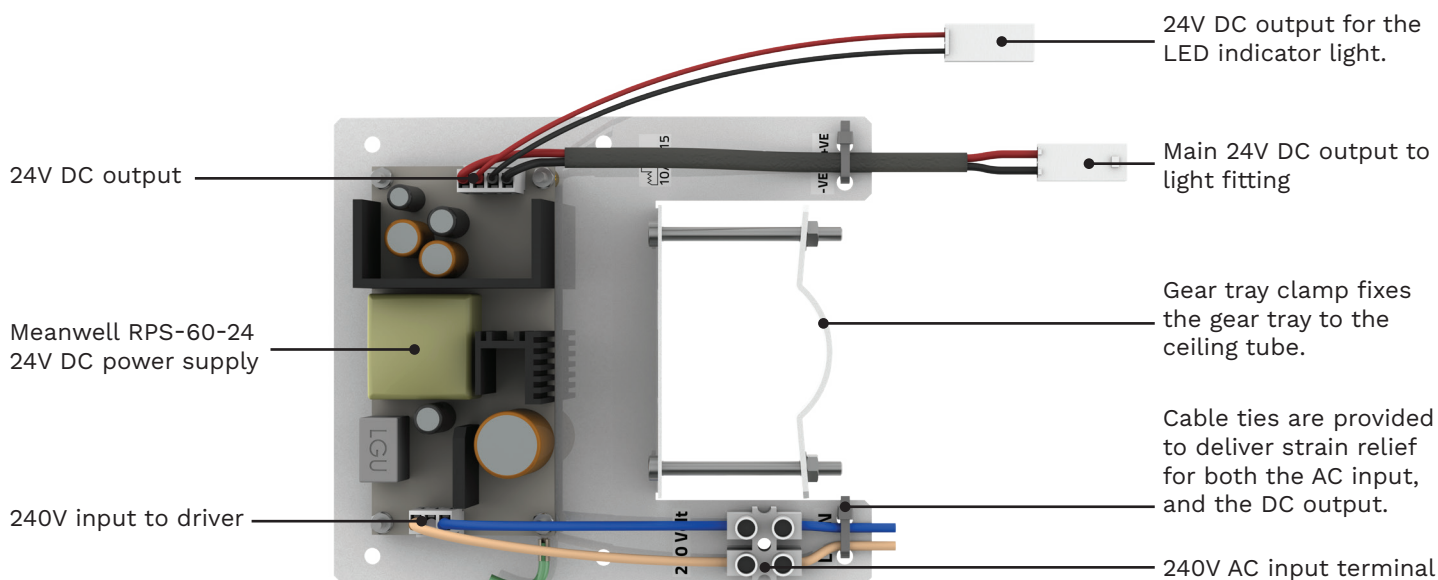


Fig. 11.0

12. Connect the 24V power feed, and earth for the light fitting into the terminal, shown in Fig. 11.0

13. Connect the 240V AC input, and earth into the terminal, as shown in Fig. 11.0.

4.1.8 ATTACH CEILING COVER

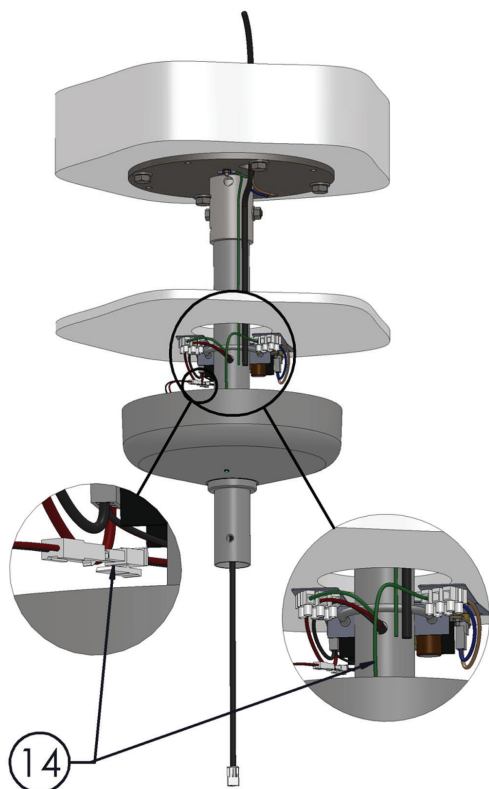


Fig. 12.0

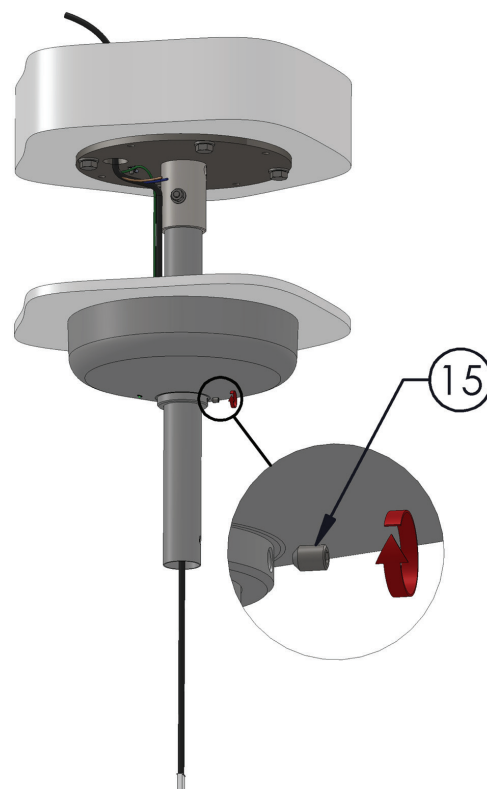


Fig. 13.0

14. Move ceiling cover into place, and connect the 24V DC output for the LED indicator light.



