drive

DeVilbiss HEALTHCARE

Innov8 Low General Ward Bed

Instructions for use

CONTENTS

1. INTRODUCTION

Thank you for purchasing this product. These instructions for use should be read carefully before using the bed. Please ensure that you understand all instructions. If you have any questions concerning the operation or maintenance of the product, please contact your local distributor or Drive DeVilbiss Healthcare Ltd.

These instructions for use are intended for medical professional users only and are not intended for lay users/patients.

2. CONTACT INFORMATION

For assistance in setting up, using, maintaining your bed, to report unexpected operation or for any service, warranty, sales or customer service information regarding this product, please contact your provider. If in doubt, contact Drive DeVilbiss Healthcare Ltd. at the following address:

Drive DeVilbiss Healthcare Ltd.
Sidhil Business Park
Holmfield, Halifax
West Yorkshire
HX2 9TN
United Kingdom

Any serious incident that occurs in relation to the device should be reported to Drive DeVilbiss Healthcare Ltd and the competent authority of the Member State in which the device is used. Please quote the product serial number on all correspondence. This can be found on the identification labels, on the side of the bed frame.

Service & Maintenance:
Tel: +44 (0)1422 233136
Fax: +44 (0)1422 233010

Customer Service:
Tel: +44 (0)845 0600 333
Fax: +44 (0)845 0600 334

Spares:
Tel: +44 (0)1422 233136
Fax: +44 (0)1422 233010

info@drivedevilbiss.co.uk
www.drivedevilbiss.co.uk

For Service & Support outside the UK please contact the local distribution company from where this equipment was purchased. Failure to do so may result in the product warranty becoming void.

3. PRODUCT DESCRIPTION

3.1 Environment

The Innov8 Low bed is intended for use in a hospital where acute/intensive care is provided and medical supervision and monitoring is required.

3.2 Intended Patient Group

The bed frame is intended for an adult who is up to 190kg in weight. A lower (or upper) age limit is not defined as it depends on the physical size of the patient in relation to the various proportions and gaps around the bed frame. Patients must be in excess of 146cm in height ranging up to 201cm (bed extended) and have a BMI greater than 17.

The bed frame is intended to support a single adult.

3.3 Intended Use

The intended use of the bed is to support the weight of the patient, as defined in section 3.2, whilst sleeping or resting and to assist the end user to gain and/or maintain a suitable position.

3.4 Indications

To assist in the care and/or comfort of the patient or care provider when the bed is used in the environments specified in section 3.1, and where a reduced bed height may be required as part of an overall plan of care.

3.5 Product Overview

The Innov8 Low bed is intended to be plugged into a permanent mains supply however it also has a battery backup system for such times that a mains supply is not available. The bed has two separate handsets, one for the carer with full control capability and one for the patient with limited functionality and limited height adjustment. The carer has the ability to lock out individual functions to reduce the risk of accidental operation.

The handsets operate an electronic linear actuator system which is controlled via a central control box. The actuators are attached to the moving parts of the bed frame allowing the bed to be operated via the use of either handset.

The powder coated platform supports the full electrical system, four removable plastic platform panels, two plastic bed end boards and a set of side rails to provide patient protection; the bed has a safe working load of 255kg. The bed is manoeuvrable via the aid of four linked castors attached to the base frame of the bed which in turn is attached to the platform frame via two lift arms.

3.6 Features

- Electrically operated height, backrest and leg section adjustment.
- Auto regressing backrest.
- Electrically operated head and foot down tilt (Trendelenburg & reverse Trendelenburg).
- Auto-contour – simultaneous adjustment of the backrest and knee-break.
- Cardiac chair position.
- Battery backup.
- Patient handset and carer handset with integral function lockout.
- Removable head and foot ends.
- Removable mattress platform panels.
- Mattress platform extension.
- Castor system with brake, free and tracking modes.

4. SAFETY

4.1 Warnings & Cautions

Warning

Warnings in this user manual highlight potential hazards that if disregarded could lead to injury or death.

Caution

Cautions in this user manual highlight potential hazards that if disregarded could lead to equipment damage or failure.

4.2 Risk Assessment

Before a patient uses the bed a risk assessment must be performed on a patient by patient basis. The risk assessment should include, but is not limited to:

- Entrapment.
- Falling out of the bed.
- Small adults (and children).
- Patients who lack capacity.
- Very active patients.
- Unauthorised people.
- Use of side rails and other accessories.
- Items/equipment/cables under the bed.

Warning

Bed functions must be locked out if there is any doubt about the ability of the patient to operate the bed safely.

4.3 Contraindications

Patient conditions for which the use of the bed is a contraindication are as follows:

- Cervical or skeletal traction – If bed functions remain unlocked.
- Unstable spinal fractures – If bed functions remain unlocked.
- General skeletal fractures – If relevant bed functions remain unlocked.
- Mental capacity not sufficient to operate handset functions safely – If bed functions remain unlocked.
- Confused, agitated or restless – If side rails fitted and/or in raised position.
- Exceeds maximum patient weight of bed.
- Less than 146cm in length.
- BMI less than 17.
- Less than 40kg in weight

Other contraindications may be relevant which are specific to the patient or care environment.

4.4 Bed Loading

- The safe working load of the bed is: 255kg (40 stone)
- The maximum patient weight of the bed is: 190kg (30 stone)

Safe Working Load is the sum of:

- Patient mass
- Mattress mass
- Accessories mass
- Mass supported by the accessories (excluding patient mass)

Warning

The maximum loads shown above are for the bed to be occupied by one person only. The bed is not designed to take the weight of visitors sitting on the side of the bed. Additional weight could damage components or cause the bed to overturn, causing injury.

4.5 Training

All users of this bed are to be suitably trained prior to use and patients are to be familiarised with handset and bed functionality at the earliest opportunity. It is the responsibility of the end user to ensure they have received sufficient training to use the bed and any associated accessories safely and correctly.

For further information in regards to training options please contact Drive DeVilbiss Healthcare Ltd. or your local provider (see section 2).

