



# Elite Bed Range

**Models:**

- E2000 - Elite Bed
- E2000L - Elite Long Bed
- E2060 - Elite Low Bed
- E2060L - Elite Low Long Bed
- E2400 - Elite Extra Wide Bed



## Instructions For Use

**IMPORTANT!**

Read the instructions in this booklet thoroughly before use

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# 1 Introduction


## 1.1 Foreword



*Thank you for purchasing a Renray Elite Bed. In doing so, you have chosen a quality Bed from a range which has been designed to provide excellent functionality in a safe manner.*

*To ensure the Elite Bed is always operated correctly and safely please read this document thoroughly and strictly follow all the assembly, operating, cleaning and maintenance instructions.*






These instructions cover the following Bed models;

Model	Description	Maximum Load
<b>E2000</b>	<b>Standard Elite Bed</b> Electrically operated bed, with adjustable height, backrest and knee section.	 <b>Including mattress &amp; all fitted accessories</b>
<b>E2000L</b>	<b>Standard Elite Bed</b> As E2000, but with an increase in length of 115mm	
<b>E2060</b>	<b>Extra Low Elite Bed</b> As E2000, but with height adjustment from 20cm to 60cm from the floor.	
<b>E2060L</b>	<b>Extra Low Elite Bed</b> As E2060, but with but with an increase in length of 115mm.	
<b>E2400</b>	<b>Extra Wide Elite Bed</b> As E2000, but with increased mattress width.	

### **ALWAYS keep these instructions with the Bed for reference**

- Do ensure that you fully read & understand these Instructions for Use
- Do ensure the Bed is assembled and installed in accordance with these Instructions for Use
- Ensure the Elite Bed is always used as intended, see 2 Intended Use, Page 4
- Always ensure the Elite Bed is installed and commissioned as intended. (See 2 Intended Use, Page 4)









## 1.2 Warning Symbols

	<b>WARNINGS</b> given in this manual identify possible hazards in procedures or conditions, which if not correctly followed, could result in death, injury or other serious adverse reactions.
	<b>Cautions</b> given in this manual identify possible hazards in procedures or conditions, which if not followed, could result in equipment damage or failure, and indicate moderate risk.
	<b>Electrical Hazard</b> symbol indicates a hazard due to electrical voltage, which if not correctly followed could result in death, serious injury or fire.
	<b>Weight Hazard</b> symbol appears when there is a potential weight related hazard. This could be Bed or component weight, or a caution about Patient/User weight or loading.
	<b>Specific Bed Model.</b> Where a Warning, Caution or Hazard applies to a specific model bed from the Elite range, it will be highlighted with the addition of the Bed Model number appearing below the Warning Symbol.

## 2 Intended Use

Each Bed in the Renray Elite Range is intended to assist members of staff in Residential, Care and Nursing Homes to assist persons over the age of 12 years and of a height in between 146cm - 185cm (4'9½" – 6'1") who have disabilities or need care to compensate for an injury, handicap or disability. Persons outside of these criteria will require additional risk assessment.

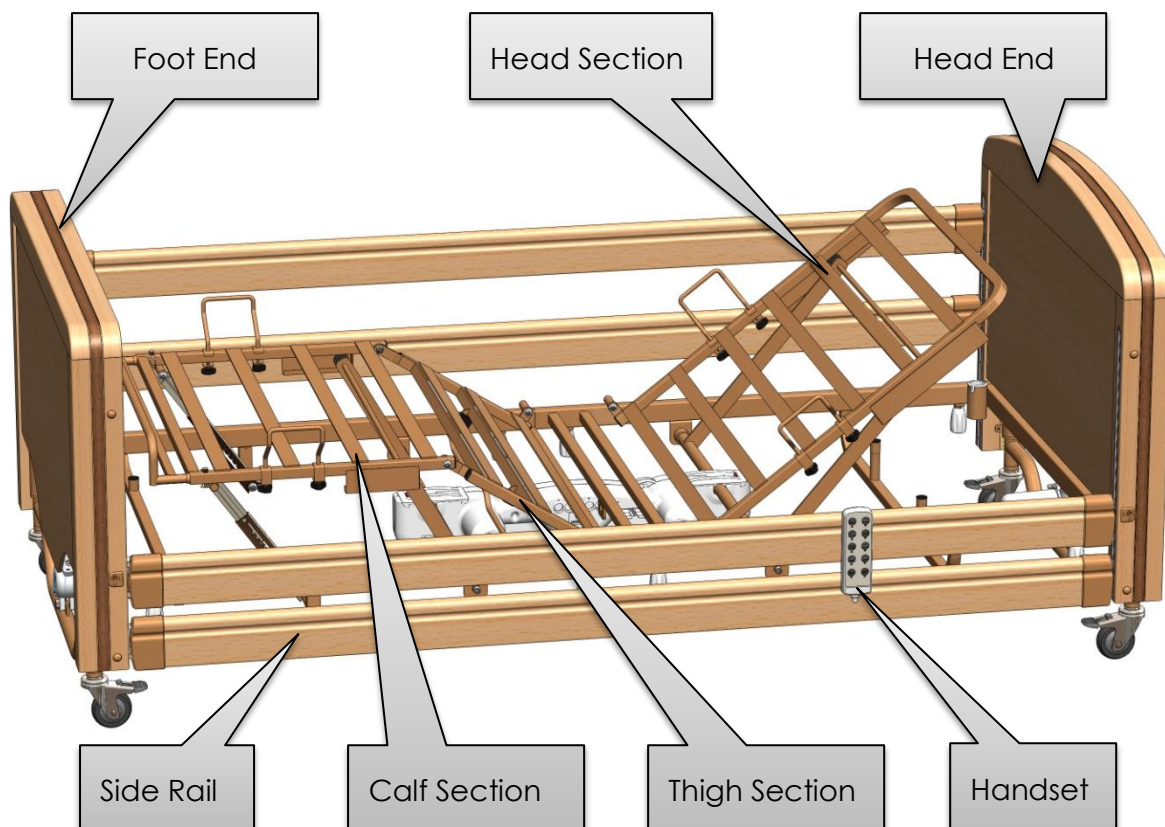
The Elite Beds are intended to be used by persons who are trained and fully conversant with the Instructions for Use and how to operate the Bed and any fitted accessories.

	WARNING: <u>DO NOT</u> modify your Elite Bed, its components or any of its accessories in any way; doing so could result a potential hazard.
	If in any doubt, always ensure the patient has been Clinically Risk Assessed as to their suitability before prescribing an Elite Bed and mattress, including any accessories, in particular their size and medical/mental condition.
	The intended Safe Working Load (SWL) of all Elite Beds is 180Kg.
	The Elite Beds should never be used on an uneven floor or an incline of 5° or greater.
	The Elite Beds are not designed for use in hospitals.
	The Elite Beds are designed for use only in the UK and Ireland.
	The Elite Beds are not intended for use in the proximity of high-frequency surgical equipment and/or defibrillators.
	The Maximum Patient weight is 180Kg minus the combined weights of all fitted accessories, up to a <b>maximum of 150Kg</b> . The weights for the accessories can be found in <u>10.3, Component Weights, Page 46</u>

### 3 General Description

The Elite Bed Range has been primarily designed as an electrically operated bed to assist the Carer position the Patient and also to allow the Patient to adjust their own position to aid their comfort.

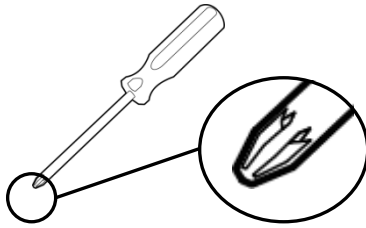
The Bed is constructed from welded steel fabrications coated in protective epoxy powder paint. The wooden head & foot panels cover the height adjustment mechanisms at each end of the Bed.



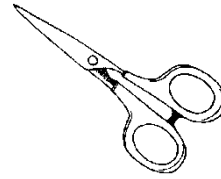
*E2000 illustrated*

## 4 Installation

Before you begin, you will need the following tools to assemble and disassemble the bed;



**1x Phillips Screwdriver**



**1x Pair of Scissors**

### 4.1 Unpacking

Carefully open the boxes and unpack all components, laying all large components flat.

Remove the cable ties securing the handset, cables and metal frames together. Take care not to damage any electrical cables, and keep them tidy and out of the way of the rest of the build procedure.



Before unpacking, be aware some of the larger assemblies & components are heavy (See [10.3 Component Weights](#), Page 46). If required, please take precautions before attempting to lift or move any items.



Before the Bed is fully assembled, there are trapping hazards between the movable sections of the Head and Foot decks. Pay attention to where you grip the Decks, and always be aware of all movable parts.

### 4.2 Supplied Parts Identification

Once you have unpacked your Bed and are ready to assemble it, clear an area of floor space where you will be able to access all four sides of the Bed. Also take into account that you will need to tip the bed onto its side for access to the underside of the mattress platform. Work on a suitably smooth/carpeted surface to prevent damage to the bed, and if necessary cover the floor to protect it from dirt & damage.



Before proceeding, apply the brakes to all four castors. This will prevent unintended movement during assembly. (See [6.8 Castors](#), Page 24)

#### **NOTE ►**

*Before proceeding with the assembly, it is highly recommended that you fully read through and understand all assembly instructions, and make sure you have all necessary resources close at hand.*

Before you begin any assembly, you should check you have all the following parts;

Part Description/Name	Qty.
Head Deck Assembly*	1
Head End Assembly*	1
Foot Deck Assembly*	1
Foot End Assembly*	1
Deck Joining Bar	2
Hand wheel	8
Mattress Retainer Bracket**	4
Control Unit	1
Handset	1
Handset Lock-Out Key	1
Side Rail*	4
Side Rail End Caps (& Springs)	4
Side Rail Glides	4
Side Rail Lock Key***	1

**Table 1 – Supplied Parts List**

\* Design/Type will vary depending on Bed model & options

\*\* Dependent on Bed Model

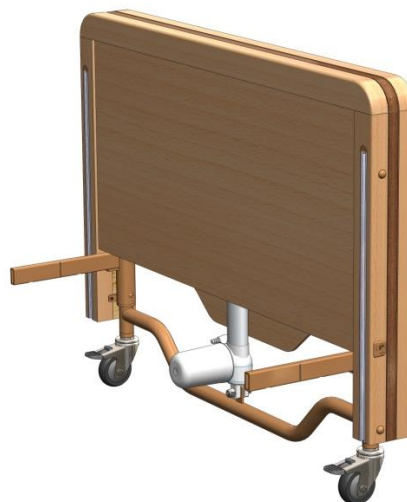
\*\*\* Optional

**NOTE ►**

There **is** a difference between the Head End and Foot End; The 'prongs' that locate the Mattress Platform onto the Head & Foot Ends are **longer** on the **Foot End**. (See Figure 1 – Head & Foot End Identification)

