

# Vantage Plus

## Instructions



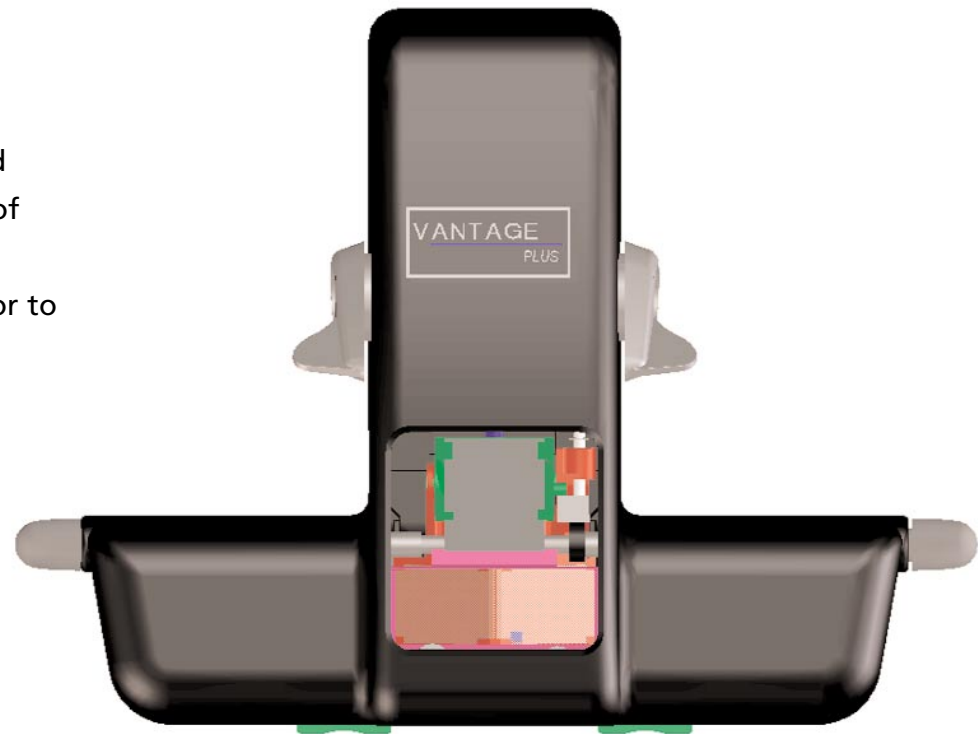
 Keeler

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# Introduction

Thank you for purchasing the Keeler Vantage Plus Indirect Ophthalmoscope.

We have taken the greatest care in the design, development and manufacture of this product to ensure that you get many years of trouble free service. However, it is important that you read the descriptions, installation and operating instructions carefully prior to installing or using your new indirect ophthalmoscope.



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*As part of our policy for continued product development we reserve the right to amend specifications at any time without prior notice.*



# Symbols



Read user instructions for warnings, cautions and additional information.



The CE mark on this product indicates it has been tested to and conforms with the provisions noted within the 93/42/EEC Medical Device Directive.



Double insulated.



Type B protections against shock.

# Warnings and Cautions



## Warning

- Do not use if the product is damaged and periodically inspect for signs of damage.
- Do not use in the presence of flammable gases.
- This product should not be immersed in fluids.
- Do not fit mains power adapter into a damaged mains outlet socket.
- Route power cord safely to eliminate risk of tripping or damage to user.
- There are no user-serviceable parts inside the device. Contact authorised service representative for further information.
- Federal law restricts this device to sale by or order of a physician.
- Do not remove bulb whilst hot.
- Do not disassemble or modify the battery. There are no serviceable parts inside.
- Do not dispose of battery in fire, puncture or short circuit.

- Do not use a battery that is deformed, leaking, corroded or visually damaged. Handle a damaged or leaking battery with care. If you come into contact with electrolyte, wash exposed area with soap and water. If it contacts the eye, seek medical attention immediately.



## Caution

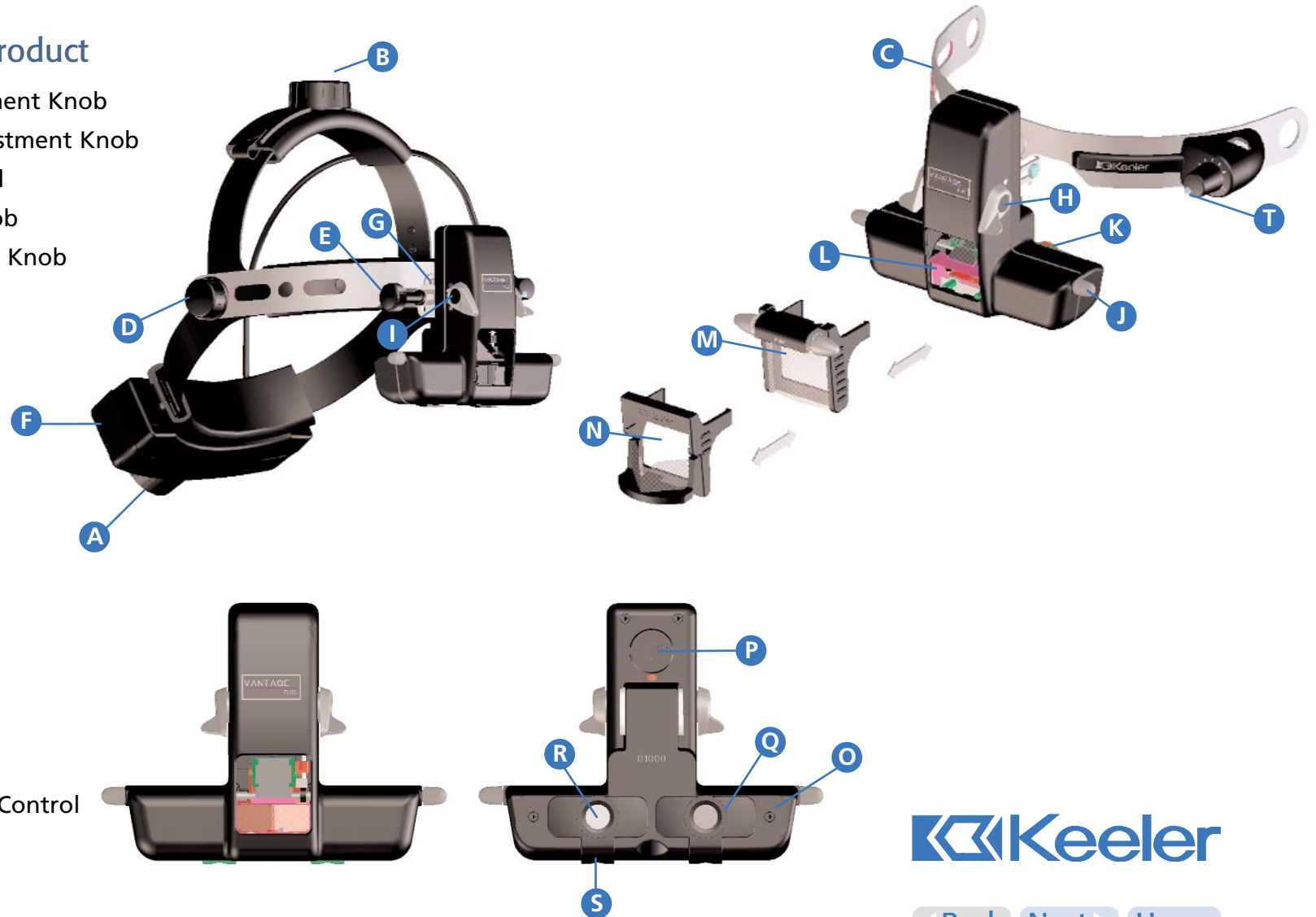
- The product has been designed to function safely when at an ambient temperature between +10°C and 35°C.
- Use only Keeler power supply.
- Dispose of battery in line with local regulations on recycling batteries.
- Keep out of reach of children.
- To prevent condensation from forming, allow instrument to come to room temperature before use.
- When replacing lithium battery pack, turn indirect off and attach new pack.