4.6 General Warnings

Warning

- The bed is to be installed and put into service in accordance with the information provided in these instructions for use.
- The bed is typically not suitable for child use, if it is to be used for child occupancy ensure a risk assessment has been undertaken taking into account the proportions of the child and dimensions of the bed frame.
- The bed is not suitable for occupants who are less than 146cm in length - If in doubt please contact your provider or Drive DeVilbiss Healthcare Ltd. for further advice.
- The bed is not suitable for occupants who weigh less than 40kg - If in doubt please contact your provider or Drive DeVilbiss Healthcare Ltd. for further advice.
- The bed is not suitable for occupants who have a BMI less than 17 - If in doubt please contact your provider or Drive DeVilbiss Healthcare Ltd. for further advice.
- Misused electrical equipment can be hazardous.
- Accessories that have not been approved or designed for use with the bed are not be used.
- Modification of the bed frame is not allowed without the permission of Drive DeVilbiss Healthcare Ltd.
- The bed is not to be used in the presence of flammable gasses or used in oxygen rich environments.
- The bed is not to be used in an operating theatre.
- If children or adults who lack capacity pose a potential risk of intentional or unintentional tampering with the bed its suitability for use is to be considered during the initial patient / product risk assessment.
- The RF emissions from the electrical system are very low and are not likely to cause any interference to nearby electronic equipment, however interference to sensitive equipment is possible (see section 14 for further detail).

5. TRANSPORT & STORAGE

The following conditions should be followed when transporting and storing the Innov8 Low bed. Note, this does not apply to the transfer of the bed between wards and / or when the bed is in use (see section 9.4).

- Bed set to lowest height.
- Bed always to be stored on a flat and level floor.
- Platform extension retracted.
- Brakes applied.
- All profiling sections secured (transport only).
- All functions locked out.
- Covered to protect from fluid ingress, dirt, dust etc.
- Instructions for use retained with bed.
- Environmental conditions for transport and storage:

Ambient temperature:	-10°C to +50°C
Humidity:	20% - 90% at 30°C - not condensing
Atmospheric pressure:	80kPa to 106kPa (altitude ≤ 2000m)

Warning

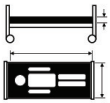
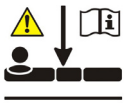
- To prevent the risk of cross infection, when removing a bed from use ensure that all activities in relation to the bed and its ancillary parts are carried out using disposable gloves and that they are then discarded appropriately, unless it can be verified that the bed and the ancillary parts have been suitably cleaned and disinfected prior to collection.
- Prior to putting into storage ensure the bed has been cleaned and disinfected in line with the local infection control policy and / or as defined in section 11 of these instructions for use.

Caution

- Beds must not be stored one on top of another or on their side.
- Care is to be taken when pushing the bed over thresholds.
- Do not use the side rails to move the bed – Risk of product damage.

6. SYMBOL DEFINITION

The following symbols are found on this bed:
(See section 9.12 for handset symbols)

Symbol	Description
	Warning Beware of potential hazard
	Caution Beware of potential product damage
	Refer to instructions for use - Recommended Failure to read the instructions for use could introduce a hazard
	Refer to instructions for use - Mandatory Failure to read the instructions for use could introduce a hazard
	Maximum patient weight Refer to section 4.4
	Safe working load Refer to section 4.4
	Mattress suitability Refer to section 16
	Dynamic mattress strapping suitability Refer to section 16
	Low height warning

Symbol	Description
	Equipotential stud/stud mounting location Refer to section 10
	Minimum patient weight
	Minimum patient BMI
	Minimum patient height
	Type B applied part
	Lot number
	Product code
	Date of manufacture
	Manufacturer
	Medical Device

7. PARTS IDENTIFICATION

8. INSTALLATION & PREPARING FOR USE

Prior to operating the bed for the first time the following simple steps must be performed:

- Ensure the wooden packing boards are removed from the bed prior to connecting to the mains supply – See section 13 for disposal of the packing boards.
- Ensure the bed and all accessories are at room temperature.
- Ensure the bed has been cleaned and disinfected (see section 11).
- Ensure the brakes have been applied (see section 9.3).
- Connect the mains cable to an appropriate mains socket outlet.
- With the bed plugged into the mains supply allow it to remain inactive for 6hrs. This is to allow the bed frame and electronic system to adjust to the environmental conditions of the room.

Warning

- The bed is to be left in its lowest position when the patient is unattended in order to reduce the risk of injury due to a fall.
- Before operating the bed ensure the patient is positioned appropriately ensuring all limbs are clear of moving parts.
- The mains plug is the disconnect device for the means of isolating the bed from the mains supply, the plug must be accessible at all times.
- Ensure the mains cable is plugged into an appropriate power source at all times.
- To avoid the risk of an electric shock, this equipment must only be connected to a supply mains with protective earth.
- Ensure the electrical cables are not in tension, paying particular attention to the mains cable.
- Ensure that all cables are clear of all moving parts to prevent damage to the electrical components.
- Inappropriate handling/positioning of the mains cable could cause kinking or shearing of the cable which may lead to exposed live wires, creating an increased risk of electrocution.
- Precautions are to be taken when routing cables from external equipment around the bed to ensure that they do not become squeezed, trapped or damaged.
- A CE marked extension cable must only be used when it is not possible to reach a wall socket with the mains cable – Contact Drive DeVilbiss Healthcare Ltd. for detail with regards to the safe use of extension cables.

Warning

- If an extension cable is used never overload it by plugging in appliances that together will exceed the maximum current rating stated for the extension cable.
- Block adaptors are not to be used.
- Ensure socket outlets are not positioned under the bed frame.
- Any electrical component that is part of the bed frame or associated ancillary equipment that is found to be damaged must be replaced immediately, due to the risk of electrocution.
- Consideration is to be taken in the positioning of the bed cables and handset cable to minimise the risk of accidental strangulation resulting from occupant entanglement.
- Keep the bed away from sources of heat and naked flames (e.g. cigarettes, electric fires, fan heaters etc.).
- Ensure that any mattresses used are of the correct size and type and have been fitted correctly – Incorrect mattress specification could lead to an entrapment and / or falls hazard.
- Ensure the mattress is compatible with the side rails (if fitted).

Caution

- Special care is to be taken when fitting a dynamic mattress to the bed as incorrect fitting could damage the bed (see section 16).
- Ensure the bed is positioned an appropriate distance from walls/other furniture to prevent damage or patient injury when operating the bed (particularly when operating in tilt).
- Ensure the mains supply is compatible with the control unit (see section 15.2 for electrical specification).