15. Push the ceiling cover up against the ceiling and tighten the grub screw to lock it in place, as shown in Fig.13.0.

4.1.9 ATTACH LIGHT FITTING TO CEILING TUBE

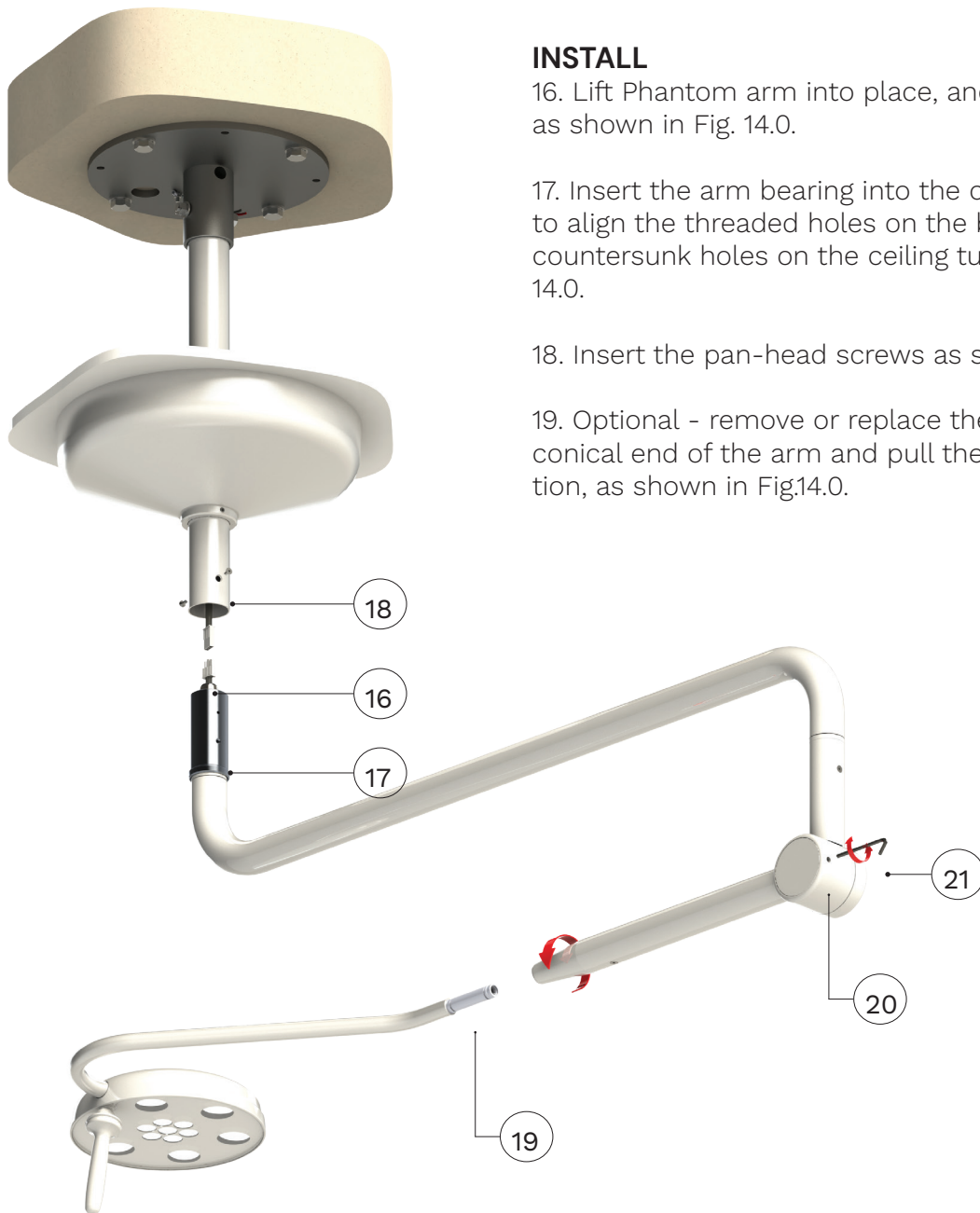


Fig. 14.0

MAINTENANCE ONLY

20. Unscrew the end cap for access to the spring balance adjustment, as shown in Fig. 14.0.

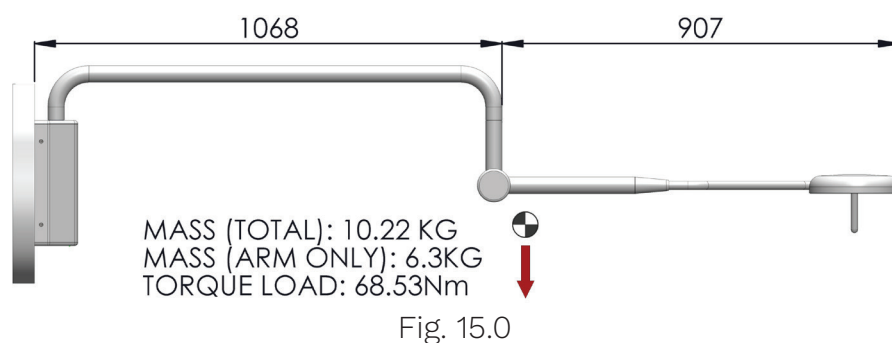
21. Adjust the spring balance: using a 4mm allen key, adjust the screw inside the knuckle. Clockwise/ Tightening the screw will cause heavier engagement of the spring - this will improve 'head droop'. Anti-clockwise/loosening the spring balance will fix a 'rising head' issue, as shown in Fig. 14.0.



4.2 WALL MOUNT

STRUCTURAL LOADS – WALL MOUNT:

The structural integrity of the mounting surface is the responsibility of the installer. Structural loads are as follows:



4.2.1 MARK UP AND MOUNT WALL UNIT

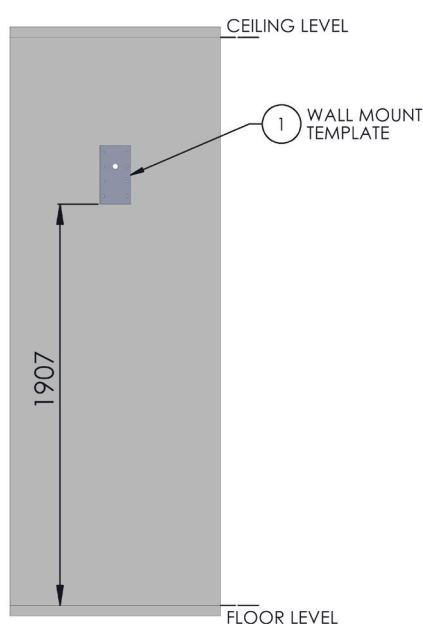


Fig. 16.0

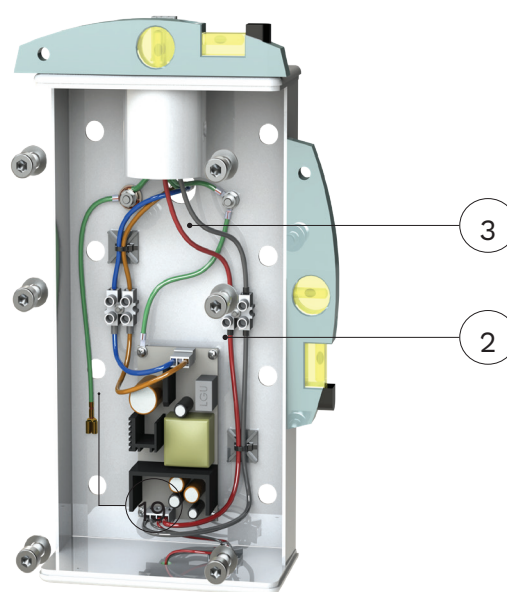


Fig. 17.0

1. Use the Phantom Wall Mount Template (refer 4.0 Installation). Measure up 1907mm from the floor, and align the bottom of the wall mount template with this mark. Position and fix the template into position, ensuring that both edges are level to the vertical and horizontal, as shown in Fig. 16.0. Use the template to mark hole positions for cable access and mounting.
2. Installer to select suitable fixings, and fix the wall unit to the structurally sound wall, ensuring that the unit is level on all edges Fig. 17.0.
3. Reticulate the 240v power to the power supply location, and connect to the fitting at the terminal block as shown in Fig. 17.0.