# Setting up and using the Vantage Plus

## Description of the Product

- A Headband Size Adjustment Knob
- B Headband Height Adjustment Knob
- C Metal Outer Brow Band
- D Brow Band Tension Knob
- E Ophthalmoscope Angle Knob
- F Lithium Battery
- G Hinge System
- H Aperture Lever
- I Filter Lever
- J Mirror Angle Control
- K Individual Eyepiece
- L Front Window
- M HiMag™ Lens
- N Teaching Mirror
- O Binocular Block
- P Bulb
- Q Rubber Eyecaps
- R Optics of Eyepiece
- S Interpupillary Distance Control
- T Head Dimmer Switch



 Keeler

# Using the Vantage Plus

## Headband Adjustment

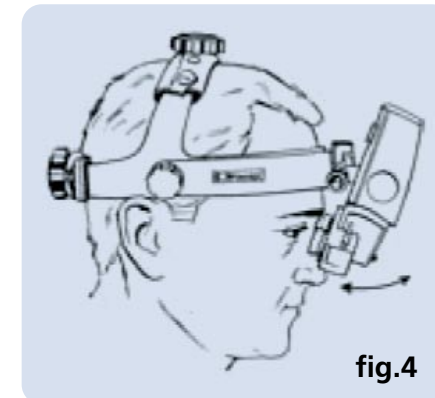
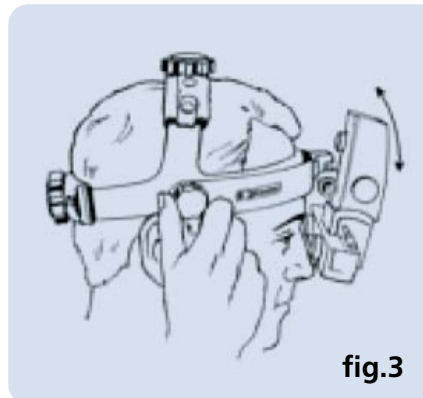
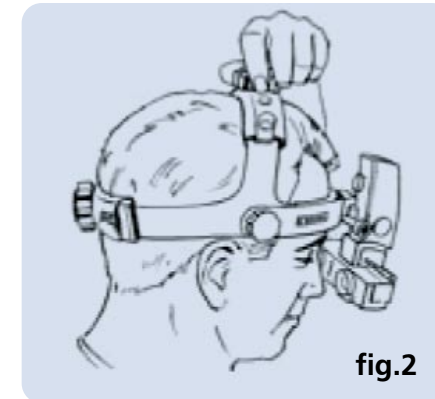
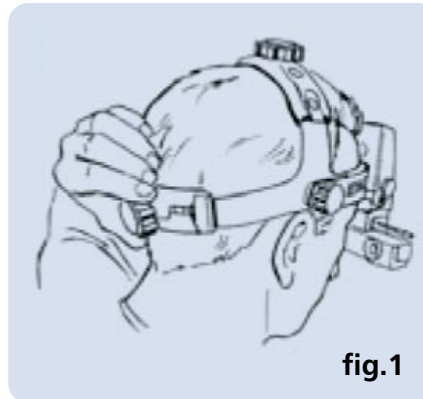
### Comfortable Fit

Adjust the size (A) fig.1 and the height (B) fig.2, so that the instrument is supported comfortably around and on top of the head.

### Ophthalmoscope Angle Alignment

For vertical alignment of the eyepieces and binocular block (O), adjust the height of the Metal Outer Brow Bar (C) if necessary by using the browband tension knobs (D) located on the sides of the headset (fig 3).

Position the Binocular Block (O) as close to the eyes or spectacles as possible for maximum field of view. Slightly loosen the ophthalmoscope angle knob (E) to allow for adjustment and tighten when in position as in (fig 4).



# Using the Vantage Plus

## Interpupillary Distance Setting Control (S)

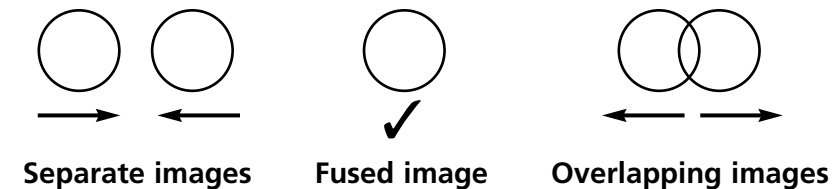
Because the eyes are dissociated, particular care must be taken to ensure the optics (eyepieces) are set properly in front of each eye.

Always set the Aperture Selection (H) to the large light patch for this exercise.

Place an object, perhaps the thumb, approximately 40cm from the face and centre it horizontally in the light patch. Then, close one eye. Using the thumb and forefinger of the opposite hand, slide the P.D.Control (S) of the open eye (located directly under each eyepiece) so that your object moves into the centre of the field, keeping the object in the centre of the light patch. Repeat for the other eye.

## Obtaining a Fused Image

Ensure that a singular, fused image is obtained as follows:



## Mirror Angle Control (J)

The light is positioned vertically into the upper two thirds of the field of view by rotating the spindle (J) located on either side of the binocular block.

## Head Dimmer Switch (T)

Turn the illumination on by rotating the headband dimmer (T) in an anti clockwise direction.