9. OPERATION OF THE BED

9.1 Operational Limits

- Ambient temperature: +5°C to +40°C
- Humidity: 20% - 90% at 30°C - not condensing
- Atmospheric pressure: 80kPa to 106kPa (altitude ≤ 2000m)

9.2 General Safety

Warning

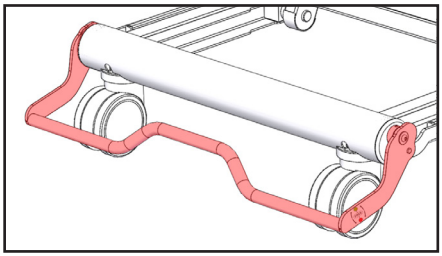
- Before operating the bed ensure the patient is positioned appropriately and limbs are clear of moving parts.
- When a patient is left unattended the carer is to determine whether the bed should be set to the minimum height allowed by the patient handset (420mm) or lowered to minimum height using the carer handset (225mm).
- When a patient is left unattended the carer is to determine whether the side rails need to be raised or not.
- When a patient is left unattended the carer is to determine whether the patient handset functions need to be locked out or not.

Caution

When the bed is operated, ensure that obstacles such as over-bed tables and other furniture/objects are not causing an obstruction, particularly when lowering to minimum height with the carer handset.

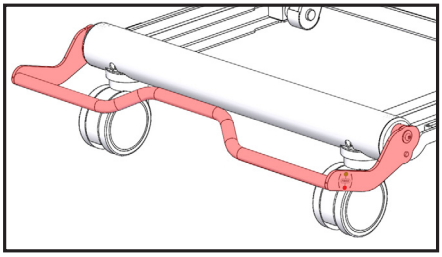
9.3 Brake & Steering System

The brake bar at the foot end of the bed operates all four castors simultaneously.



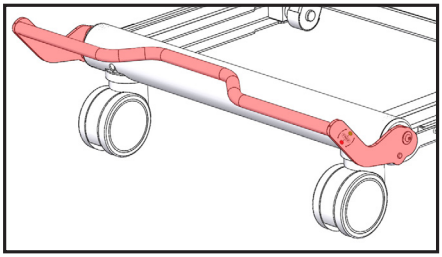
Brake bar down (brake):

All four castors are locked - the bed cannot move.



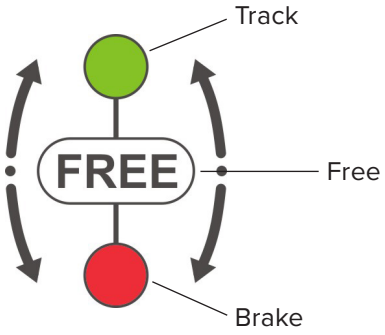
Brake bar horizontal (free):

All castors swivel freely - the bed can move in any direction.



Brake bar up (track):

The head end castors are set in a specific “tracking” position - the bed travels in a straight line.



Brake Position Label:

The label on the base also indicates which setting the castors are set to; the brake bar will align with one of the three markings depending on its setting.

Warning

The brakes must always be engaged when the bed is stationary.

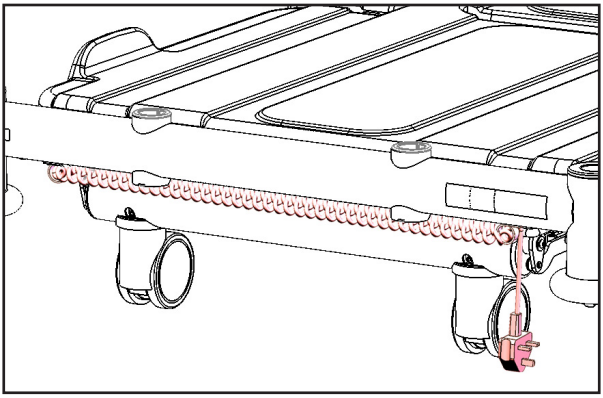
Caution

When the pedal is in the tracking position the mattress platform must not be lower than 400mm from the floor. Lowering the mattress platform to the minimum height with the pedal in the tracking position could lead to equipment damage.

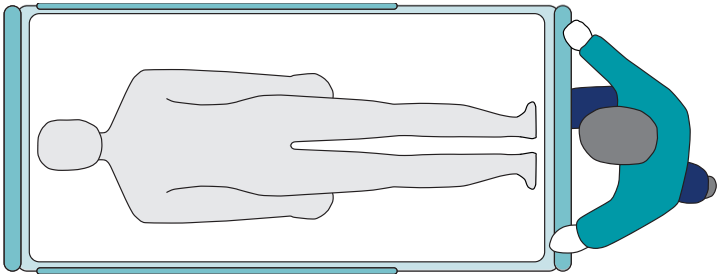
9.4 Moving the Bed

Before moving the bed the following checks must be performed:

- Side rails are to be raised, to minimise the risk of a patient falling.
- The platform is to be horizontal.
- The platform is set to a suitable height for pushing.
- The mains cable must be unplugged from the wall and stored on the cable tidy hooks on the back of the bed.



When moving the bed it is advisable to set the steering function to ‘track’ and to push the bed from the foot end of the bed. This way, the person pushing the bed is able to monitor the condition of the patient during transport and can keep the bed moving in a straight line with minimal effort.



Warning

- If the bed is to be moved with a heavy occupant it is to be assessed whether or not two qualified people should move the bed, this is dependent on the situation and load on the bed.
- If the bed is to be pushed up / down a slope it is to be assessed whether or not two qualified people should move the bed, with one person at each end.

Caution

- Care is to be taken when pushing the bed over thresholds.
- Do not use the side rails to move the bed – Risk of product damage.

9.5 Side Rails & Mattresses

The Innov8 Low can be specified with two types of cantilever side rails (high & low); this is to provide the optimum mattress / side rail combination for both foam and air mattresses of varying thickness. When specifying a mattress and side rail combination a clinical assessment of the patient's needs must be carried out in line with the local policy.

Warning

Side rails must only be used with a mattress of the correct size and type that is approved for use with the Innov8 Low bed – Incorrect mattress specification can lead to an entrapment and / or falls hazard.