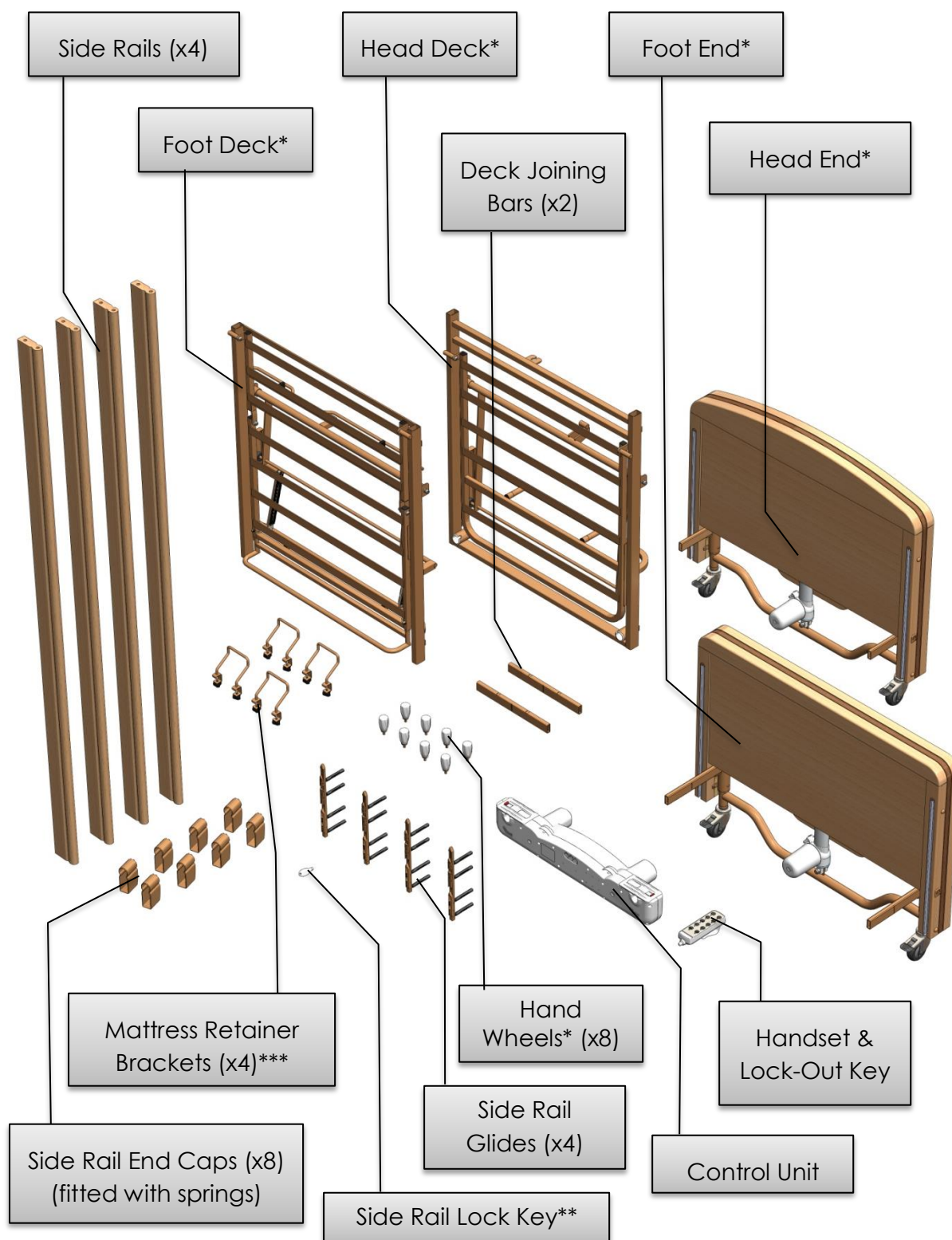


**Head End** - Shorter prongs, with single notch in each



**Foot End** - Longer prongs, with two notches in each

**Figure 1 – Head & Foot End Identification (E2000 illustrated)**



**Figure 2 – Part Identification (E2000 Bed illustrated)**

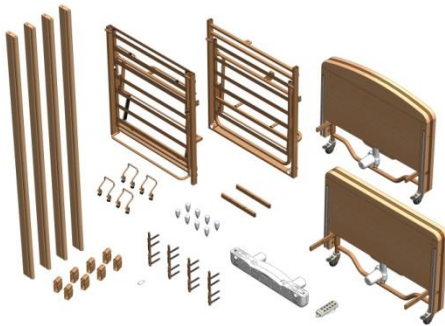
\* Appearance may differ depending on bed model

\*\* Optional accessory

\*\*\* Dependent on Bed Model

## 4.3 Assembly Procedure

1



Once all unpacking steps have been followed, you should have all the parts in Figure 2 – Part Identification. If you do not have the Transport Brackets, skip to **Step 4**

**NOTE** ►

*The largest bed sections may still be assembled on the Transport Brackets. If this is the case, follow **Steps 2 & 3**.*



Each time the Bed is set up, specific attention must be drawn to any potential dangers which can occur despite correct operation. Before putting an Elite Bed into service for the first time, the Instructions for Use must be read conscientiously and in detail by the User / Care personnel.

2



### Removing Bed from Transport Brackets

First clear the area you will be assembling the bed in. Ensure there is an accessible power socket close by.

Plan where the Head End will be positioned.

Remove the Head Deck from the Transport Brackets and place safely out of the way. Then repeat this with the Foot Deck.

**NOTE** ►

*Always remove the Head Deck first, as this overhangs the bottom mattress retainer of the Foot Deck (see picture 2, above, left)*

3



Wheel the remaining Transport Assembly so that the Foot End is next to a wall. Apply the brakes to the Foot End and release the hand wheels securing the Transport Brackets to the Foot End. Separate the Head & Foot Ends, leaving the Foot End resting in place against the wall. Place the Head End safely near its final location

## Deck Frame Assembly

If you have not done so already, clear the area you will be assembling the bed in. Ensure there is an accessible power socket close by. Plan where the Head End of the Bed will be positioned.

Lay out the Deck parts, Mattress-side down. Place the Head and Foot section near their final positions.

Take the Deck Joining Bars, and identify the locating tabs in them, (there may be a long and a short end depending on model of bed).

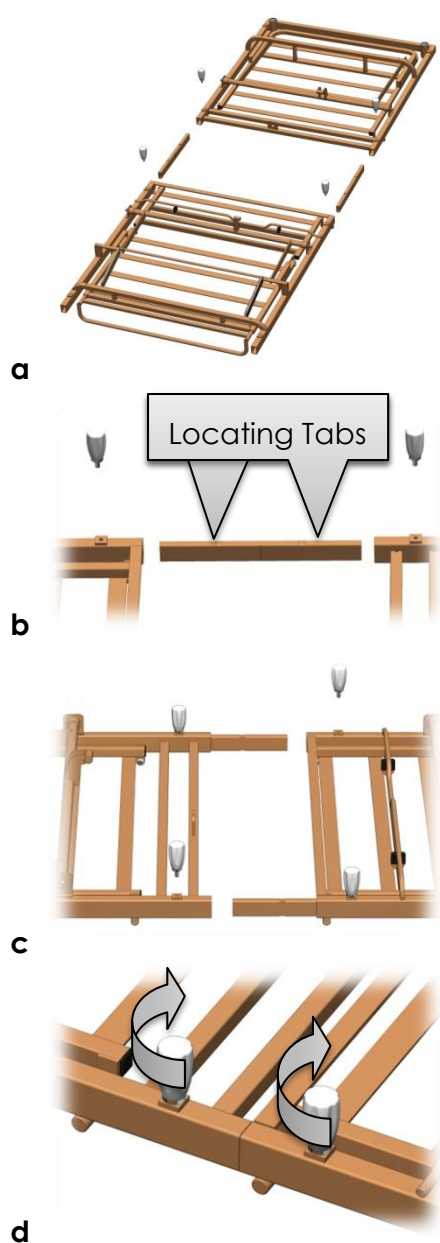
Insert one end of one of the Joining Bars into the Foot Deck, and one end of the other Joining Bar into the opposite side of the Head Deck (see picture 4c, left).

Screw the hand wheels tight, ensuring the Hand wheel screw locates in the locating tab on each Bar.

Push the Head and Foot Decks together, and ensure that the Locating Tabs line up with the screw holes in the Head & Foot Deck. Insert another two hand wheels and tighten them, securing the Deck Sections together (picture 4d).

### Before proceeding:

- Ensure all 4 central hand wheels are tight, and that both Deck sections are secured tightly against each other.
- There should be none of the Deck Joining Bars visible



5



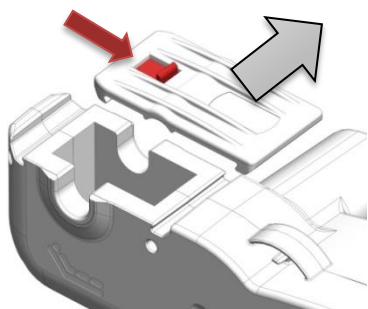
### Attach power cord to the Control Unit

Plug the power cable into the socket on the reverse of the Control Unit as shown.

Secure it in place with the cover and 2x screws (supplied)

*(This step can be skipped if the control box comes fitted with a power cable)*

6



### Remove the covers from the control unit

Locate the Control Unit, and identify the 2 bracket covers.

Release the two red lugs which secure the covers

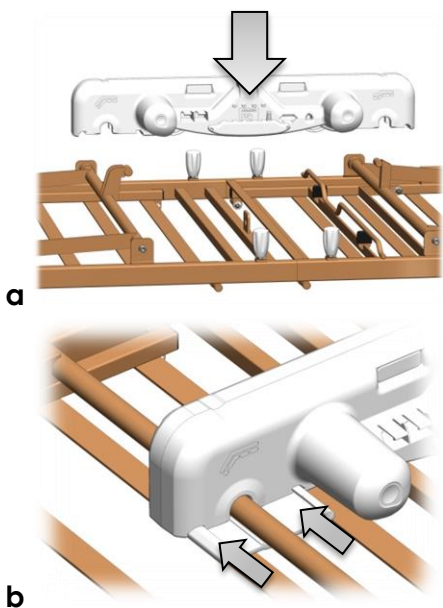
Slide the covers off the Control Box

7

Identify the Head & Foot Sections on the Control Unit (these are clearly labelled on the housing, near to where the sliding covers are). Image below shows location of Deck Identification markings highlighted in **BLUE**.

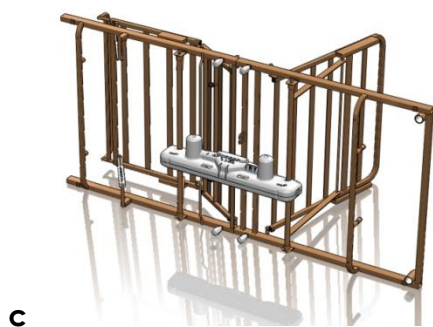


8



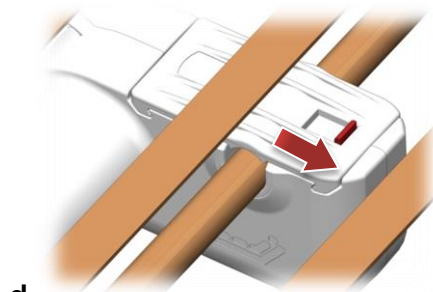
Locate the Control Unit onto the two lugs on the underside of the part-assembled Mattress Platform. Ensure the lugs on Head and Foot ends go into the corresponding slots on Control Unit.

Slide the two bracket covers closed again, locking the Control Unit to the Mattress Platform.



c

Stand the Mattress Deck on its side, using the head and knee sections to stabilise it. These will fold out manually, without power.

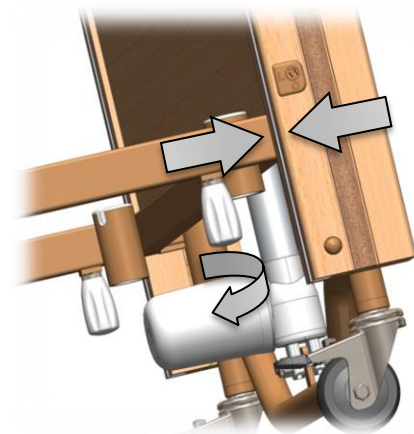


d

Flip the Bed Deck onto its side and slide the 2 red tabs back into place to lock the Control Unit onto the Bed.