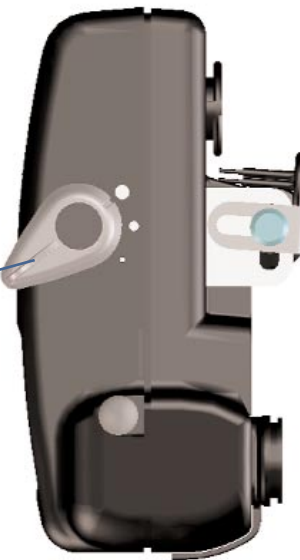


# Using the Vantage Plus

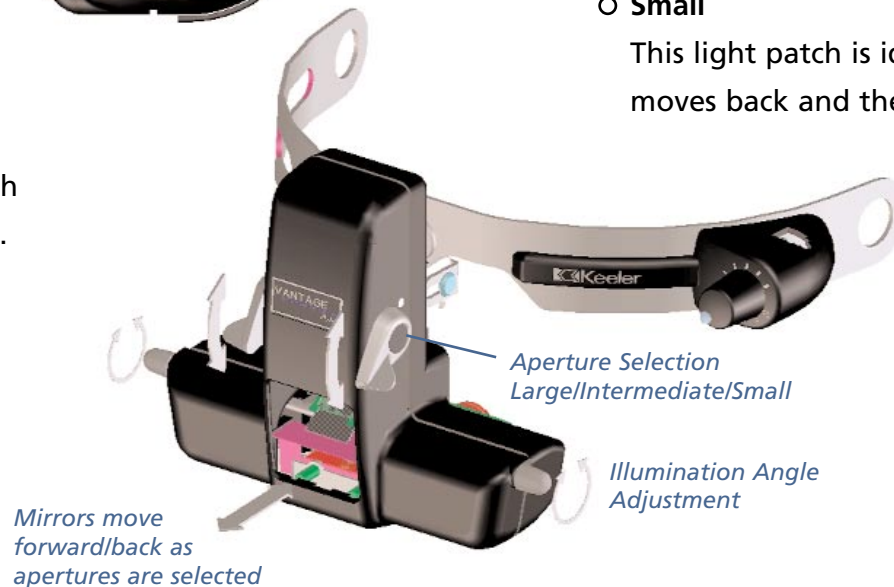
## Setting the Aperture

### Aperture Lever Selection (H)

By rotating the knob (H) different apertures may be selected.



The Keeler Vantage Plus has 3 light apertures which offer maximum stereopsis. When you select the aperture the illumination and viewing mirrors automatically adjust for maximum stereopsis.



### ○ Large

The large, round, homogeneous patch is suitable for routine examinations through fully dilated pupils. In this position the mirror remains in the forward position and the optics are diverged.

### ○ Intermediate

The intermediate patch is designed to reduce reflections when entering a partially or poorly dilated pupil (3mm). It is also ideal for closer inspection of particular fundal areas. The mirror and optics stay in the mid position.

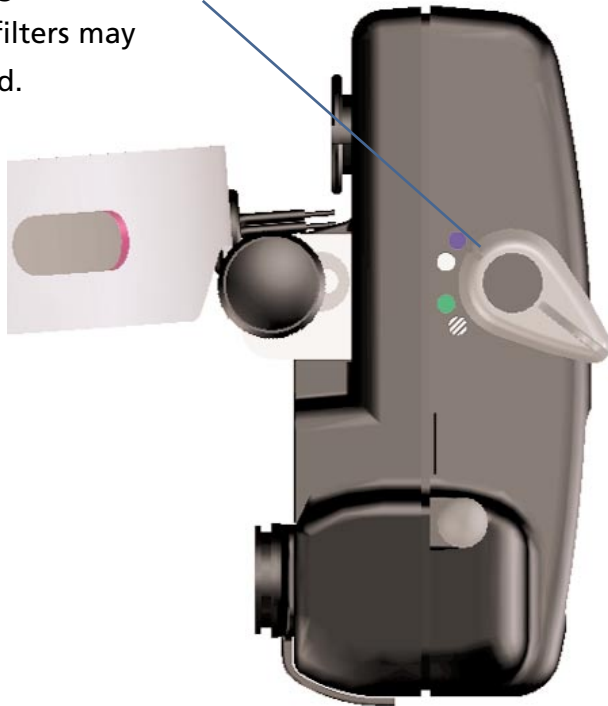
### ○ Small

This light patch is ideal for small, undilated pupils. The mirror moves back and the optics automatically converge.

# Using the Vantage Plus

## Filter Lever Selection (I)

By rotating the lever (I), different filters may be selected.



### Blue Circle

Cobalt blue filter for fluorescein angiography.



### White Circle

Clear light – Select the clear with no filter when inspecting a specific pathology and a brighter, whiter light is desired.



### Green Circle

Red Free filter – this filter reduces the red light, so blood will appear black, silhouetted against a dark background.



### Diffuser

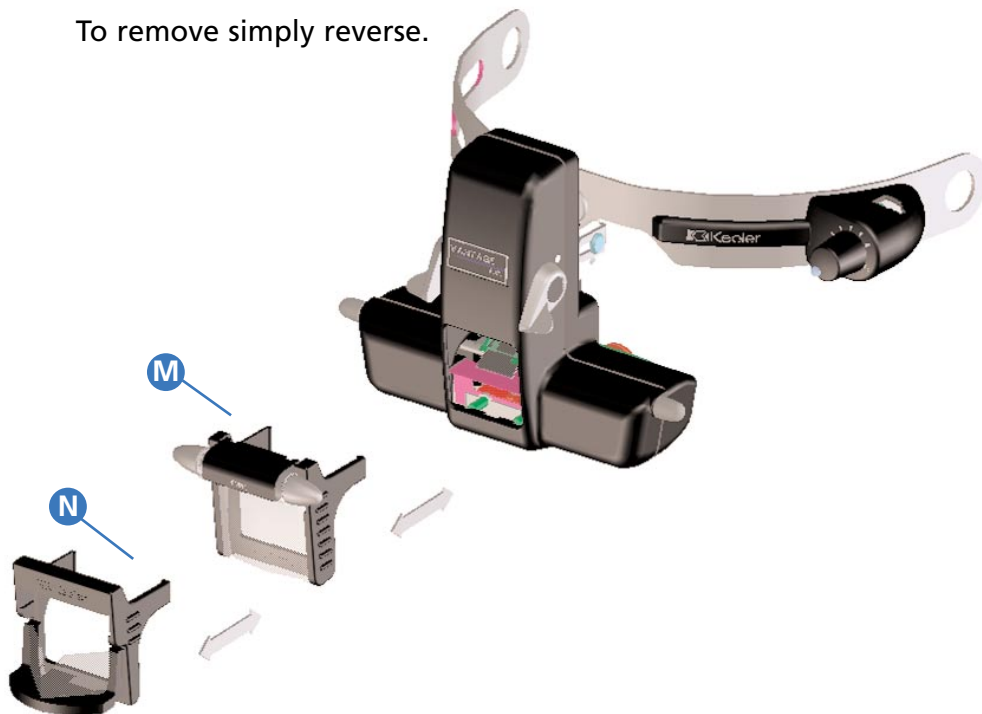
This unique extra wide beam of diffused light permits a more relaxed technique during more challenging fundus examinations. Beginners may also find this aperture particularly helpful since the alignment between the headset, the condensing lens and the pupil, in order to achieve a full lens image, is not as critical as with the conventional beam.