9.6 Side Rail Safety

The side rails available for the Innov8 Low are product specific, no other side rail is to be used with the bed. Drive DeVilbiss Healthcare does not recommend the use of the Innov8 Low side rails (and bed) when caring for individuals who are less than 146cm in length, due to the potential risk of entrapment - It is the equipment provider's responsibility to ensure suitability for use.

Warning

- Whilst every care has been taken to ensure that the design of the Innov8 Low side rails meet the relevant safety standards, beds fitted with side rails can still pose a potential risk of death from entrapment and asphyxiation.
- A risk assessment is to be carried out to consider the age, mental and physiological condition and size of the patient to assess side rail suitability.
- All staff responsible for the purchase, selection for use, and adjusting of bed side rails should be aware of the potential risk of entrapment and asphyxiation when a bed is occupied.
- Care must be taken when positioning and adjusting side rails to ensure that any spaces between the side rails, mattress or bed frame do not allow entrapment of the occupant's head or body.
- All staff responsible are to be aware that increased vigilance is required when nursing patients in beds fitted with side rails.
- Side rails are not designed to act as restraints for patients.
- When side rails are to be used as a moving and positioning aid a risk assessment is to be performed to assess the suitability of the patient using the side rail as such.
- If forces beyond those expected during normal use are inflicted on the side rail permanent deformation could occur, increasing the risk of patient entrapment.

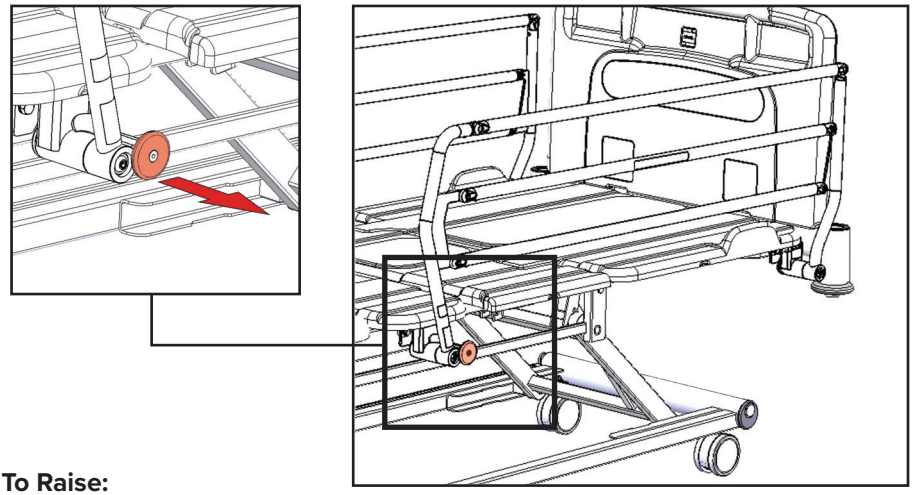
9.7 Operating the Side Rails

Warning

When operating the side rails ensure they are free from obstructions, to prevent injury/entrapment.

To Lower:

Hold the top rail and pull out the release plunger. Gently lower the side rail towards the foot end of the bed.



To Raise:

Hold the top rail and lift the side rail until it locks into the vertical position.

Warning

Ensure the side rail release plunger is fully engaged when the side rails are in the raised position.

Caution

When lowering do not drop the side rail – Risk of product damage.

9.8 Bed Extension

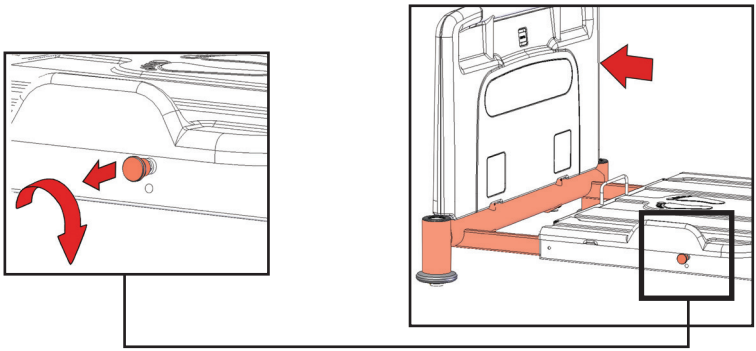
The bed has an integral bed extension which allows the bed to be adjusted in length, according to the patient's needs. The length extension is typically for patients who exceed 185cm in length and gives the bed compatibility with patients up to 205cm.

Warning

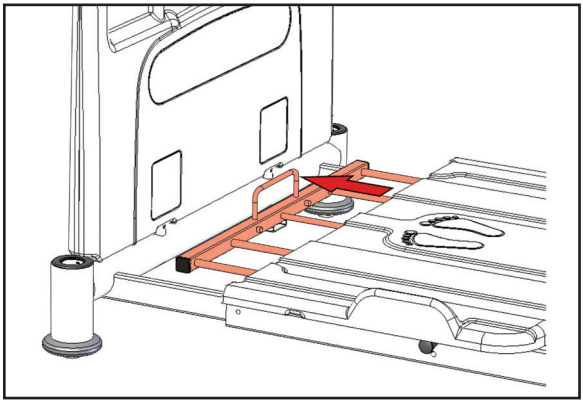
The length extension is only used for those individuals who require it due to their physical height requirements, it is not to be kept in the extended position as the default for all occupants. A patient risk assessment must be performed to assess the need for the extension.

To extend the bed:

- If the bed is in tilt the platform must be levelled first (see section 9.12.8).
- Pull out the spring loaded plunger located on the side of the bed near the foot end and, whilst holding it out, rotate it by a quarter turn (the plunger should stay out). Repeat for the plunger on the opposite side of the bed.
- Pull out the mattress platform extension to its maximum extent.
- Rotate the spring loaded plungers until they lock back into position.



- Pull out the leg extension to its maximum extent.



- If previously removed replace the bed end.

To retract the bed extension:

- Push the leg extension in.
- Pull out the spring loaded plunger located on the side of the bed near the foot end and, whilst holding it out, rotate it by a quarter turn (the plunger should stay out). Repeat for the plunger on the opposite side of the bed.
- Push the mattress platform extension fully in.
- Rotate the spring loaded plungers until they lock back into position.