**Ensure both red tabs are inserted fully and tight – if they will not slide, it may be that the cover plate is not correctly centred.**

9



### Attach the Head and Foot Ends

Apply the brakes to the Head End, and tip onto its side.

Insert the prongs of the Head End into the Head Deck as far as they will go. Insert a Hand wheel into either side of the Head Deck and tighten the parts together. Ensure the Hand wheel screw locates in the locating tab on each bar.

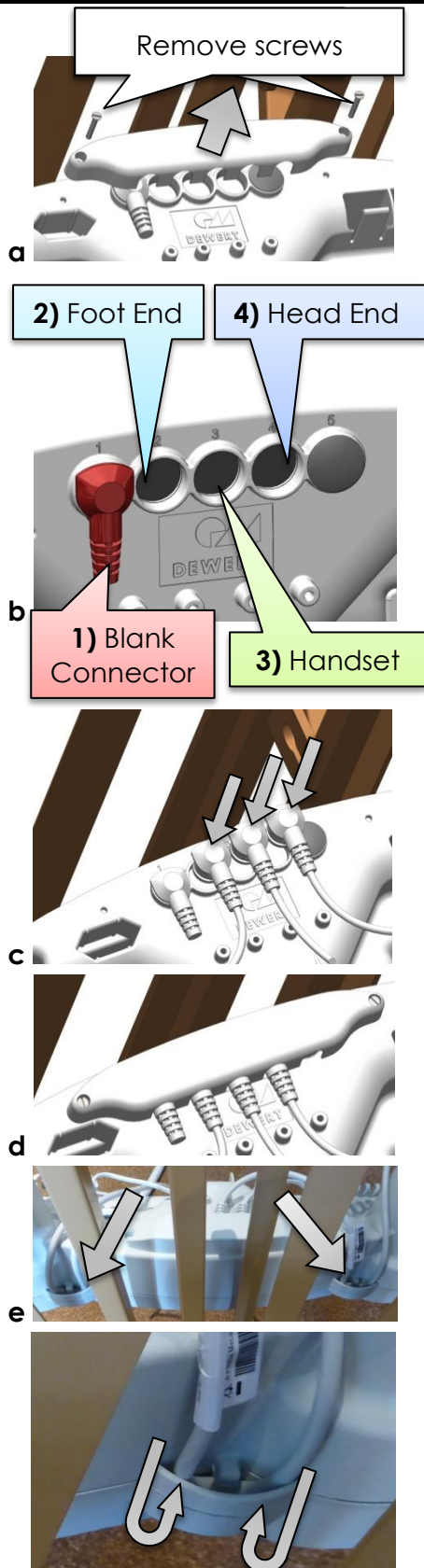
Repeat the process for the Foot Deck.

#### **NOTE ►**

*The Foot Deck has 2 locating tabs; use the tab nearest to the castors unless you are using the bed in its Extended Configuration. (see [6.9 Bed Extension](#), Page 25 for more details)*



The wooden panels that are recessed into either face of the Head & Foot Ends are not designed to be load bearing, and precautions to protect these surfaces should be taken during assembly.



### Connect the Control Unit

- Firstly, remove the screws holding the cable retaining cover in place and remove it.
- Connect the **Head End** and **Foot End** actuator cables to their corresponding sockets on the Control Box.  
**Ensure that the Blank Connector is present and connected.** Removal of this plug will disable the Control Unit.
- Connect the **Handset** to its corresponding socket on the Control Box.
- Replace the cable retaining cover and screw it firmly into place. This will prevent any accidental disconnection of any cables from the control box.
- Ensure that the power cord and handset cables are not entangled with any other cables or fittings, and then loop them through the two strain relief lugs on the top of the Control Unit.

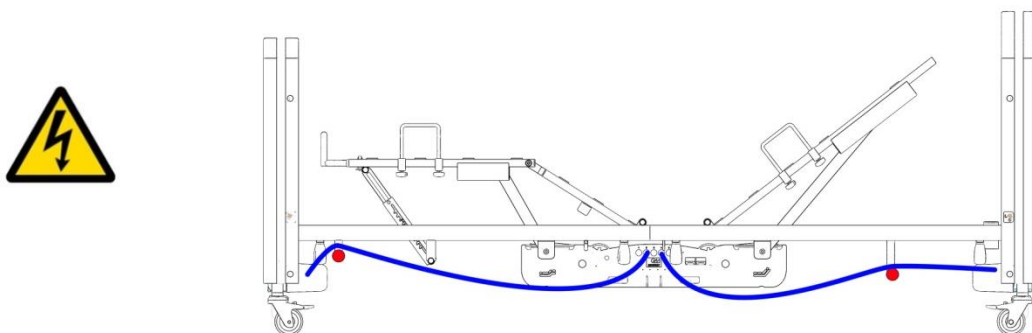
#### Before proceeding, ensure that:

- The cables are not excessively loose or tight between the strain relief and Control Unit.
- Pulling on the cables does not pull on the Control Unit connectors.

*If possible, you can briefly connect the power cable to a Mains outlet to test that all functions operate correctly, then disconnect from the Mains outlet before proceeding.*

Ensure that all cables are routed safely under the bed;

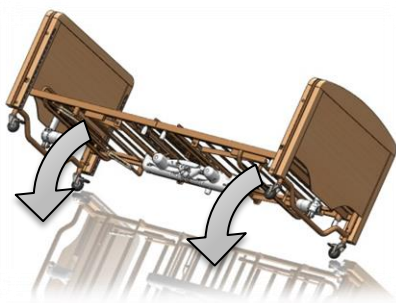
- The Head and Foot End actuator cables should be routed as in the illustration below, only going above the two bars highlighted in **RED**



- The Mains Cable and Handset Cable must not pass through any parts of the Bed Deck.

11

a



Ensure all castor brakes are applied, and fold the Head and Foot Deck sections back to the flat position.

Carefully tilt the bed so it comes to rest on all four castors. Walk around the Bed, and check that all 8 hand wheels are still secure, and that there is no excessive give between any components.

b

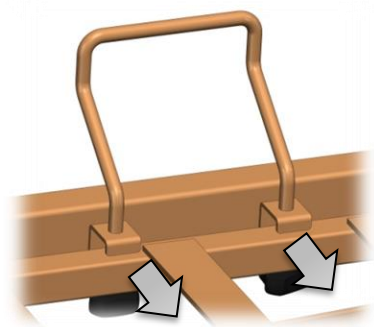


12

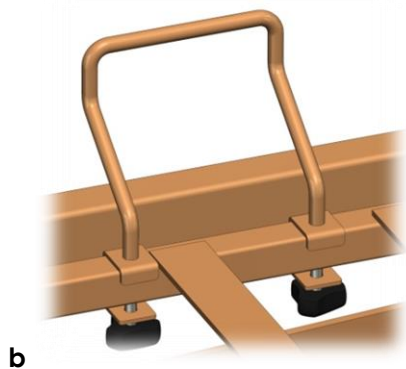
### Fit the Mattress Retainer Brackets

(Dependent on Bed model)

a



Loosen both of the thumbscrews on a bracket until it easily fits over the edge section of the movable section on the Head Deck. Position it approximately 12 inches from the top of the head section, so that the uppermost part of the bracket should be flush with the outside of the bed.



Tighten the thumbscrews to secure the Bracket in place until finger-tight. Do not force them, as the brackets may deform.

**NOTE ►** The design of the mattress retainer brackets may differ from illustration, but they should always be fitted with the bent wire component tilting away from the bed.



Foot End

Head End

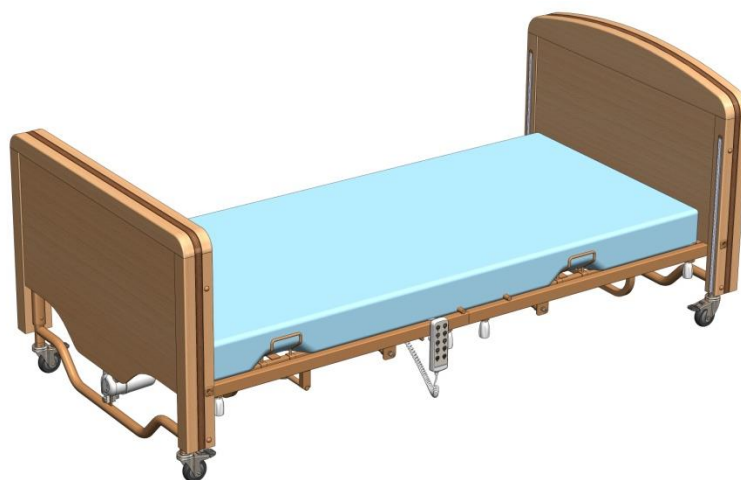
Repeat this process with each of the four brackets. All 4 of the brackets are required to ensure safe operation of the Bed.

The locations for each bracket are shown in the illustration to the left; Two either side of the Head Section, and two either side of the Calf Section.

13







Manoeuvre the Bed to its final position, plug in and switch on the mains supply. Check all movements correspond to those pictured on the Handset buttons when operated. Install the Mattress, locating it into all 4 Mattress Support Brackets, and the Foot Mattress Bracket. Finally, apply all 4 Castor Brakes.

**NOTE ►** If there is no response, check the Handset is not 'Locked Out'



Always ensure the mains cable is kept tidy, and out of the way of any obstructions or areas where it could pose a tripping hazard or become damaged or cut.


## 5 Care, Cleaning and Disinfection

	Always clean the bed before use, in particular when assigning new patients to reduce the risk of any possible cross infection.
	Before beginning any cleaning or disinfecting procedure, make sure you are wearing suitably protective clothing and gloves to prevent against skin irritation or other adverse skin reactions.
	Always dispose of cleaning agents in compliance with any instructions given with the cleaning agent and facility policies.
	Never use abrasive cleaning agents or pads on the bed, doing so will damage the finish of the Bed.
	If disinfection procedure involves large scale spraying of flammable disinfectants, special precautions should be taken to prevent against the risk of fire or explosion.
	Always dispose of all cleaning agents & waste in accordance with company procedures.

### 5.1 Cleaning

*To clean the Bed;*

- Firstly, remove mattress and bedding, leaving only the Bed frame.
- Use a soft cloth soaked in a solution of mild detergent and hot water to wipe the bed clean. It is recommended to begin with the uppermost Bed surfaces, and work systematically down towards the castors.
- Wipe all surfaces of the Bed with sodium dichloroisocyanurate (NaDCC) at a concentration of 1,000 parts per million (0.1%) of available chlorine using a soft cloth.
- Pay particular attention and care to areas where excess dust/dirt may have gathered.
- Wipe away any residue detergent solution using a soft cloth soaked in only warm water, and dry with a paper towel or dry soft cloth.
- Allow all cleaned parts to air dry thoroughly before replacing mattress and bedding.

	Always unplug the Bed from the main electricity supply before carrying out any cleaning, disinfecting or maintenance on the Bed and keep the plug away from all liquids.
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Do not disconnect any cables between actuators, Handsets or the Control Box; doing so could allow fluid ingress into electrical systems.



Never use any type of water or steam high pressure cleaner, jet or spray on any of the electrical components, use detergent/disinfectant on a damp cloth only.

## 5.2 Disinfecting

*To disinfect the Bed;*












- Clean the Bed, as described in [5.1 Cleaning](#).
- In cases where there has been contact with bodily fluids, e.g. blood, the concentration of NaDCC should be increased to 10,000 parts per million (1%) of available chlorine.
- Dry with a paper towel or dry soft cloth
- Allow all cleaned parts to air dry thoroughly before replacing mattress and bedding.


















Do not use phenol-based disinfectant solutions.