# Accessories

## Fitting your HiMag™ Lens (M) and Teaching Mirror (N)

To fit the HiMag™ lens simply push it onto the front of the window as shown in the diagram.

To remove simply reverse.

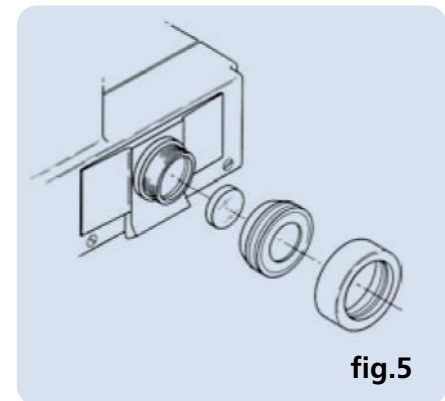


## Rubber Eyecaps

Rubber eyecaps are provided to protect spectacles and have been manufactured in rubber to avoid any abrasions. To use simply fit over the eyecaps.

## Plano Lenses

The Keeler Vantage Plus supplies as standard +2 dioptre lenses. Plano lenses, if preferred are available and can be fitted as shown in fig.5.



## Scleral Depressors

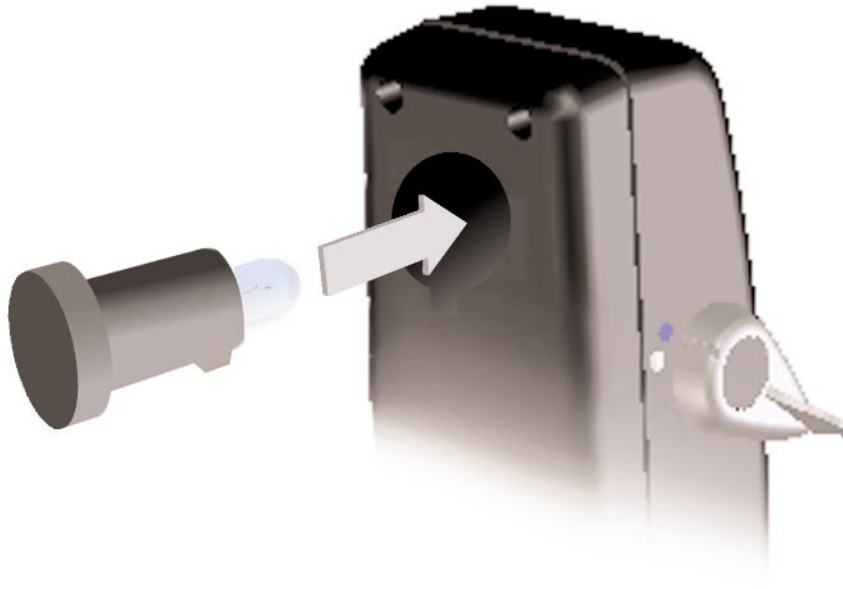
Scleral Depressors are available to view the ora serrata.

# Bulb Replacement



**Caution:** The bulb may get very hot after prolonged use.

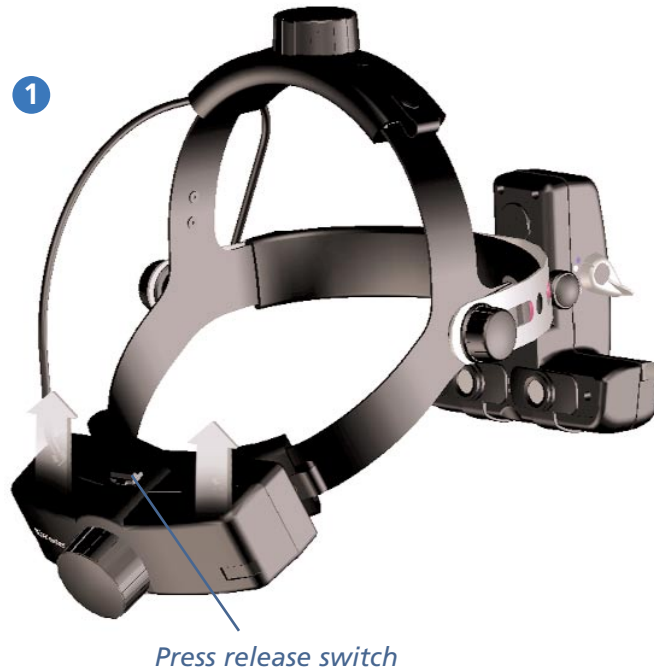
Allow bulb to cool and disconnect the instrument from the electricity supply. Remove the bulb from the back of the instrument and insert the new bulb, ensuring the bulb's key is aligned with the aperture and securely pushed in.



# Wireless Power Supplies

## Inserting/replacing the Battery Pack

1. Release battery by pressing release switch as shown and lift battery pack from cradle.
2. To insert new battery pack, place in cradle until fully engaged.