Warning

- Always fit a mattress extension block when the platform is extended.
- Always ensure the extension is locked in position, both in the extended and retracted states.

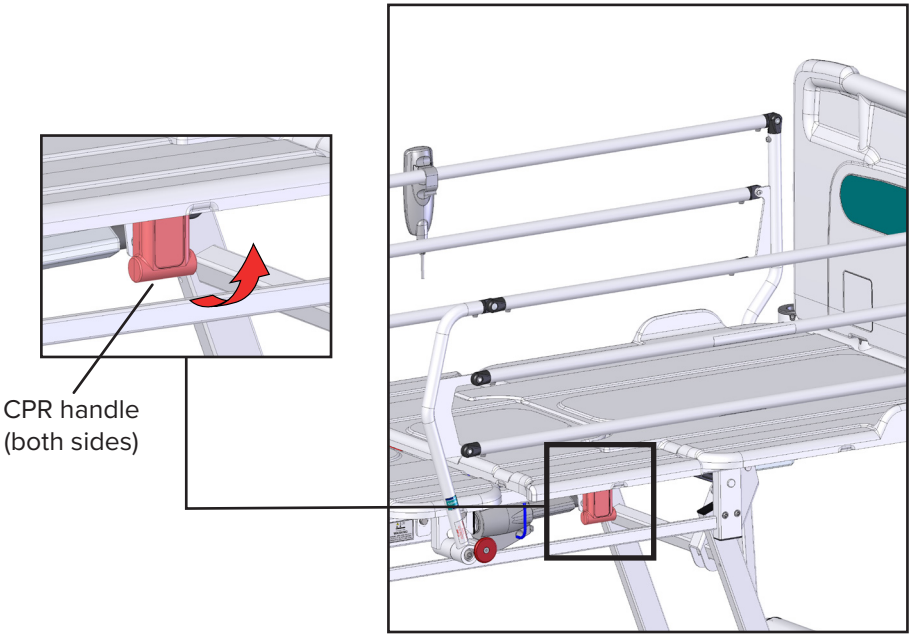
Caution

Never pull the leg extension out without the mattress platform extension pulled out – Risk of product damage.

9.9 Emergency CPR Function - Manual

The backrest can be levelled using the manual CPR handles located on both sides of the bed.

To flatten the backrest in an emergency, pull one of the red and black handles outwards; the backrest will now drop into a flattened state.



Note: The platform will not level itself or change height when the manual handles are pulled, this function is only available with the electrical CPR function (see section 9.12.10)

Warning

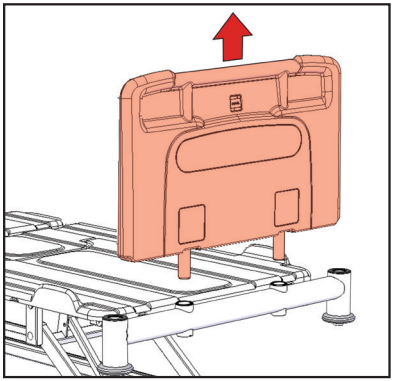
The backrest may fall quickly, ensure that limbs and equipment are clear.

Caution

Do not use the CPR handle as the default method for lowering the backrest – Risk of product damage.

9.10 Bed Ends

The bed has plastic end panels which are easily removable, allowing for fast patient access. To remove, hold the panel with both hands and lift squarely.

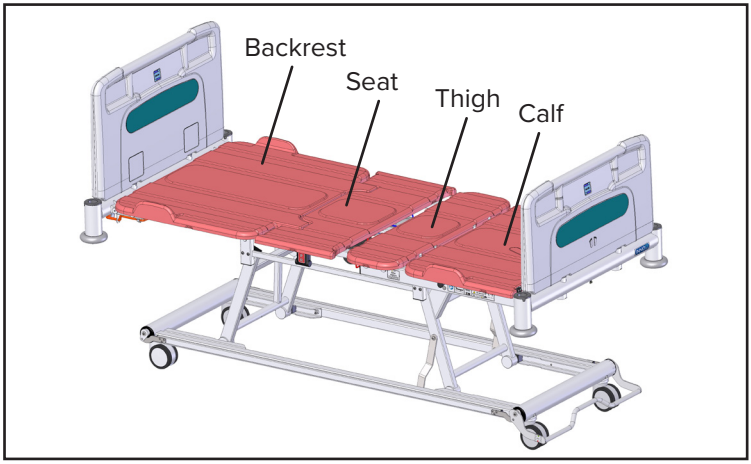


The head and foot end panels are of different heights, the foot panel is shorter and can be identified by the small foot motif on one side of the panel and must always be placed at the foot end of the bed.