## 6 Operating Instructions

### 6.1 General Safety Instructions

	In order to avoid risk of crushing, always ensure there are no objects or people's limbs in any plane of movement of the Elite Bed before operating or adjusting any Bed functions.
	If the mental state, behaviour or other patient condition requires the restricted use of Bed functionality, the Handset can be locked using the Handset Lock-Out Key.
	Bed adjustments must only be carried out by, or in the presence of, suitably instructed and capable persons.
	When using a Patient Hoist, or similar medical device to transfer Patients to and from the Bed, always ensure there is adequate clearance around and under the bed.
	Always ensure the mains cable is disconnected from the wall socket before attempting to move the Bed.
	The mains cable exits the Bed from a point which will move during normal operation. The cable must be free and unrestricted by any furniture, objects, fasteners or walls and have sufficient slack in it to allow full travel of the Bed from lowest to highest position without becoming taught. Failure to do so can result in plug being pulled from the wall, halting Bed operation, or in worst case cable strain resulting in exposed electrical leads.
	If either the plug or mains cable becomes damaged, switch off and unplug the Bed from the electricity supply. Do not use again until the full mains cable and plug have been replaced by the manufacturer or other authorised service personnel.
	Never obstruct access to the Mains Plug, or locate the Mains Plug in such a way that it could not easily be disconnected in event of an emergency.
	To isolate the Elite Bed from the mains 240V electricity supply, switch off at the wall socket & remove the plug from the wall. To isolate the unit completely, also disconnect the batteries for the Emergency Lowering Feature (See <a href="#">6.10 Emergency Lowering Facility, Page 28</a> )
	Before moving the Bed, set the mattress platform in its lowest horizontal position before disconnecting from the mains supply, and then disengage all four castor brakes.
	The assembled Elite Bed is heavy when assembled. Be aware of this, and the damage it can cause to people and its surroundings when being moved.

	Never use the Bed in the presence of explosive or flammable gasses, such as may be present in anaesthetic agents.
	<b>NEVER</b> attempt to use an Elite Bed to transport Patients.
	Always ensure that the underneath of the Bed is kept clear at all times. Ensure the operation and movement of the Bed is never impeded by any obstacles such as bedside furniture, electrical sockets, skirting boards or other fixtures & fittings.
	<b>ALWAYS</b> take care when adjusting the Bed, and check beneath the Bed for obstructions, children, confused adults or other hazards each time before operating the Bed.
 E2060	The Elite Low Bed (E2060) can achieve a much lower mattress height than the Standard Elite. <b>As such greater care &amp; attention needs to be paid to objects in close proximity to the Bed.</b>
	Do not allow children to play with or under the Bed at any time.
	Renray Elite Beds need special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the Appendix; <u>12.1.1 Guidance &amp; Manufacturer's Declaration – Electromagnetic Immunity, Page 51.</u>
	<p>Whilst the electrical equipment fitted to this Bed has been tested according to;</p> <ul style="list-style-type: none"> <li>• IEC 60601-1-2:2005 Medical Electrical Equipment - Pt 1-2</li> <li>• IEC 61000-3 EMC - Pt 3-2</li> <li>• IEC 6100-3-3 am1, EMC - Pt 3</li> </ul> <p>Please check that other equipment used in the vicinity of this bed does not pose any reciprocal interference during specific investigations or treatments.</p>
	Portable and mobile RF communications equipment can affect Renray Electric Bed.
	The use of accessories, transducers and cables other than those specified with the exception of transducers and cables sold by the manufacturer of Renray Elite Beds as replacement parts for internal components, may result in increased emissions or decreased immunity of the Elite Bed.
	Do not continue to use the Bed if you notice any unusual noises, smells or any components becoming excessively hot.

	When routing cables/tubes/etc. through the Bed, always take precautions against passing them between parts of the bed that could trap, damage or shear them.
 	<p>NEVER route cables on the floor between the castors at the Head or Foot Ends of the Elite Bed. This is especially true if the cables are connected to the Bed End, such as the case for PAC systems, etc.</p> <p>Route any cabling through the sides of the bed, or above the lower steel bar.</p>
 <b>E2400</b>	The increased width of the Elite Wide Bed (E2400) should be taken into consideration. Extra precautions should be taken to avoid injury occurring to a care-giver when manouvering a patient at an increased reach.

## 6.2 Operator Safety Information

	Before putting Bed into service for the first time, ensure everybody who will or could operate the Bed has been instructed in safe and proper use of the Bed in accordance with these Instructions for Use.
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Always advise all Bed users about any hazards which could occur if the Bed is not handled and operated in the safe, correct manner. The Elite Bed is only to be operated by people who have been instructed on its safe and intended use and are familiar with this user manual.

**NOTE ►** *This applies to everybody who may operate the Bed, including temporary personnel.*

## 6.3 User Safety Information

Ensure the Owner has instructed you in the safe operation of the Bed. If you are unsure about any functionality or procedures, seek clarification before operating the Bed.

Adjustments to the Bed must only be carried out by, or in the presence of, suitably trained personnel.

If a fault is suspected with the Bed, immediately take the bed out of service and disconnect it from the electricity supply. Clearly mark the bed, identifying it as "out of service" to otherwise uninformed personnel and inform person or persons responsible for Bed maintenance.

## 6.4 Handset Functionality

The Elite Bed is supplied with an easy to operate handset to control all the powered functionality of the Bed. It is easy to use for both the Carer and the occupant of the Bed. If circumstances require it, the Handset can be “Locked Out” to render it inoperable to anybody without a Handset Lock-Out Key.



**NEVER** clip the Handset onto any moving or movable sections of the bed!

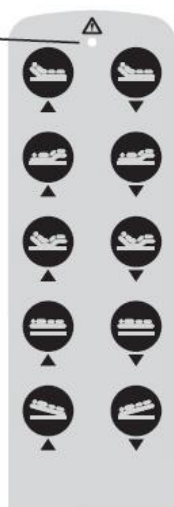


Always ensure the Patient is correctly positioned in the bed each time before operating the Handset.

- If the person adjusting the Bed is someone other than the Bed's occupant, make sure they are aware of what is going to happen before operating any Bed functions
- Always hang the Handset somewhere out of the way, (ideally on the Side Rails if fitted. If the Side Rails are not fitted, clip the Handset onto the non-moving Mattress Platform) when not in use to avoid accidental damage
- *Be mindful of trailing Handset lead!* Do not let it trail where it could pose a tripping hazard or where there is a risk it could be cut, caught, jammed or dirtied.
- Only activate one button at a time to reduce risk of overloading the electrical system
- Before leaving a Bed occupant alone with an unlocked Handset, ensure they have been risk assessed

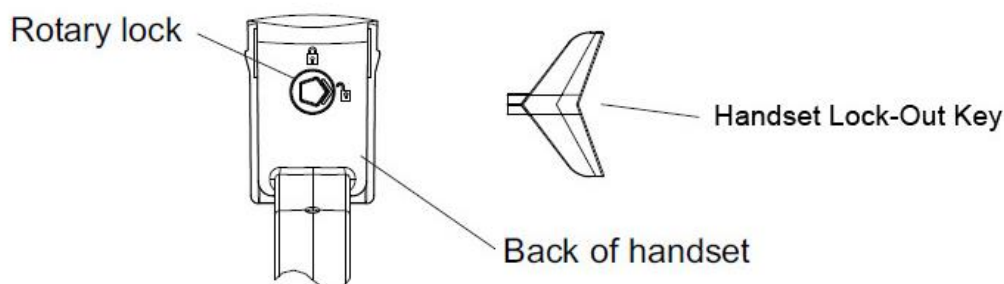
### 6.4.1 Button Functionality

Function LED



	Backrest	up ▲	▼ down
	Footrest	up ▲	▼ down
	Reset Back+footrest	up ▲	▼ down
	Bed Height	up ▲	▼ down
	Bed Tilt (head down)		
	Bed Tilt (head up)		

### Back of handset



**Figure 3 – Handset Buttons**

- The Function LED is lit when a button is depressed and the bed is operating.



**The 'Bed Tilt' function can place Patients in dangerous positions.** This function should only be operated after reading [6.6 Bed Tilt Feature](#), (Page 22) thoroughly.

### 6.4.2 Locking the Handset

The Handset can be locked so that pressing the buttons will not operate the bed. To do this, insert the Handset Lock-Out Key into the lock on the rear of the handset and rotate it until the arrow indicated the desired state. The arrow pointing towards the open padlock is 'Unlocked' and the closed padlock is 'Locked'.

The Key is supplied attached to the handset cord with a cable tie. This tie can be cut to allow the key to be located on a nurse's keychain, etc.



Take care not to damage the cord if cutting the cable tie.



Keep the Handset well away from any devices or items which may give off strong magnetic fields, this could result in the handset locking or unlocking unintentionally.

## 6.5 Emergency Lowering Feature

In cases of emergency, the Elite Bed mattress platform should be horizontal. This can be achieved by with the Handset and the Emergency Lowering Facility. (See [6.10 Emergency Lowering Facility](#), Page 27)

## 6.6 Bed Tilt Feature

The Renray Elite Beds have the ability for the Head & Foot ends to be individually raised or lowered, tilting the bed. This can be especially helpful for adjusting the sitting position of the Patient whilst they are seated in the Bed.



**For some medical conditions, laying a patient in the head down - feet up tilted position can be extremely dangerous to a patient!** This feature should only ever be used by qualified personnel and after the Patient has been Clinically Risk Assessed.

#### Raise Head End

This button will raise the Head End of the bed



#### Raise Foot End

This button will raise the Foot End of the bed

To return the Bed deck to a horizontal position, the Bed Height buttons can be used to lower the Bed, when the Foot/Head Ends reach their lowest position they will cut off individually until the Bed is fully lowered & flat.

## 6.7 Manual Leg Section

When the knee break has been raised using the Handset, it is possible to lift the Calf Section so that the angle of the Calf Section can be adjusted. This is a manual procedure.

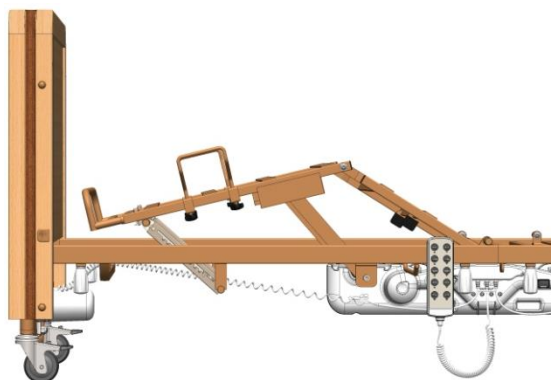


Figure 4 – Knee Break only raised

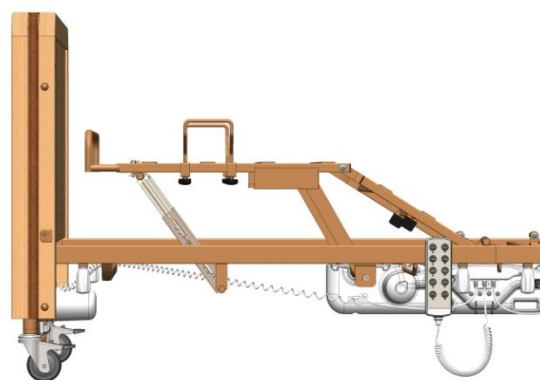


Figure 5 – Thigh and Calf Sections raised



In order to avoid risk of trapping, always ensure there are no objects or people's limbs under the Calf Section before manually adjusting it.



The Patient should be assessed for their suitability for this feature. It should only be adjusted with the approval of suitably qualified persons to prevent discomfort or possible injury to Patient.

To raise the Calf Section;

- First, raise the Knee Break to the desired position using the Handset. (See [6.4.1 Button Functionality](#), page 21).