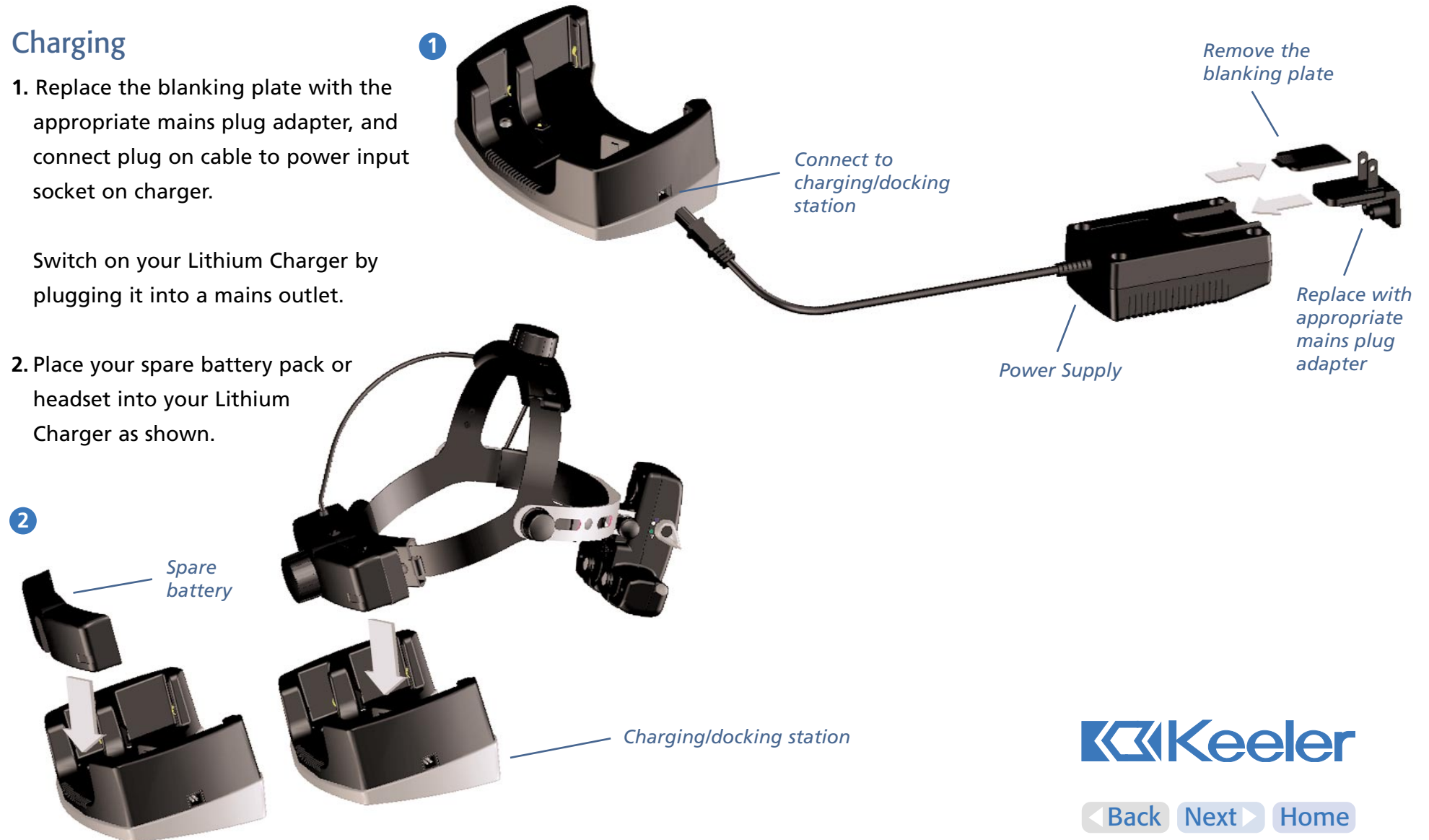
# Wireless Power Supplies

## Charging

1. Replace the blanking plate with the appropriate mains plug adapter, and connect plug on cable to power input socket on charger.

Switch on your Lithium Charger by plugging it into a mains outlet.

2. Place your spare battery pack or headset into your Lithium Charger as shown.



# Wireless Power Supplies

## Headband Battery Holder

**Flashing LED** – Battery requires charging.

## Charging Station

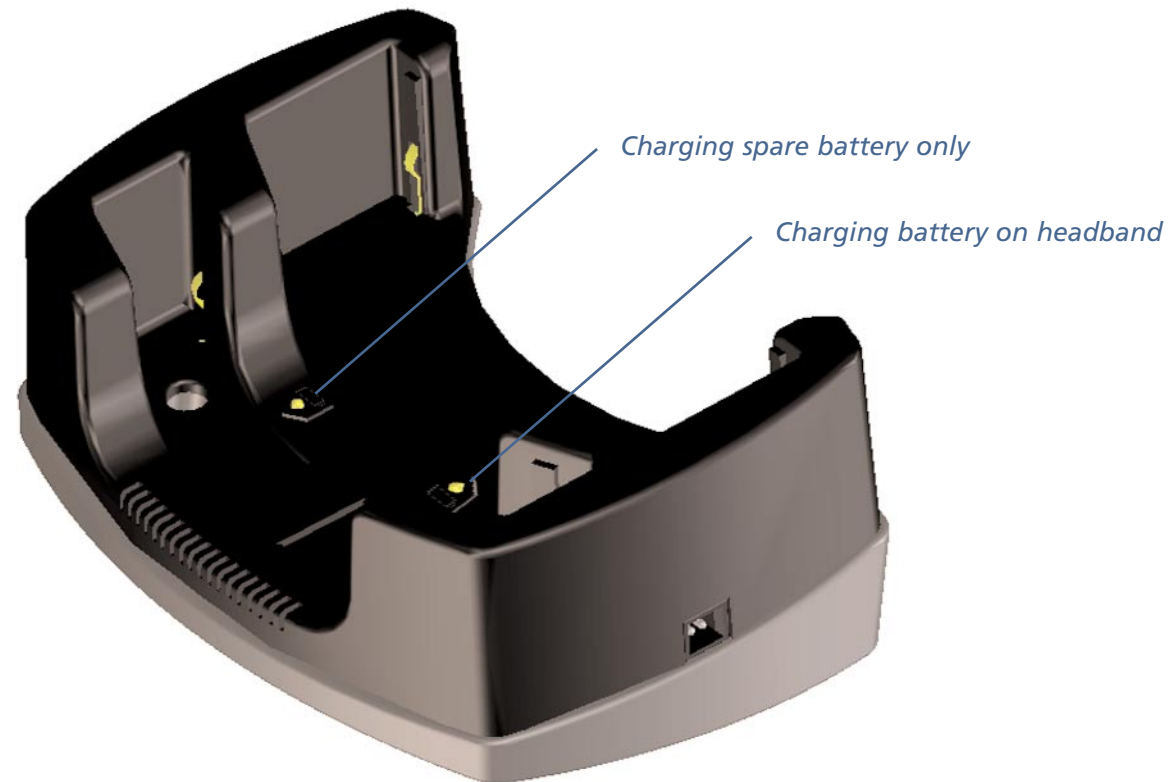
**No LED** – Battery is fully charged.

**Flashing LED** – Top up Charge.

**Solid LED** – Rapid Charge.

The battery pack can be used at any time during the charging cycle and will automatically resume charging when battery pack is placed back in the charger.

Direction arrow on charger indicates which battery is being charged.



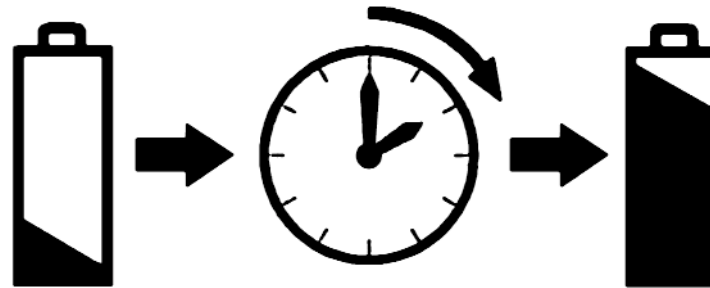
# Wireless Power Supplies

## Charging Cycle

The battery attached to the indirect will take approximately 2 hours to fully charge.

The battery will last approximately 2 hours on full power.