9.11 Mattress Panels

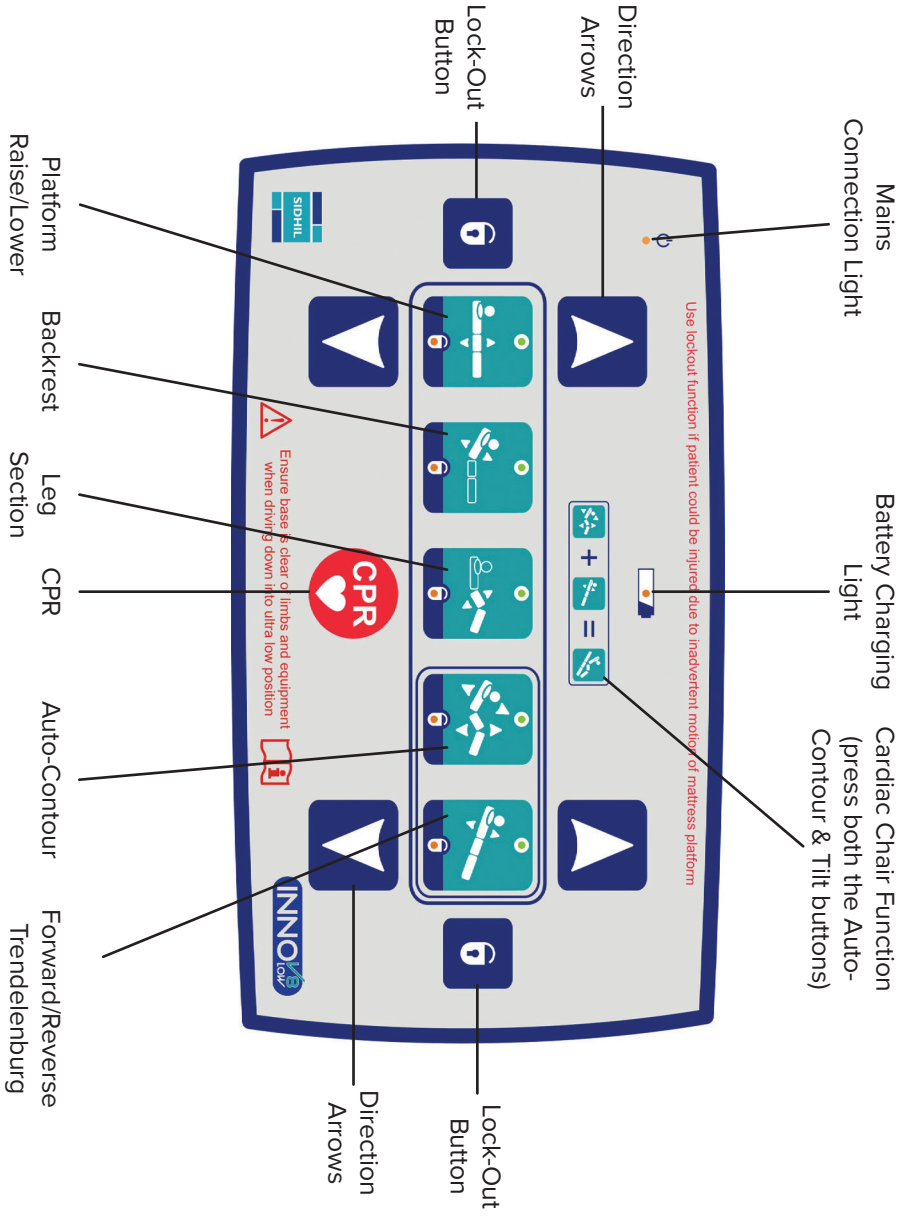
The mattress panels are held onto the tubular frame of the bed with loose fitting clips. A light force should be used to fit and remove the panels.

The panels only fit in one orientation and position, if difficulty is experienced whilst fitting, ensure the panel in question is correctly orientated and located.



9.12 Electrical Operation of the Bed

9.12.1 Carer Handset Layout



Warning

- The carer handset controls all bed functionality; it is to be used only by the carer. The carer handset is intended to be stored at the foot end of the bed by clipping it over the bed end panel, keeping it out of reach of the bed occupant.
- Engage the lockout function if a patient could be injured due to inadvertent motion of the mattress platform.
- Before lowering the bed ensure nobody is in close proximity to the underside of the bed frame – Risk of crushing.
- Before profiling the platform ensure limbs are clear of the side rails – Risk of injury.

Caution

- If the bed is continuously used for an extended period of time and it exceeds the duty cycle the control box and/or lift actuators may become temporarily disabled or irreparably damaged. If this occurs remove the power supply from the wall and allow system to rest for 20-30 minutes before attempting to re-operate.
- Ensure equipment and objects are clear of the base before lowering – Risk of product damage.

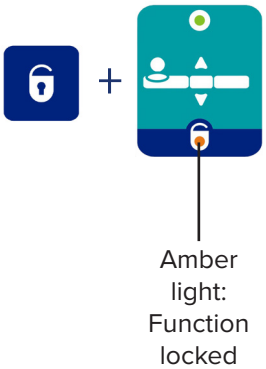
9.12.2 Operating the Carer Handset

To activate a function, press the desired function button. A green light will illuminate at the top of the function button, this indicates the function is now active.

Once the function button is active hold down one of the direction buttons, until the required position is reached.

The function will stay active for 5 seconds. If after 5 seconds a direction button has not been pressed the function will de-activate and the green light will extinguish.

9.12.3 Function Lockout



To lockout a function one of the padlock symbols must be pressed simultaneously with the function to be locked. An amber light will illuminate at the bottom of the function button, this indicates the function is now locked out.

To unlock a function the above process is repeated, the amber light will extinguish.

When a function is locked out on the carer handset, the patient handset will have the corresponding function locked out.

Warning

Lockout all relevant functions if a patient could be injured due to inadvertent motion of the mattress platform.

9.12.4 Platform Height

The platform height button allows adjustment of the mattress platform height.

The carer handset can be used to lower the mattress platform to a lower height than can be achieved using the patient handset.

When the bed reaches a height of 420mm, a single auditory signal will sound and the platform speed will slow to signify to the carer that the bed is being operated in the low height region and care should be taken to ensure that no equipment is placed under the bed.

Note: The patient handset is only able to lower the bed to a height of 420mm. This means that the patient is not able to operate the bed in the low zone.

Warning

- Before lowering the bed ensure nobody is in close proximity to the underside of the bed frame, especially when travelling below 420mm – Risk of crushing.
- To reduce the risk of injury due to falls it is advised that the bed is left in its lowest position when the patient is unattended.

Caution

If the bed is to be used with a hoist, ensure that the clearance under the bed is sufficient during the required range of bed motion; there is a risk of collision between the bed lifting mechanism and the hoist legs.

9.12.5 Backrest

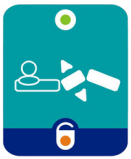
The backrest button on the carer handset allows adjustment of the backrest angle.

The backrest actuator is fitted with an anti-entrapment mechanism and will stop lowering if it hits an obstruction. Once the obstruction is removed, the backrest will lower again under its own weight.

Warning

Ensure limbs and equipment are kept free from the space under the backrest before lowering – Risk of crushing. Any obstructions preventing the backrest from lowering will bear the weight of the backrest, mattress, and patient (if present) until removed from under the section.

9.12.6 Leg Section



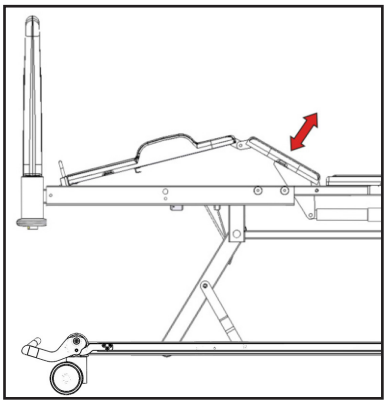
The leg section button on the carer handset allows adjustment of the leg section. When the function on the handset is operated the height or angle of the section is adjusted, depending on whether or not the leg stay bar is engaged.