- Stand behind the Foot End of the Bed and grip the long mattress support with both hands. Lift it carefully until the desired position is achieved, then gently lower until it locks into place.

#### To lower the Calf Section;



The Calf Section must be fully raised before it can be lowered. Always check that this is acceptable to the patient before proceeding.



Never sit or lean on the Calf Section while it is raised.

- First, always check that there is no obstruction, such as bedding, cables or limbs under the calf section
- Lift the Calf Section (as described in 'To raise the Calf Section' above) until it can't go any further, then lower gently.
- If desired, the knee break can now be lowered using the Handset so the Leg Section lies flat.

## 6.8 Castors

All four bed castors have braking functionality. All four of these brakes should be applied in normal use.



#### **Castor in Un-Braked / Free Position**

When the foot pedal is in the raised position, the brake is not applied

##### To apply the brake;

Press down on the pedal with foot until it locks in place. The wheel should not revolve.



#### **Castor in Braked / Locked Position**

When the foot pedal is in the lower position, the castor brake is applied.

##### To release the brake;

Press foot on the now raised part of the pedal until the pedal springs back into its un-braked / free position. The wheel should now be free to revolve.



Whenever the Bed is not being moved, always ensure **all four** castors have the brakes **applied**.

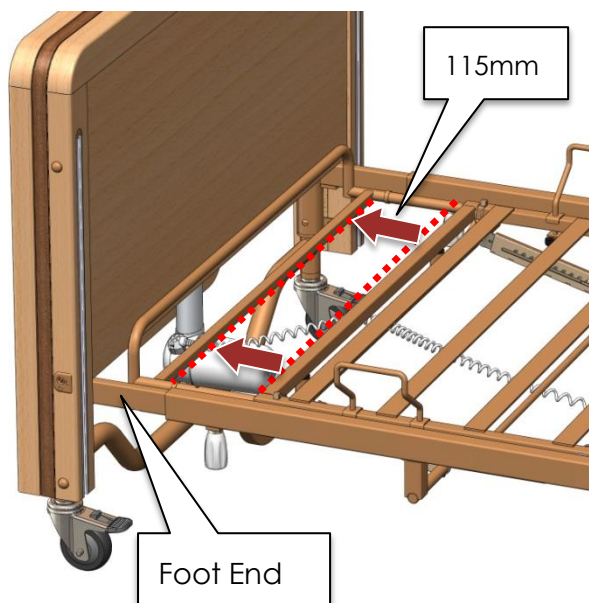


**NEVER** attempt to move the Elite Bed with **any** of the Castor Brakes applied.



When the brakes are applied, ensure all 4 wheels are in direct contact with the floor, and that the Bed cannot slide across the floor surface.

## 6.9 Bed Extension



The Renray Elite Beds can be extended by 115mm, taking the overall length from:

**E2000, E2060 & E2400**

1850mm to 1965mm.

**E2000L & E2060L**

1965mm to 2080mm

This option may be required for some taller than average Patients. In order to use this feature, an additional "Mattress Squab" component is required in conjunction with the smaller Mattress for each bed model. Alternatively, there is a range of different length Mattress available. Contact Renray Healthcare for details.

The extension is only at the Foot End of the Bed

The image on the left shows the Bed frame assembled in its extended configuration.

### NOTE ►

*There are two slight variations of the leg extension which may vary depending on Elite Bed model. The differences are detailed below the instructions.*



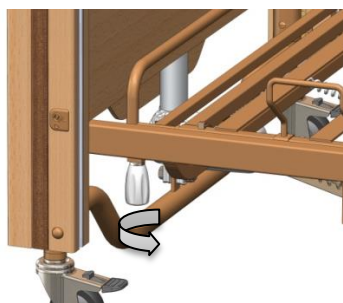
In order to use the Bed in its Extended Configuration, you **MUST** have the additional "Mattress Squab" accessory or a correctly sized mattress. See [7.2 Mattress](#), Page 30



If Side Rails are required, **ALWAYS** ensure you have the **correct length side rails** fitted. If ever in doubt, contact Renray Healthcare for guidance.

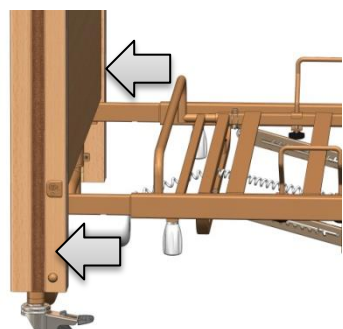
## Instructions

1



Firstly remove the Mattress. Loosen one Hand wheel securing the Foot End to the Foot Deck, and remove one Hand wheel

2



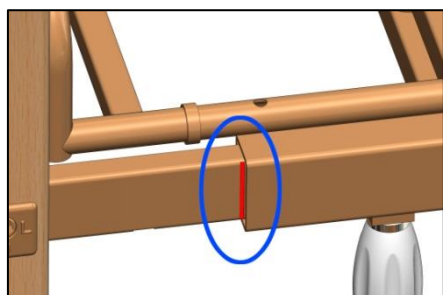
Pull the Foot End away from the Foot Deck, until the Extended Locator Tab lines up with the hole you removed the Hand wheel from.

Replace the Hand wheel, and pull/push the Foot End to ensure the Hand wheel is in the notch before tightening fully.

Remove the opposite Handwheel fully, and repeat this process.

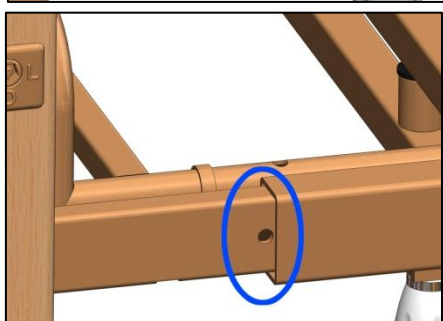
### **NOTE ►**

#### **Deck Extension Variations**



**Line Detail** – The mark to indicate the correct location of the extended Foot End is indicated by an indented red line.

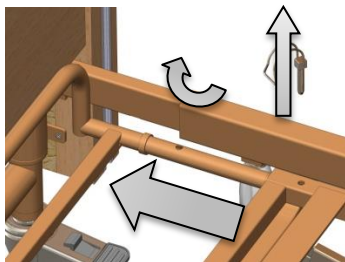
The instructions illustrate this model.



**Hole Detail** – This variation replaces the Line detail with a single hole through the prong.

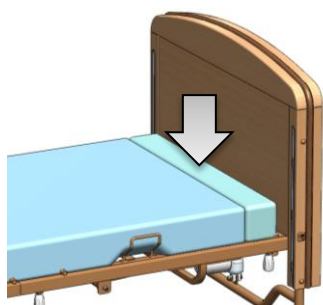
On this version, the deck should line up with the edge of the hole (as illustrated here). If you wish, you can temporarily insert the bronze pin (see next step) through this hole to help aligning the deck. Once the handwheels are tightened, pull out the Foot Mattress Bracket, and replace the bronze pin.

3



1. Lift the wire hook on the Calf Section, and remove the bronze pin from each side.
2. Standing behind the Foot End, grip the Foot Mattress Bracket and pull it towards you until the next hole lines up in the Calf Section.
3. Replace both pins, and clip the wire hook back over to lock the pin in place.
4. Ensure the Foot Mattress Bracket cannot slide in or out of the Calf Section before proceeding.

4



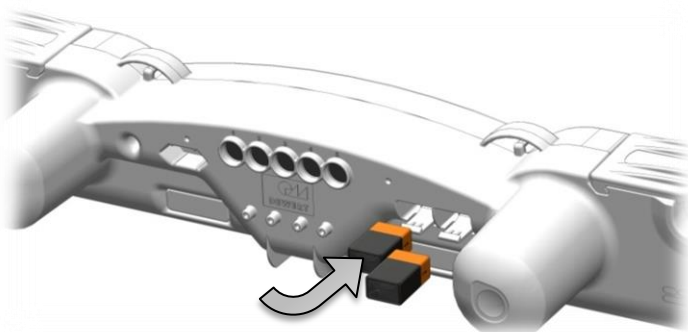
Now that the Mattress Platform is extended, it must be fitted with either:

- The short Mattress for your particular model AND a compatible Mattress Squab fitted at the head end of the Bed (as illustrated).
- A single Mattress of the correct length.

**Contact Renray Healthcare for mattress types & sizes.**

## 6.10 Emergency Lowering Facility

The Renray Elite Beds come with a facility to provide limited functionality of the bed in an emergency situation. In the event of a power failure (or disconnection from the main electricity supply) the Bed can perform a single emergency operation, for example returning the Mattress Platform to a flat position, or lowering the Bed Deck.




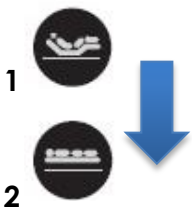


### Installation

Insert two 9V '6LR61' type alkaline batteries into the holders on the Control Unit as shown. Ensure that all battery terminals connect together correctly, and that the batteries are securely held in place.

### Using the Emergency Lowering facility

In the event of Mains power to the Bed being removed, the Emergency Lowering Facility will power the Unit's operation for the **next single button press ONLY**. After this button press, the Control Unit will no longer operate until Mains power is restored.

	When operating the Emergency Lowering Facility, make certain you <b>hold the handset button until the Bed has reached your intended position</b> , or the patient will become stranded. This Facility will only power a <b>SINGLE BUTTON PRESS</b> .
	Always keep a spare pair of 9V '6LR61' batteries somewhere easily accessible in case of a power cut.
 	Before utilising the emergency feature, consider which operation you need. These batteries only have sufficient power to perform <u>one lowering operation</u> : <ul style="list-style-type: none"><li>• <b>to flatten the deck (1)</b></li><li>or</li><li>• <b>to lower and level the bed (2)</b></li></ul>

### Replacement

Both batteries should be replaced at least every year, and after each time the System is operated without Mains power.

## 7 Accessories



**DO NOT** use accessories that have not been designed or approved for use with your particular model/version of Elite Bed.



**When using more than 1 accessory, always check their compatibility.**

For example, to use a 'mattress overlay with an extended bed', you would require a Mattress Squab or extended Mattress; but if side rails were also required, both Extended Side Rails and Side Rail Height Extensions must also be fitted.



The Patient should be Clinically Risk Assessed as to their suitability for an accessory before fitting it to the Bed by suitably qualified personnel.

### 7.1 Available Accessories

Accessory Name	Qty. / Details
Standard Side Rails, Set of 4	4 x Side Rails, 8x End Caps & 4x Glides
Extended Side Rails, Set of 4	4 x Extended Side Rails, 8x End Caps & 4x Glides
Extra Extended Side Rails, Set of 4	4 x Extra Extended Side Rails, 8x End Caps & 4x Glides
Side Rail Height Extensions	2x
Lifting Pole	1x
Side Rail Bumper Pads	2x
Fall Mat	1x

Mattress & Mattress Squabs	Contact Renray Healthcare or your local representative for recommended available products
----------------------------	---

## 7.2 Mattress

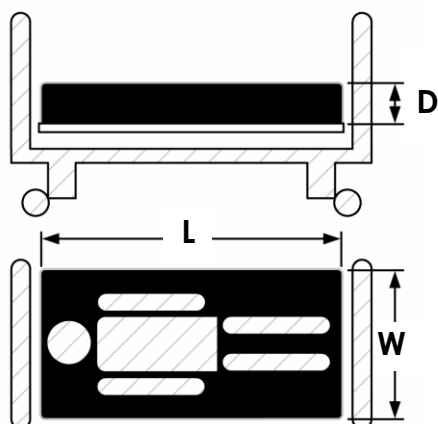


When fitting the Mattress, always ensure it fits snugly inside of all the Mattress Retainer Brackets. This will prevent the Mattress from moving when the Bed is operated.