4.2.2 MOUNT FITTING

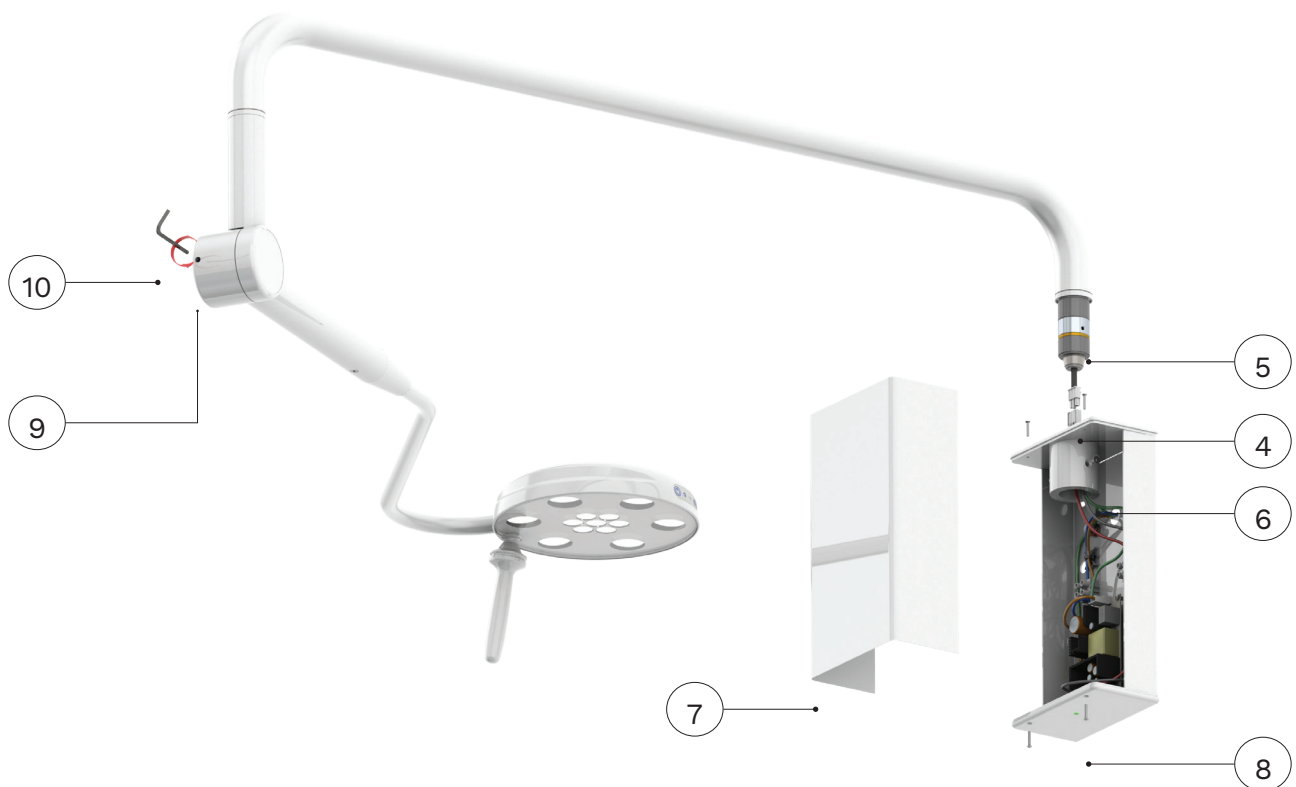


Fig. 18.0

4. Lift Phantom arm into place, and engage the 24V plugs as shown in Fig. 18.0.
5. Insert the arm bearing into the wall unit (taking care to align the threaded holes on the arm side bearing sheath with the corresponding holes on the bearing sheath on the wall unit, as shown in Fig. 18.0.
6. Insert and tighten the two grub screws to complete the fixing of the arm to the wall unit as shown in Fig.18.0.
7. Replace the wall unit cover as shown in Fig. 18.0.
8. Fix in place with the countersunk screws provided, as shown in Fig. 18.0.

4.2.3 MAINTENANCE ONLY

9. Unscrew the end cap for access to the spring balance adjustment, as shown in Fig. 18.0.
10. Adjust the spring balance: using a 4mm allen key, adjust the screw inside the knuckle. Clockwise/Tightening the screw will cause heavier engagement of the spring - this will improve 'head droop'. Anticlockwise/loosening the spring balance will fix a 'rising head' issue, as shown in Fig 18.0.



5.0 OPERATING INSTRUCTIONS

5.1 GENERAL OPERATION

The general operation sequence is as follows:

1. Switch light on
2. Adjust dimming as required
3. Using the handle, position the head of the fitting and direct the light at the target location
4. Perform task
5. Reposition for other tasks if required
6. Turn light off after use

⚠ WARNING: Take care that you DO NOT direct the lighting beam into your eyes (or another's eyes) during operation. Looking directly into this light could cause permanent eye damage.

5.1.1 SWITCH AND DIMMING OPERATION

The Product's lighting functions are controlled via the use of the membrane switch located on the head of the fitting, on the opposite side to the handle. The controls (shown below) offer a simple on/off switch and an additional up/down dimming control. The dimming control allows the user to set the brightness level of all LED's in the head together.



6.0 MAINTENANCE

6.1 MAINTENANCE TASK SCHEDULE

The following periodic maintenance task are recommended for both the Wall, and Ceiling mounted Products:

TASK	DESCRIPTION	FREQUENCY
sterilise handle	Remove handle, and place in an autoclave (or similar sterilisation machine) for sterilisation. See 6.1.1 for more details.	Once per use
clean/disinfect Product	Using a suitable disinfectant, wipe down all exterior surfaces of the fitting. See 6.1.2 for more details.	1 per day
Adjust balance and friction	Adjust the spring tension and friction settings as per instructions in 4.2.3 items 9-11.	1 per 3-12 months (site specific)

6.1.1 STERILISE HANDLE

To sterilise the handle:

1. Pinch the release mechanism of the handle as shown (Fig.19.0)
2. Remove the handle from the fitting (Fig.19.0).
3. Sterilise or autoclave (as per your site procedure).
4. Once handle is sterilised, re-attach the handle to the light fitting (Fig.19).