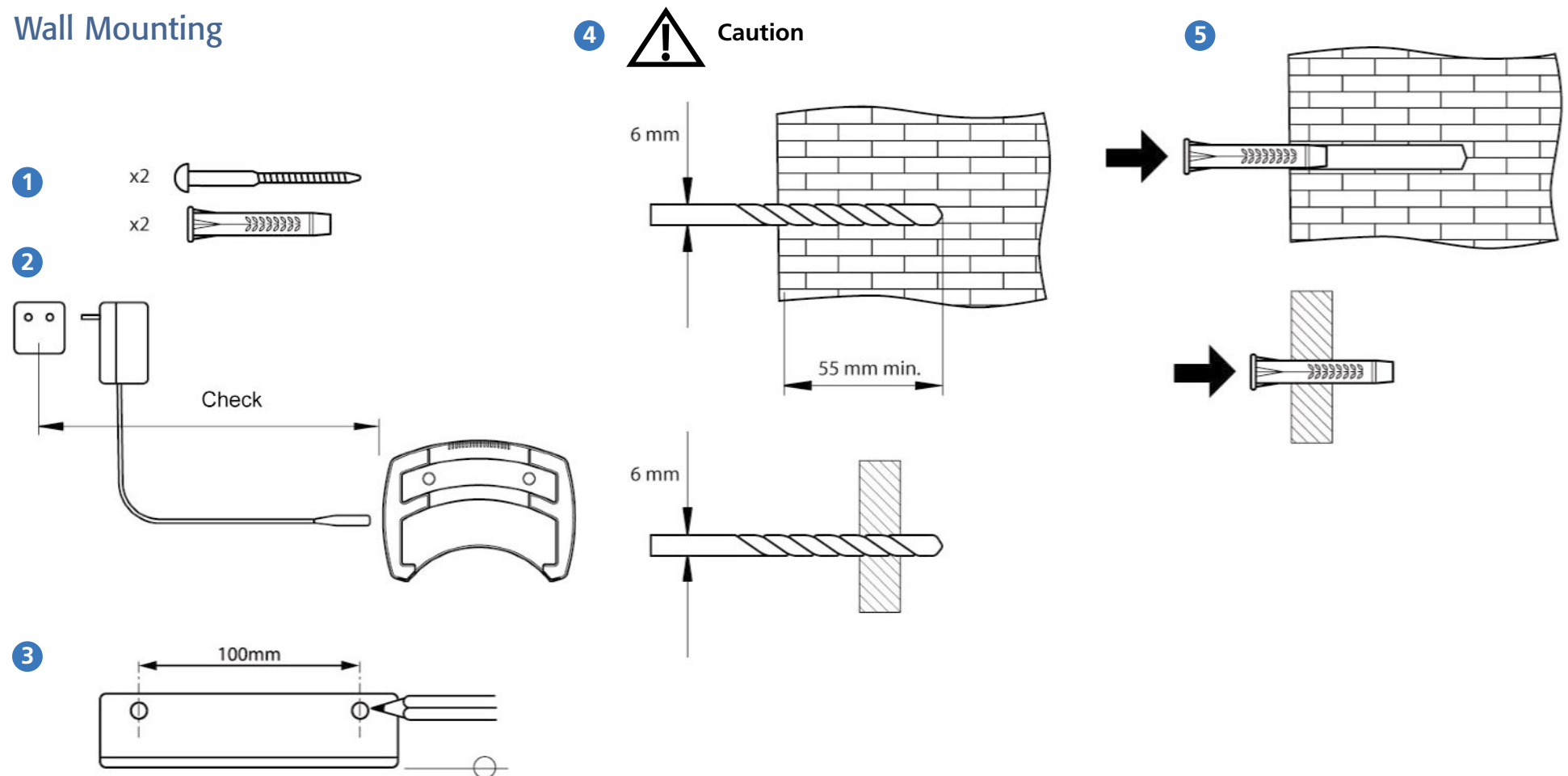
The spare battery will take 4 hours to charge.