The standard foam Mattress may not be suitable for all Patients' conditions. This must be determined by a qualified person Clinically Risk Assessing each Patient before use.

The standard mattress' for use with Renray Elite Beds can be purchased from Renray Healthcare.

**Only ever use a Mattress approved for use with your Renray Elite Bed Model by Renray Healthcare.**



Mattress Dimensions (in mm)			
Bed	Length (L)	Width (W)	Depth (D)
E2000	1850 Standard 1965 Extended	850	150
E2400	1850 Standard 1965 Extended	1100	150
E2060	1850 Standard 1965 Extended	850	150
E2000L	1965 Standard 2080 Extended	850	150
E2060L	1965 Standard 2080 Extended	850	150



Fitting a Mattress with different dimensions and/or properties to those specified may cause hazards that could result in Patient injury.



If using a replacement or overlay mattress, Side Rail Height Extensions must **ALWAYS** be used. (See [7.4.3 Side Rail Height Extensions](#), Page 38)



If the Bed is being used in its Extended Length configuration, always fit either **only** the Extended Mattress, or the **Standard Mattress and Mattress Squab**, which will extend the Standard Mattress to full length of the extended Bed. (See 6.9 Bed Extension, Page 25)

### 7.3 Lifting Pole



The Lifting Pole is intended to assist or support a Patient to change position by providing a gripping support above the patient.

The suitability of this accessory to the Patient should be assessed by a qualified person, and should only be used under the supervision of a Carer.

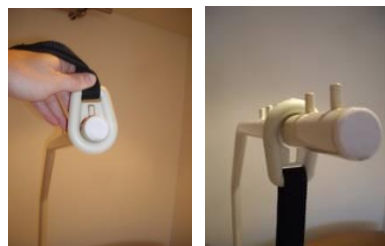
#### Installation

1



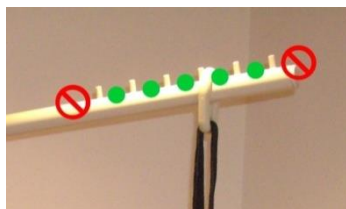
1. Locate accessory socket
2. Insert Lifting Pole
3. Rotate the pole until the locating lug fits into the slot on the accessory socket
4. Check Pole is secure before use

2



The position of the strap on the lifting pole can be adjusted. To do so;

1. Check there is no weight on the strap/handle of the Lifting Pole.
2. Rotate the collar (shown, image left) until the keyway lines up with the pegs
3. Slide the collar to the desired location, and then rotate the collar back to its normal position.



Only locate the Collar between two pegs, **Never** locate the collar before the first peg or after the last peg, this will allow the Grab Handle to fall or come away from the Lifting Pole. Acceptable locations are shown in green on the image to the left.



Lifting Pole maximum load = **75Kg**  
Do not exceed the maximum load!



**ALWAYS** locate the Collar between two pegs. Locating the Collar before the first peg or after the last peg will allow the Grab Handle to come away from the Lifting Pole or slide down to the Bed.



Do not use Lifting Pole for anything other than assisting patients change position in the Bed.



Regularly check the condition of the Lifting Pole. If the Lifting Pole becomes loose or distorted, or the handle or straps show any signs of loose stitching, fraying, misuse or damage, replace the affected component(s) immediately or take out of service.

## 7.4 Side Rails



The Side Rails are designed to prevent the occupant from falling out of the Bed. They can be raised and lowered to allow for quick access to the patient.

The Patient must be risk assessed to ensure their suitability for use with this bed.

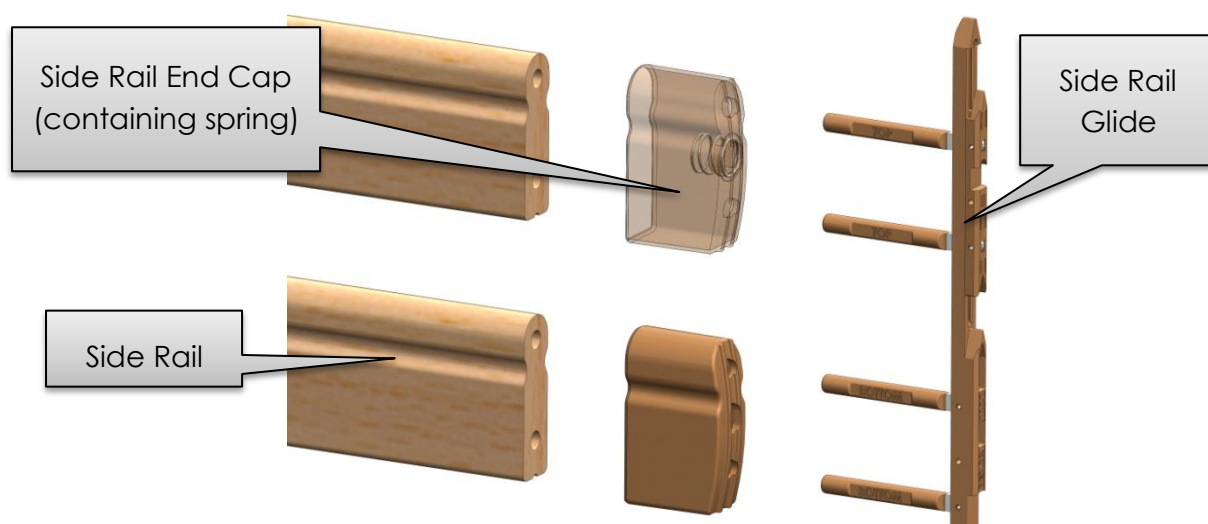
To prevent accidental fitting of incorrect side rails to the Elite

Beds (which can result in potentially dangerous situations), the Renray Side Rail system has been designed to be non-compatible with other side rail systems.

**Compatible Bed / Side Rail Size Table**

	E2000		E2060		E2400		E2000L		E2060L	
	Standard	Extended	Standard	Extended	Standard	Extended	Standard	Extended	Standard	Extended
<b>Side Rail Length</b>										
<b>Standard</b>	✓		✓		✓					
<b>Extended</b>		✓		✓		✓	✓		✓	
<b>Long Extended</b>								✓		✓

## Part Identification



## Installation

1



First, ensure it is safe to raise the bed to its maximum height, and then do so.

Locate all the 4x Side Rail Glides, and raise the bed

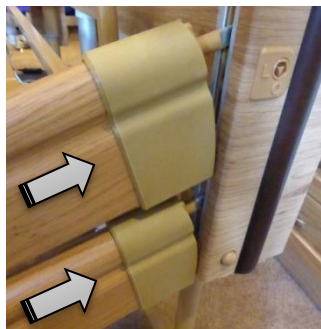
**NOTE ►** If your Elite Bed is fitted with Side Rail Locks, you will need to ensure they all 4 of them are set to 'Unlocked/Off' (The arrow pointing towards the "○" – See 0 Side Rail Locks, Page 37)

2



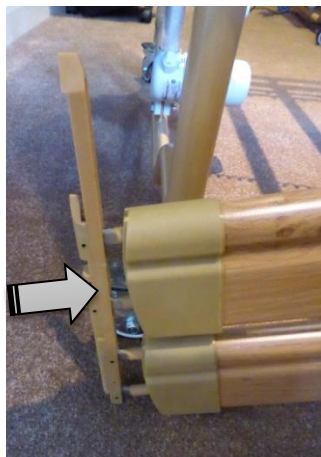
Press the bottom button, and slide a Side Rail Glide into the Side Rail Slot on the Head End until the bottom finger is well above the button, release the button, and lower the guides until they come to rest.

3



Fit the Side Rail End Caps to the Side Rails, and then slide two Side Rails onto the Bottom and Top Side Rail guides, leaving their free end resting on the floor.

4



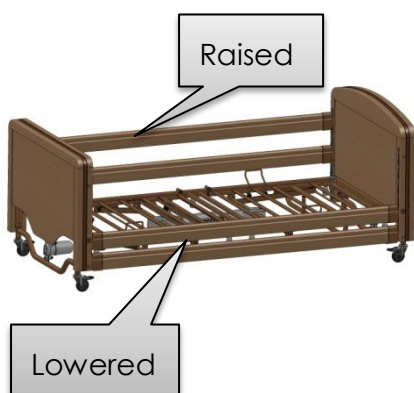
Insert another Side Rail Glide into the free end of the side rails as shown.

5



Insert this Side Rail Glide, with Side Rails attached, in the same way described in step 2.

6



Repeat steps 1 through to 5 on the opposite side of the Bed

To raise the Rails, simply lift the Top Rail until both the Head and Foot Ends click into place.

To lower the rails, securely hold and lift the Top Rail and press the top release button. Lower one end of the rails gently until it comes to rest on the lower button, then repeat at the other end of the Bed.

7



To remove the Side Rails;

Ensure it is safe to raise the Bed, and then raise it to its highest position. Hold & lift the bottom rail and press in the bottom Side Rail button to remove each glide.

Make sure the Rails are in their lowest position and proceed through steps 1 to 5 in reverse. Be careful not to drop the rails when depressing the Lower Side Rail Button.



### Incorrect

Handset Cable goes between a Side Rail and the Mattress Platform.



### Correct

Handset Cable goes outside of both fitted side rails.

**When using the Side Rails, it is essential the following instructions are strictly adhered to;**



Only suitably instructed personnel are allowed to fit and/or use Side Rails.



All Patients must be clinically risk assessed before fitting Side Rails to the Bed.



The Carer should keep a tight grip on the Side Rails when raising or lowering the Rails to avoid them dropping.



The Side Rails are only intended to prevent the Patient from falling from the Bed. Under no circumstances should they be leaned on, climbed on or abused.



When operating or adjusting the Bed Sections, the Patient's limbs must not protrude beyond the Mattress base or touch the Side Rails.



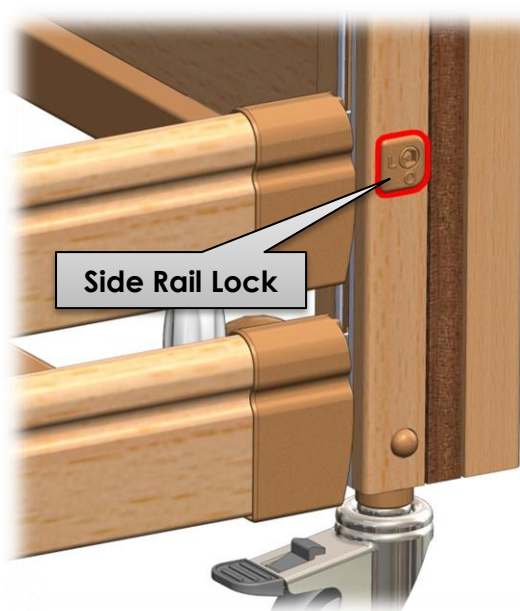
The Side Rails will only provide protection against the patient rolling out of the Bed when all the Deck Sections (Head, Thigh & Calf) are laid flat.



When moving the Bed with a Patient, it is highly recommended that Side Rails are raised.

	If using ANY replacement mattress or mattress overlay with any Side Rails, the correct Side Rail Height Extensions <b>MUST</b> be fitted. (see <u>7.4.3 Side Rail Height Extensions, Page 38</u> )
	<b>NEVER</b> attempt to force a Side Rail Glide to fit a Bed or a Side Rail – they should all easily fit together. If they do not, check parts are all correct (i.e. as illustrated in this manual), and that they are not damaged.
	Although the Renray Elite Side Rail System is designed to be incompatible with other Side Rail systems, there may be instances where incorrect parts will fit on incorrect beds. <b>ALWAYS</b> ensure all Side Rail Components are from the Renray Elite Side Rail system.