In normal use the leg section operates in angle adjustment mode where the thigh and calf sections angle upwards as the function is operated, as depicted by the graphic on the button. However the operation of the leg section is dependent on whether the leg stay bar is engaged and can be set so that the foot section rises parallel to the platform.

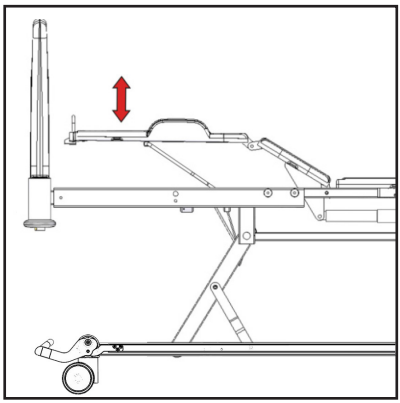
Setting the bed so that leg section height adjustment operates:

- Press the leg section button on the carer handset and raise to maximum height.
- Lift the leg section manually.
- Lift the leg stay bar.
- Position the leg stay bar into the channel under the foot section.
- The calf section will now lift as the function is driven up.

To disengage the leg stay bar, raise the foot section to its maximum height using the carer handset, then lift the leg section manually so the leg stay bar disengages from the channel under the foot section.



Thigh Section Angle Adjustment



Leg Section Height Adjustment

Warning

To minimise the risk of injury, before attempting to lift the calf section either:

- Ensure there is no load on the section, or
- Support the calf section with a second able bodied person.

Caution

The leg section is only to be used for the lifting of a patient's legs – Any other use may damage the bed frame.

9.12.7 Auto Contour

When the auto contour button is pressed both the backrest and knee break functions operate together.

Note: If the backrest or knee break are locked out this will automatically disable the auto contour function.

9.12.8 Tilt

Head down tilt (Trendelenburg) and foot down tilt can be applied using the carer handset.

When in tilt, in order to level the bed the opposite direction button is pressed and held until the bed stops, the platform will now be level.

To continue tilting the bed in the opposite direction, re-press the same direction button again and hold until the desired angle is reached.

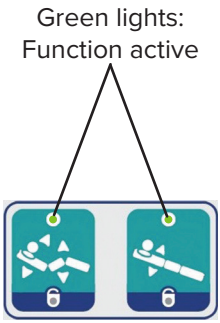
Warning

Never leave a patient unattended when the bed is in head down tilt (Trendelenburg).

Caution

When the bed is put into head down tilt ensure there is sufficient space behind the bed to ensure the head board and / or any ancillary equipment cannot clash with the wall.

9.12.9 Cardiac Chair



The bed can be automatically profiled into a cardiac chair position, where the platform is automatically profiled into the auto contour and foot down tilt positions together. This allows for a comfortable seated position for the patient whilst remaining in the bed.

When the auto contour and tilt buttons are pressed within 5 seconds of each other the cardiac chair function is activated, allowing the platform to be profiled using the raise button.

9.12.10 Electrical CPR

Pressing the CPR button automatically levels, flattens and lowers the platform. Once the platform is at minimum patient operating height (420mm) it then drives up to maximum height, allowing the carer to stop it at any point that is suitable to perform CPR. Regardless of position the backrest always lowers first, so that it is flat in the quickest possible time.

Warning

Pressing the CPR function overrides all locked out functions and is only to be used in emergency situations, so as to avoid operating a previously locked out function.

Note: The mechanical CPR function will flatten the backrest quicker than the electrical CPR, but it will not level the platform or lower the leg section.

9.12.11 Mains Power Indicator

The carer handset has an amber mains power light in the upper left corner. When illuminated it signifies that the bed is plugged in and operating on mains power. If it is not illuminated the bed is either unplugged or has a fault.

Warning

- The mains plug is the disconnect device for the means of isolating the bed from the mains supply, the plug must be accessible at all times.
- Ensure the mains cable is plugged into an appropriate power source at all times.
- To avoid the risk of an electric shock, this equipment must only be connected to a supply mains with protective earth.

9.12.12 Battery Indicator

The carer handset has a battery light that shows when the battery is charging. Note, the light does not indicate when the bed is being run off battery power or indicate the remaining battery charge.

When the battery charge is low an audible indicator will sound whenever a function is operated, the bed should be plugged into a mains supply as soon as is practical.

Caution

- The bed is not designed to run off battery power for long periods and should always be plugged into the mains supply during normal use.
- Allowing the battery to discharge fully may impair performance or shorten its usable life.

9.12.13 Patient Handset

Warning

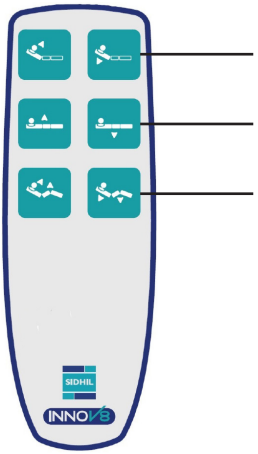
- Ensure a risk assessment is undertaken to ensure the suitability of the occupant or a visitor using the patient handset.
- The patient handset cable must also be considered in regards to the risk of accidental strangulation of the bed occupant – If the cable introduces an unacceptable risk it is recommended that the handset and cable are moved out of reach.

The patient handset is designed to give limited control to the patient. It allows control of the backrest, knee break and mattress platform height.

The mattress platform height can only be adjusted between 420mm and 710mm using the patient handset, to reduce the risk of crushing or colliding with equipment underneath the bedframe. If the bed is to be lowered below the minimum patient operating height it must be done so by the carer, using the carer handset.

The patient may raise the bed out of the lowest position (below 420mm) if required, however the handset will not allow them to re-lower the bed below minimum patient operating height.

If the mattress platform is in a tilted position the patient is able to level the platform using the platform height function. If this is not desired, the carer must lock out the tilt function on the carer handset in order for the bed to remain at a set angle.