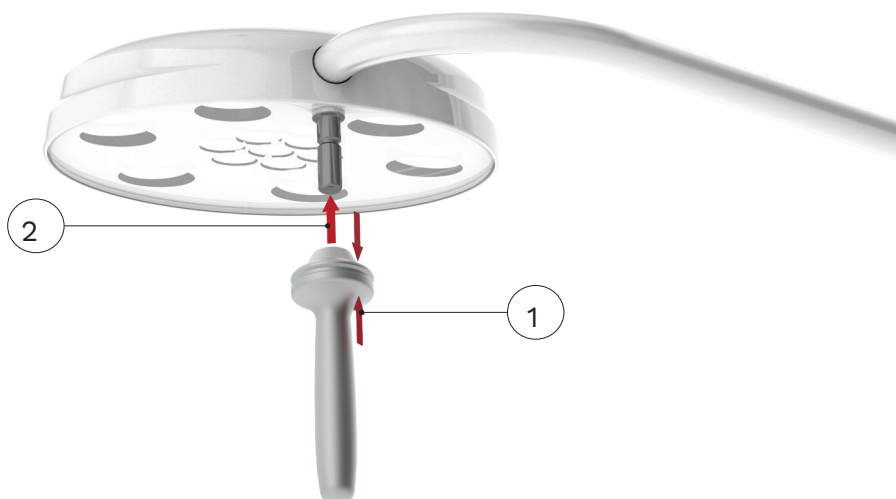


Fig. 19.0

⚠ CAUTION: Heat treated sterilisation processes will result in the handle being quite hot, and may result in burns. Ensure that these handles have cooled to room temperature before re-attaching them to the lights.



6.1.2 CLEANING AND DISINFECTING

⚠ WARNING: Turn off the light and allow to cool before commencing any cleaning.

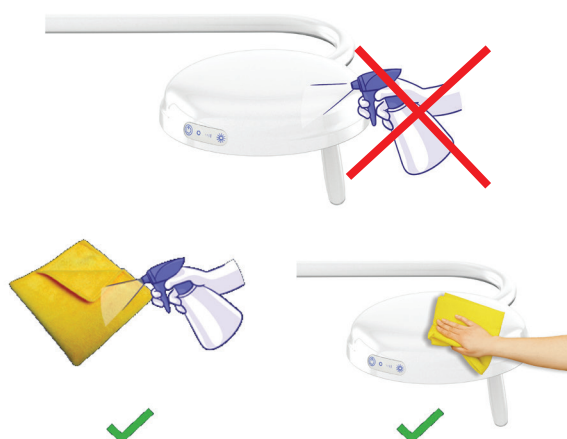
Please use the following procedures and precautions during the cleaning process:

- Let the light cool down. Only disinfect and clean the light and body (including any cables) when it is turned off and cold.
- Apply cleaning solution to the cleaning cloth. Make sure that excess water/cleaning agent has been removed from cleaning cloth before commencing.
- Use a damp cloth. DO NOT use a wet cloth.
- Use alcohol/detergent having medium alkaline level but no active chlorine.

⚠ CAUTION: Do not use abrasive products, petrol, paint thinners, alkaline detergent, acidic cleaning agents or aldehydes. Make sure the proportions of the detergents/cleaning agents are accurate based on manufacturers instructions.

⚠ WARNING: The disinfectants/cleaning agents may contain substances harmful to health: use disinfectants only recommended by your health authorities and follow the manufacturer's user instruction carefully.

⚠ CAUTION: DO NOT spray cleaning solutions directly onto the Product as it may affect product life and performance. Spray onto a cloth and wipe the product (See Fig. 20).



END OF DOCUMENT

Made in Australia Exported to the World

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