### 7.4.1 Side Rail Locks



The Renray Elite Beds come with the option of Side Rail Locks. The Locks provide a safe, quick, neat and reliable means of restricting unauthorised personnel raising the Side Rails.

When the locks are engaged, the Side Rails cannot be raised, and (if no side rails are fitted) Side Rails cannot be fitted.

The Locks are designed so that they will not lock the Side Rails in the 'Up' position – they will disengage themselves when the Side Rails are lowered.

A set of Locks consists of four locks (2x left hand & 2x right hand) and a Key. The Locks are incorporated into the wooden parts of Head and Foot Ends. There is one lock located on each corner of the bed, between the Side Rail Buttons.



#### To use the Side Rail Locks

To "Lock" the Side Rails down, lower the Side Rails then insert the Key into the slot and turn it so that the arrow points to the 'LOCKED' "L" position (you should feel it click when in location). Repeat this on the opposite end of the Side Rail.

To "Open" the locks, simply use the Key to turn the arrow to the 'Open / Unlocked' "O" position.

---

#### **LOCKED**



With the arrow in this position, the Side Rails:

- Cannot be raised
- Cannot be installed on the bed
- Can still be lowered
- Can still be removed from the bed

---

#### **OPEN / UNLOCKED**



With the arrow in this position, the Side Rails will function normally, and can be raised, lowered added & removed freely.

---



ALWAYS ensure that both the Locks on the same side of the bed / same Side Rails are in the same position.



If the Side Rails are raised, and the Lock is then engaged (turned to “L”) the side Rails **ARE NOT LOCKED IN THE UP POSITION**. The Side Rails will still lower as normal, and the Locks will return to the “Unlocked” position

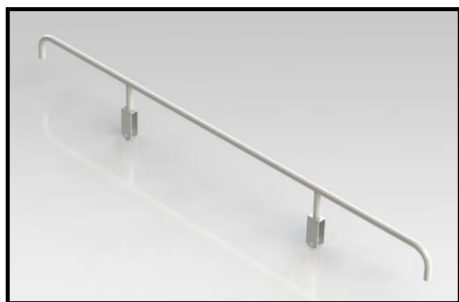
#### 7.4.2 Extended & Extra Extended Side Rails

If using the Bed in its extended configuration (see [6.9 Bed Extension](#), Page 25), and the use of Side Rails is required, there are separate Extended Side Rails available, and Extra Extended side rails for the E2000L and E2060L, as an accessory from Renray Healthcare. These are fitted, removed and used in exactly the same method as the standard Side Rails.



**ALWAYS** ensure you are using the **correct length Side Rails**. If ever in doubt, contact Renray Healthcare for guidance.

#### 7.4.3 Side Rail Height Extensions



A single Side Rail Height Extension

The Side Rail Height Extensions are additional rails that can be fitted onto the upper rail of the Side Rails/Extended Side Rails to increase their height. This will allow the use of additional layers on top of the Mattress or a deeper mattress (such as for Pressure Area Care).



If using **ANY** replacement mattress or mattress overlay with Side Rails or Extended Side Rails, Side Rail Height Extensions **MUST** be fitted.

#### 7.4.4 Side Rail Bumper Pads

The Side Rail Bumper Pads can be fitted over either the Standard or Extended Side Rails to offer the Patient increased protection. For further information on this accessory, please contact Renray Healthcare (see [11.3 Contact Renray Healthcare](#), Page 50)

## 7.5 Fall Mat

The Fall Mat accessory is to provide some protection to Patients if they roll out when Side Rails are not fitted to the Bed. For further information on this accessory, please contact Renray Healthcare (see [11.3 Contact Renray Healthcare](#), Page 50)



When using the Fall Mat, always leave the Bed at its lowest height.

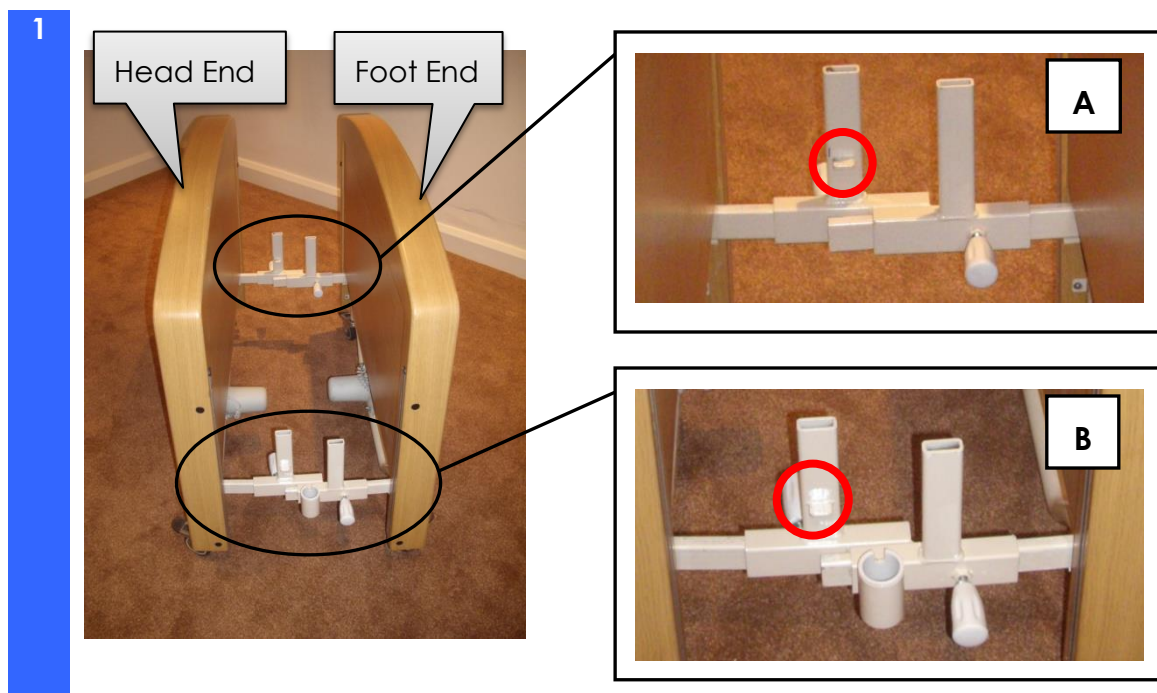
## 8 Storage and Transport



When the Bed needs to be moved or packed away for storage, it can be assembled onto the optional Transport Brackets to take up minimal floor space and allow easy manoeuvring using the Bed's castors.

### 8.1 Assembling onto Transport Brackets

In order to assemble the Renray Elite Bed onto the brackets, it is important it is assembled according to these instructions. Fitting the transport brackets incorrectly can cause substantial damage to wooden panelling on the Head and Foot Ends. To identify the Head End and Foot End, refer to [\*Figure 1 – Head & Foot End Identification\*, Page 7.](#)



Firstly, ensure the Head and Foot Ends are both fully lowered, and the brakes are applied to the castors. Disassemble the Bed in the exact reverse order of assembly (see [4.3 Assembly Procedure, Page 9](#))

Use the Transport Brackets and 4 hand wheels to secure the Head and Foot Ends together **exactly** as shown.

Each Transport Bracket has two tube sections, and one has a Pole Locator for an I.V. or Lifting Pole.

**Pay Particular attention to the following points and orientations;**

- The Transport Bracket with the Pole Locator should be orientated with the Pole Locator on the **OUTSIDE** of the assembly.
- The Transport Bracket tube nearest the Pole Locator must be fitted to the **FOOT END** of the bed.
- There are two raised tabs on the uprights of the Transport Brackets (circled in red on images 'A' & 'B'). These must both be located towards the **HEAD END** side of the Brackets.
- The 'Prongs' of the **FOOT END** should finish **FLUSH** with the end of the Transport Bracket tubes they are located in.
- The 'Prongs' on the **HEAD END** should be **FULLY** inserted into the Transport Brackets.

Once all the above points have been addressed, tighten the hand wheels.

2



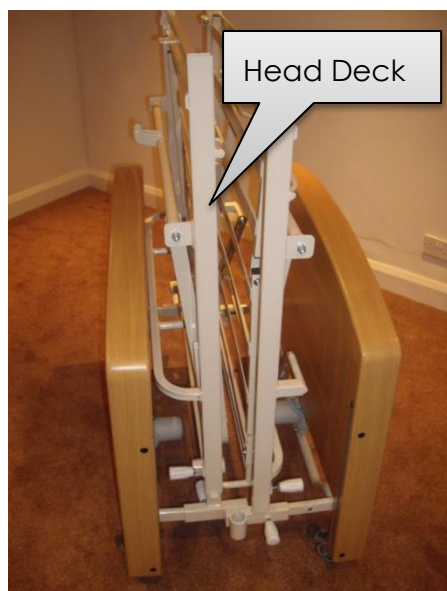
#### **Insert the Foot Deck**

Locate the Foot Deck onto the two uprights nearest to the Foot End. The Mattress side of the Foot Deck should be facing the Head End (This allows the Foot Mattress Bracket to locate below the tabs on the remaining two uprights), and the Foot Mattress Bracket should be at the bottom, as shown.

When locating the Foot Deck;

- Be careful not to damage the woodwork of the Head and Foot Ends
- Be aware the calf and thigh sections may swing – if you wish, they can be secured in place with a cable tie in a prominent and easily visible location

3



### Insert the Head Deck

Locate the Head Deck onto the remaining two uprights (closest to the Head End), so that the two decks have their mattress sides facing each other, and the ends of the decks that join each other both are both at the top.

When locating the Head Deck;

- Be careful not to damage the woodwork of the Head and Foot Ends
- Ensure you check the orientation of the head deck before lifting it into place; any incorrect orientation can cause jamming and/or damage to the Head End woodwork

4



(Both Sides)

1. Locate the remaining 4 Handwheels into the Head and Foot Decks as shown, and secure the Decks to the Transport Brackets with them.
2. If you have an I.V. Pole or Lifting Pole it can now be located in the Pole Locator on the Transport Bracket. Ensure the tab on the Pole locates in the slot in the Pole Locator.
3. Release the castor brakes and wheel to place of storage. Re-engage the castor brakes.
4. Collect the remaining Bed components not assembled onto the Brackets and box them together. Store them with these Instructions for Use and the assembled Bed sections.



If you have the removable Mattress Retainer Brackets, do not assemble the Bed Decks onto the Transport Brackets with the Mattress Retainer Brackets fitted. They will jam against each other and cause damage to the Bed.

## 8.2 Storage & Transport Conditions

When storing the Bed, following the guidance below will help to ensure the working life of the Bed.

### **Ensure the Renray Elite Bed is stored & transported;**

- Assembled onto the Transport Brackets (*only components that can be assembled onto the brackets apply*)
- With all four brakes applied (when stationary)
- Fitted with a dust cover
- In a clean, dry and well ventilated area
- Between -20°C and +50°C
- In relative humidity between 30% and 75%
- In an atmospheric pressure between 700hPa and 1060hPa
- with the Emergency Lowering Batteries removed





If the Bed is stored with Emergency Lowering Batteries fitted, there is a possibility of them leaking/corroding, which will cause irreversible damage to Control Unit. Always ensure they are removed for storage.