# Wireless Power Supplies

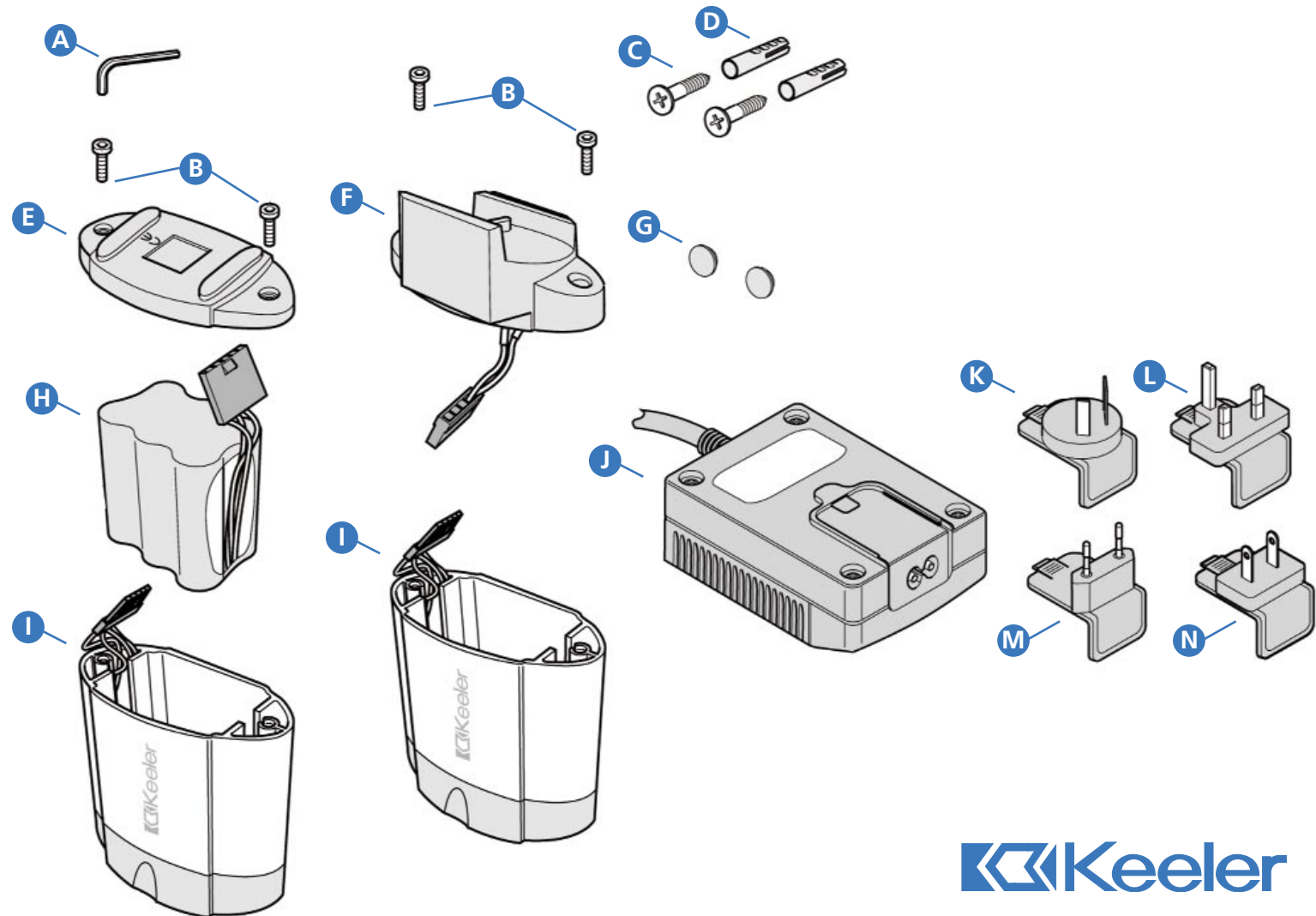
## Wall Mounting



# SmartPack and WallPack

## Parts List

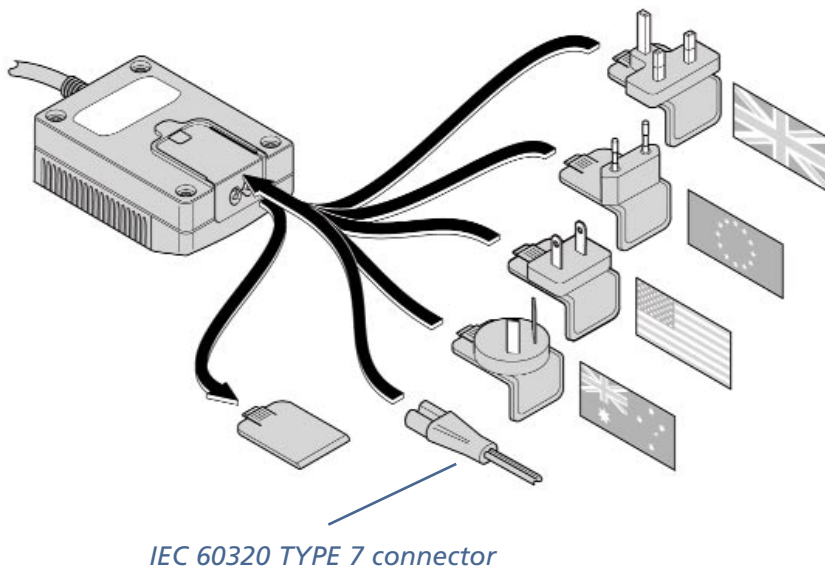
- A Hex Key
- B Screws
- C Screws
- D Wall Plugs
- E Base Cap
- F Wall Mount
- G Adhesive Pads
- H Rechargeable battery  
Part No. EP39 22079
- I Body
- J Power Supply
- K Australian Plug
- L UK Plug
- M Euro Plug
- N USA Plug



# SmartPack and WallPack

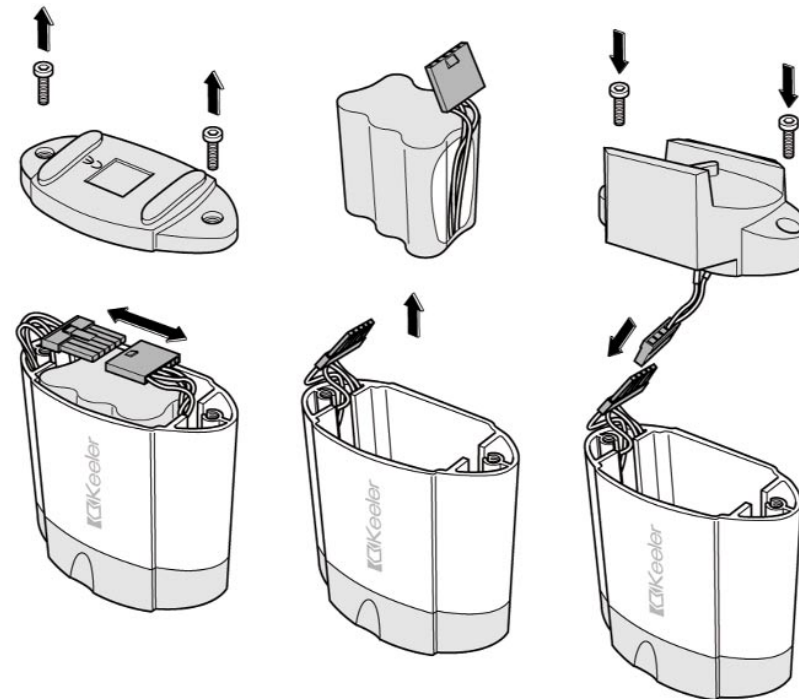
## Set Plug

Replace the blanking plate with the appropriate mains plug adapter if required, or use IEC 60320 TYPE 7 connector (not supplied).



## Power Conversion

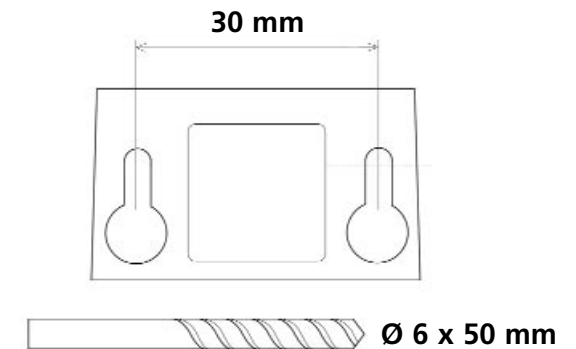
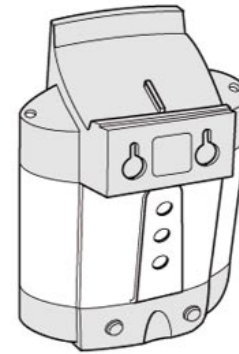
Convert to either WallPack or SmartPack by following the illustration below.



# SmartPack and WallPack

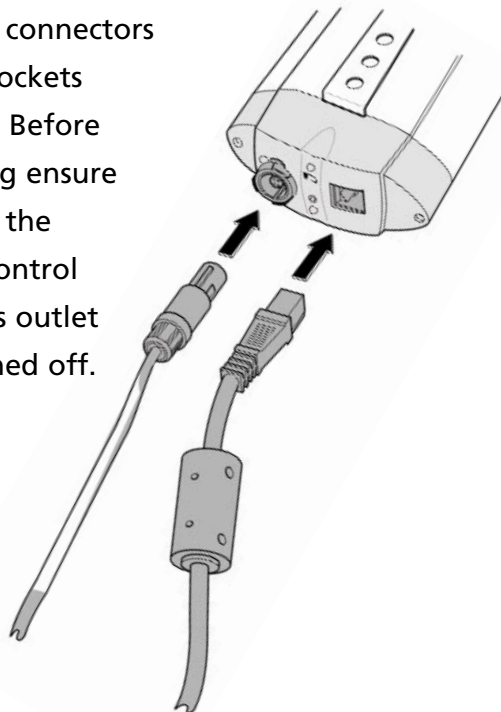
## Fixing the Wall Mount

Use the wall plugs and screws to mount the wall pack unit, attach the adhesive pads to the side of the case.



## Connection

Insert the connectors into the sockets as shown. Before connecting ensure that both the dimmer control and mains outlet are switched off.

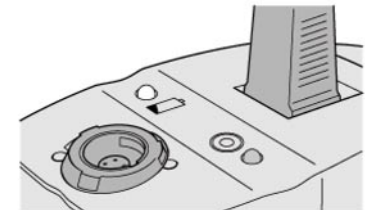


## Charge Time

Charge the battery for 12 - 14 hours before initial use.

**Note:** The unit becomes warm when charging, this is normal.

Recharging may take place while indirect is in use. Normal battery life is 1.5 to 5 hours depending on setting with a recharge time of two hours or on continuous trickle.



# SmartPack and WallPack

## LED Displays



**Slow Pulse**



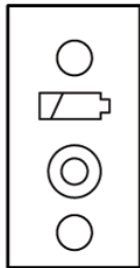
**Fast Pulse**



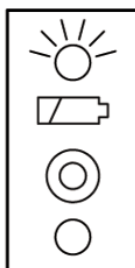
**LED On**



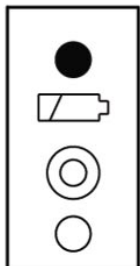
**LED Off**



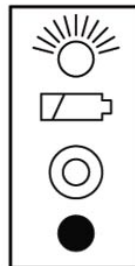
**Charging**



**Trickle Charging**



**In use**



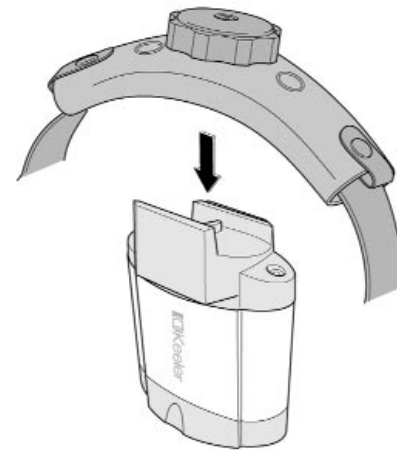
**Battery low**

## Power Supply Battery

Insert or remove the indirect plug or switch the indirect off/on.

## Power Supply Mains

- Switch the indirect ON/OFF
- Insert or remove the mains plug
- Place on or off the cradle switch
- Green LED illuminates when indirect is on



## Warranty and Service

No user serviceable parts – all preventative maintenance and servicing must only be performed by authorised Keeler representatives.

Your Keeler product is guaranteed for 3 years and will be replaced or repaired free of charge subject to the following:-

- Any fault due to faulty manufacture
- The power supply has been used in compliance with these instructions
- Proof of purchase accompanies any claim.

Batteries are guaranteed for 1 year from date of purchase.

## Cleaning

Only manual non-immersion cleaning as described below should be used for the instrument. Do not autoclave or immerse in cleaning fluids. Always disconnect power supply from source before cleaning.

Wipe external surface with a clean absorbent, non shedding cloth dampened with a water/detergent solution (2% by volume) or water/isopropyl alcohol solution (70% by volume).

Ensure that excess solution does not enter the instrument. Use caution to ensure cloth is not saturated with solution.

Surfaces should be carefully hand dried using a clean non shedding cloth.

Safely dispose of used cleaning materials.

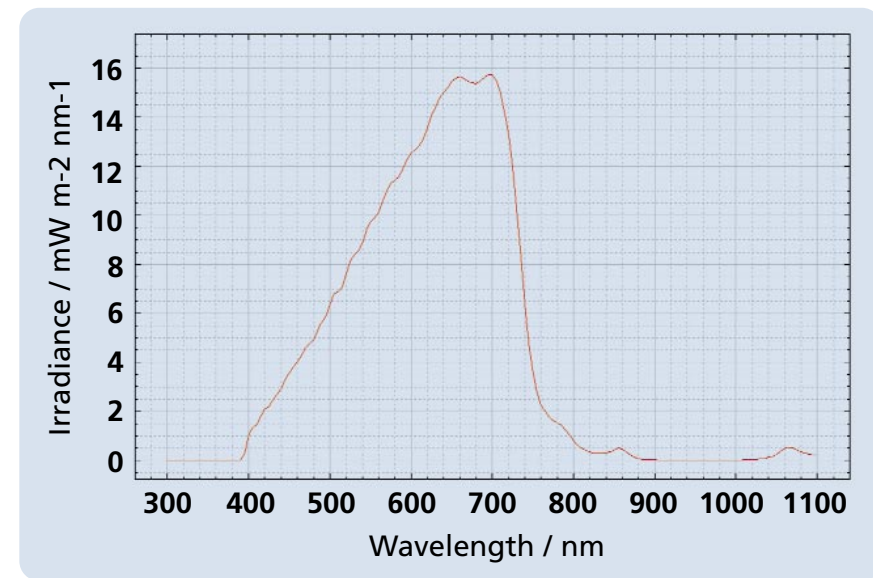


## Technical Information

It is well established that exposure of the eye to intense light sources for extended periods of time poses a risk of retinal photic injury. Many ophthalmic instruments illuminate the eye with intense light. The decision about the intensity of the light level to use in any procedure must be made on a case to case basis. In each case, the clinician must take a risk benefit judgement about the intensity of light to be used. Use of insufficient intensity may result in inadequate visualization and in adverse effects more serious than retinal photic damage. Further, despite all efforts taken to minimise the risk of retinal damage, damage may still occur. Retinal photic injury is a possible complication of the need to use bright light clearly visualize ocular structure during delicate ophthalmic surgical procedure.

While no visible retinal lesions have been identified for ophthalmic instruments, it is recommended that illumination levels be set to the minimum level necessary to perform the diagnostic function. Young children and persons with diseased

eyes may be at a higher risk. The risk may also be increased if the person being examined has had any exposure with the same instrument or any other ophthalmic instrument using an intense visible light source during the previous 24 hours. This will apply particularly if the eye has been exposed to retinal photography.



*Spectral irradiance of Vantage Plus indirect ophthalmoscope at user plane.*

## Technical Information

Photochemical source radiance	1mm aperture (mW cm <sup>-2</sup> sr <sup>-1</sup> )
Aphakic, L <sub>A</sub> (305-700nm)	1.32
Phakic, L <sub>B</sub> (380-700nm)	1.16

*Calculated photochemical source radiances*

<b>Operating temperature:</b>	+10°C to +35°C
<b>Transportation temperature:</b>	- 40°C to +70°C.10% to 95% RH
<b>Input mains data:</b>	100-240V – 50/60Hz
<b>Power supply rating:</b>	12V : 2.5amps
<b>Operation:</b>	Continuous
<b>Classification:</b>	Class II equipment Type B protection against shock
<b>Standards, tested to:</b>	IEC 60601-1 Electrical safety IEC 60601-1-2 EMC ISO 9022-2:1994 Optics and optical equipment- Environmental test methods - Cold, heat and humidity. ISO 9022-3:1994 Optics and optical equipment - Mechanical stress. EN ISO 15004:1997 Ophthalmic Instruments - Fundamental requirement.





## Contact Information

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As part of our policy of continued product improvement we reserve the right to alter and/ or amend specifications at any time without prior notice.

Patent pending.