## 9 Troubleshooting

FAULT	POSSIBLE CAUSES	SOLUTION
<b>Bed does not respond</b>	Handset functionality has been Locked-Out	Locate Handset Lock-Out Key and unlock
	Not connected to mains supply	Check mains cable is plugged fully into wall socket
		Check socket is turned on & working
		Check mains cable is properly connected to Bed Control Unit
		Check fuse in mains plug
		<b><i>If one of the above solutions works, replace both emergency lowering batteries with new ones.</i></b>
<b>Limited or incorrect Bed response</b>	Thermal Fuse Tripped	Leave to cool, retry after 60 minutes
	Handset not connected	Check Handset cable is properly connected to Bed Control Unit
	One or more actuators not correctly plugged in	Check the cables from the Control Unit to each actuator, and check all plugs are properly connected to the corresponding Control Unit sockets. Ensure the 'Head End' of the Control Unit matches with the Head End of the bed.
	Handset not correctly plugged in	
<b>Slower movement speed</b>	Control Unit fitted wrong way around	
	Actuators connected to incorrect sockets	
<b>Slower movement speed</b>	Bed is running on Emergency Lowering Batteries	Check the condition of Mains Cable, and ensure the Bed is connected to Mains electricity supply. Replace both Emergency Lowering batteries
<b>Bed moves when entering/exiting</b>	One or more Castor Brakes not applied	Check that every castor brake is fully applied
	Castors not in direct contact with floor	Check each castor is in direct contact with the floor

## 10 Technical Data

### 10.1 Safe Working Conditions

<b>Maximum Safe Working Load</b> <i>(This includes the weight of mattress and all fitted accessories)</i>		<b>Maximum Patient Weight</b>			
					
$\leq 180\text{Kg}$ $(28\text{st})$		$\leq 150\text{Kg}$ $(23.5\text{st})$			
Elite Bed Model	E2000	E2400	E2060	E2000L	E2060L
<b>Mattress Size</b>					
Width	910	1100	910	910	910
Depth	150	150	150	150	150
Length					
Without Extension	1850	1850	1850	1965	1965
With Extension	1965	1965	1965	2080	2080
Operating Noise Level	< 65 dB				
Safe Operating Temperature	+10°C to +40°C				
Relative Humidity	30% to 75%				
Barometric Pressure	700 hPa to 1060 hPa				
Product Life	10 Years				

### 10.2 Dimensions







Elite Bed Model	E2000	E2400	E2060	E2000L	E2060L
Overall Length (mm)	2095 / 2210 Ext'd			2210 / 2325 Ext'd	
Overall Width (mm)	1040	1350	1040	1040	1040
Mattress Platform Height					
Lowered	275	275	205	275	205
Raised	670	670	600	670	600
Bed Tilt Feature	10° Head down 10° Foot down				
Max Backrest Angle	0°-80°				
Max Leg Elevation	0°-30°				

## 10.3 Component Weights

<i>Elite Bed Model</i>	<i>E2000</i>	<i>E2400</i>	<i>E2060</i>	<i>E2000L</i>	<i>E2060L</i>
Foot End (Kg)	32.2	42.7	32.2	32.2	32.2
Head End (Kg)	35.2	45.7	35.2	35.2	35.2
Head Deck (Kg)	18.8	23.4	18.8	18.8	18.8
Foot Deck (Kg)	18.8	24.1	18.8	19.5	19.5
Side Rails - Set (Standard)	<b>19 Kg</b> (4x Side Rails, 4x Glides, 8x End Caps)			N/A	
Side Rails - Set (Extended)	<b>20 Kg</b> (Total – 4x Side Rails, 4x Glides, 8x End Caps)				
Side Rails - Set (Long Extended)	N/A			<b>21 Kg</b> (4x Side Rails, 4x Glides, 8x End Caps)	
Control Unit	5 Kg				
Handset	0.2 Kg				
Deck Joining Bars (x2)	1.4 Kg (Total per pair)				
Full Bed Assembly (with Extended Side Rails)	143.6 Kg	159.5 Kg	143.6 Kg	144.3 Kg	144.3 Kg

<i>Accessories</i>	<i>E2000</i>	<i>E2400</i>	<i>E2060</i>	<i>E2000L</i>	<i>E2060L</i>
Mattress	14 Kg	16 Kg	14 Kg	14.6 Kg	14.6 Kg
Mattress Squab	0.6 Kg	N/A	0.6 Kg	0.6 Kg	0.6 Kg
Lifting Pole	7.8 Kg				
Side Rail Bumper Pads	5 Kg				
Transport Brackets (x2)	2.6 Kg (total)				
Side Rail Height Extensions (x2)	6 Kg (pair)				







## 10.4 Electrical System Data

Supply Voltage	230/240V AC, 50/60Hz
System Operating Voltage	24V DC
Fuse (internal)	1.6 Amp
Fuse (plug)	5 Amp
Duty Rating	Intermittent ~ (2 mins/18mins)
Emergency Battery	Two (2x) 9V '6LR61' Alkaline Batteries
Control Unit Electrical Protection	<div>  Class II            Type B         </div> <div>  For Indoor Use Only         </div> <div>  Do not dispose of with domestic waste         </div>
 The CE mark on this product demonstrates conformity with the Medical Devices Directive 93/42/EEC	
Ingress Protection	IPX4
 <b>To isolate unit from Mains Supply;</b> switch off at wall socket and remove plug.	

## 11 Maintenance & Warranty

### 11.1 Maintenance

In order to keep the Renray Elite Bed maintained and in a safe working condition, please adhere to the following instructions.

	Only suitably qualified personnel who have read these Instructions for Use should perform any form of servicing on the Bed
	Incompatible parts can create hazards; Only use Renray Healthcare approved parts
	Any faults, defects, damage or excessive wear must be dealt with immediately or the Bed should be taken out of service
	A full service of the Bed should be performed by Renray Healthcare or by suitably qualified and trained personnel; <ul style="list-style-type: none"><li>▪ at <b>least</b> once per year</li><li>▪ after long periods of inactivity</li><li>▪ if a fault or damage has been found with the Bed</li><li>▪ if any user raises concerns about the functionality of the Bed</li></ul>
	Never attempt to perform maintenance, exchange parts or disassemble the Bed whilst it is occupied
	Never attempt to move an assembled Bed that is structurally unsound, or has damage to castors or other load-bearing parts

#### 11.1.1 Routine Checklist

This checklist should include all the points below, and should be carried out at least weekly, more frequently if the Patient or environment demands it.

- **Legibility of all Bed, Accessory & Handset labels**  
Visual inspection
- **Electrical System functionality**  
Operate each Handset button and check corresponding Bed function operates satisfactorily. Also test the Handset lock-out function.
- **All 8 hand wheels are secure**  
Hold Hand wheel with fingers and check it has not become loose
- **All electrical cables are in good order**  
Visual inspection to ensure there are no signs of cracks / crushing or general damage to insulation.
- **Check Emergency Lowering batteries**  
Ensure both 9v batteries have been fitted to the bed for less than 12 months, are a matching pair, and are not past their expiry date.

### 11.1.2 Servicing

For those customers who wish to service their own Beds, please contact Renray Healthcare for Service Training and Manuals.

### 11.1.3 Spare Parts List

Part No.	Part Description/Name	Qty.
500004	Hand wheel	1
153110	Control Unit	1
153109	Actuator	1
151936	Handset	1
54973	Handset Lock-Out Key	1
500003	Mattress Retainer Bracket	1
510012	Side Rail Lock Key	1

### 11.1.4 Disposal of Electrical Equipment

Contact Renray Healthcare for advice on disposal of all electrical equipment on the Bed.



DO NOT dispose of the Emergency Lowering 9v batteries with domestic waste or in fire.

## 11.2 Warranty

The warranty of the Renray Elite Bed shall be as detailed in the terms and conditions of the sale. For more information, please contact Renray Healthcare. See 11.3 Contact Renray Healthcare, Page 50

### 11.3 Contact Renray Healthcare



<b>Web:</b>	<b><i>www.renrayhealthcare.com</i></b>
<b>Email:</b>	<b><i>info@renrayhealthcare.com</i></b>
<b>Tel:</b>	<b><i>0044 1606 593456</i></b>
<b>Fax:</b>	<b><i>0044 1606 861354</i></b>
<b>Address:</b>	<b><i>Renray Healthcare, Road Five, Winsford Industrial Estate, Winsford, Cheshire, CW7 3RB</i></b>

## 12 Appendix

### 12.1 Detailed Technical Description

#### 12.1.1 Guidance & Manufacturer's Declaration – Electromagnetic Immunity

Guidance & Manufacturer's Declaration – Electromagnetic Immunity (Table 1 of 4)		
The Renray E2000 Electric Bed is intended for use in the electromagnetic environment specified below. The customer or the user of the Renray E2000 Electric Bed should assure that it is used in such an environment.		
Emissions	Compliance	Electromagnetic environment-- guidance
RF emissions CISPR 11	Group 1	The Renray E2000 Electric Bed 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.  The Renray E2000 Electric Bed is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
RF emissions CISPR 11	Class B	
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

### Guidance & Manufacturer's Declaration – Electromagnetic Immunity (Table 2 of 4)


The Renray E2000 Electric Bed is intended for use in the electromagnetic environment specified below. The customer or the user of the Renray E2000 Electric Bed should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment; Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	$\pm 6$ kV contact $\pm 8$ kV air	$\pm 6$ kV contact $\pm 8$ kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	$\pm 2$ kV for power supply lines	$\pm 2$ kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	$\pm 1$ kV line(s) and neutral	$\pm 1$ kV line(s) and neutral	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	$<5\%$ $U_T$ ( $>95\%$ dip in $U_T$ ) for 0,5 cycle  $40\%$ $U_T$ ( $60\%$ dip in $U_T$ ) for 5 cycles  $70\%$ $U_T$ ( $30\%$ dip in $U_T$ ) for 25 cycles  $<5\%$ $U_T$ ( $>95\%$ dip in $U_T$ ) for 5s	$<5\%$ $U_T$ ( $>95\%$ dip in $U_T$ ) for 0,5 cycle  $40\%$ $U_T$ ( $60\%$ dip in $U_T$ ) for 5 cycles  $70\%$ $U_T$ ( $30\%$ dip in $U_T$ ) for 25 cycles  $<5\%$ $U_T$ ( $>95\%$ dip in $U_T$ ) for 5s	Mains power quality should be that of a typical commercial or hospital environment. If a dips or an interruption of mains power occurs, the current of the Renray E2000 Electric Bed may be dropped off from normal level, it may be necessary to use uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE  $U_T$  is the a.c. mains voltage prior to application of the test level

### Guidance & Manufacturer's Declaration – Electromagnetic Immunity (Table 3 of 4)

The Renray E2000 Electric Bed is intended for use in the electromagnetic environment specified below. The customer or the user of the Renray E2000 Electric Bed should assure 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	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the Renray E2000 Electric Bed, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	<p>Recommended separation distance</p> $d = 1,2\sqrt{P}$ $d = 1,2\sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = 2,3\sqrt{P} \quad 800 \text{ MHz to } 2,5 \text{ GHz}$ <p>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).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, a should be less than the compliance level in each frequency range, b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> <div style="text-align: center;">  </div>

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.

- a. 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 Renray E2000 Electric Bed is used exceeds the applicable RF compliance level above, the Renray E2000 Electric Bed should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Renray E2000 Electric Bed.
- b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

**Recommended separation distances between portable and mobile RF communications equipment and the Renray E2000 Electric Bed (Table 4 of 4)**

The Renray E2000 Electric Bed is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Renray E2000 Electric Bed can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Renray E2000 Electric Bed as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter  <b>W</b>	Separation distance according to frequency of transmitter  <b>m</b>		
	150 kHz to 80 MHz $d = 1,2\sqrt{P}$	80 MHz to 800 MHz $d = 1,2\sqrt{P}$	800 MHz to 2.5 GHz $d = 2,3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

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.

## NOTES

## NOTES



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