The patient handset allows control of:

Backrest angle

Platform height (Patient operating zone: 420mm to 710mm)

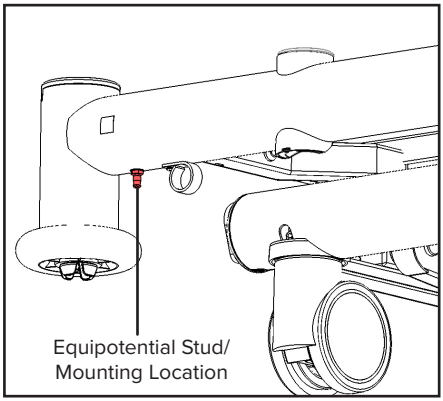
Auto contour (backrest and knee break profiled together)

Note: If functions have been locked out on the nurse control panel, the same functions will be locked out on the patient handset.

If the patient is in doubt on the operation of the device, or to report unexpected operation, consult a healthcare professional

10. ADDITIONAL FEATURES

10.1 Equipotential Stud/Mounting Location



The Innov8 Low can be specified to include an equipotential stud at point of order. This can reduce the risk of static or electrical discharge between two pieces of electrical equipment.

In certain situations the electrical potential of all unprotected metal parts must be equalised. If the bed is not connected to the mains, resulting in a grounded connection being unavailable, an equipotential cable (using 2 POAG-KBT6DIN connectors) must be connected to the studs between the bed and relevant device. Please contact the Drive DeVilbiss Healthcare customer service team for details of the necessary cable and equipotential stud.

Warning

Only items that have been inspected by a trained electrical professional, and under their advice, should be connected to the Innov8 Low.

10.2 Corner Sockets

The corner sockets are intended to fit various Drive DeVilbiss Healthcare accessories - IV pole, lifting pole, oxygen cylinder carrier and traction frames (please refer to the individual accessory instructions for use in reference to fitting).

Caution

When the lifting pole is fitted to the bed frame the head board must be in place at all times to provide it with necessary support.

11. DECONTAMINATION

Warning

- Always disconnect the bed from the main power supply prior to cleaning.
- Ensure all ports on the electrical system (control box and actuators) have cable plugs inserted to maintain the IP rating.
- Regular cleaning and disinfection of the bed frame and relevant accessories will help to prevent the risk of infection to the occupant and / or carer.
- Prior to transferring the bed frame / accessory to another user ensure it has been cleaned and disinfected using the method as detailed below to help prevent the risk of cross infection.

11.1 Cleaning & Disinfection Guidelines

Infection control and routine cleaning must be carried out in accordance with your local Infection control policy or regulatory body.

To aid cleaning, the plastic bed ends and mattress platform panels can be removed. It is also advisable to remove any accessories that are fastened to the bed.

General Cleaning:

- The bed should be cleaned by starting with the cleanest parts of the bed and systematically moving to the dirtiest parts. Extra care should be taken around areas where excess dirt or dust may gather.
- The cloth should be changed during the cleaning process if it becomes soiled.
- Wipe down with a clean cloth moistened with a mild detergent and diluted in warm water (40˚C).
- Rinse with cold clean water and a clean cloth and allow to fully dry before use.

Decontamination:

- Mop up any fluid with paper towels.
- Wipe bed down using cold clean water.
- Wipe down with a 0.1% Chlorine solution (1,000ppm) in cold water.
- Rinse with cold clean water and a clean cloth and allow to fully dry before use. Always ensure the cleaned parts are allowed to dry before putting the mattress back in place.

In cases of blood spills or other bodily fluids it is recommended that a 1% Chlorine solution (10,000ppm) is used instead.

If any of the stages stated are omitted or combined it will reduce the effectiveness of the clean.

Caution

The use of neat bleach or similar surface cleaners are not recommended as damage may be caused to the cleaned surfaces.

11.2 Steam Cleaning

The Innov8 Low can be dry steam cleaned. The individual manufacturer's instructions should be followed when using a steam cleaner and the following precautions observed:

- Avoid pointing steam directly at electrical components and reduce steam pressure when cleaning near electrical items and connections.
- Use soft brushes and wiper cloths as recommended by the steam cleaner manufacturer.
- Do not use high pressure hoses on the bed as they could cause damage to electrical components.
- Do not use excessive force or steam pressure on labels.
- Ensure the bed is dry and all debris from the cleaning process has been removed prior to reuse.
- Ensure all electrical functions operate as normal once the bed has been cleaned and dried.

12. MAINTENANCE

12.1 General Inspection

Drive DeVilbiss Healthcare recommends that the carer performs frequent visual and operational inspections. If there are any signs of damage or the bed is not performing as it should withdraw it from service until the bed has been repaired and is fit for use again.

Periodically check to ensure that:

- The bed operates as per its intended purpose.
- All parts are present.
- All fixtures and fittings are tight.
- The frame is mechanically sound, with no cracking around welds.
- No parts show signs of excessive wear.
- Markings are legible.
- The electrical components display no sign of damage – If so turn off at mains and remove bed from use immediately.
- The bed is cleaned following the guidelines in these instructions for use.

12.2 Fault Finding

Listed below are a set of electrical faults that may occur within the service life of the bed. If a fault does occur please try the following suggestions, as these may help in diagnosing the fault.

Fault	Possible cause	Remedy
Electrical function(s) do not work.	Functions locked out on carer handset.	Unlock function(s) (see section 9.12.3).
	Mains lead not plugged into the control box or wall and battery flat.	Check to see if the mains power indicator on the carer handset is lit and the mains lead is plugged in at both ends.
	Actuator / handset cables not plugged in.	Check plug connections.
	Fuse has blown in the mains plug	Check to see if the mains power indicator on the carer handset is illuminated, if not replace fuse
	Damage to mains cable, actuator cable or handset cables.	Turn off at the mains and contact the approved service supplier.
	Unidentified fault.	Reset / initialise system (to be conducted by approved service supplier only).
Electrical functions working slowly.	Mains cable not plugged into the control box and working off battery backup.	Check that the mains cable is fully located into the control box and the mains power indicator on the carer handset is illuminated.
	Bed is in ultra low position and has slowed to alert carer.	Drive the platform upwards. The platform will travel upwards at full speed.
	Heavy load on the bed.	No corrective action required – check that the load on the bed does not exceed the safe working load.
The bed will not level.	The electrical system has become out of sync.	Reset / initialise system (to be conducted by approved service supplier only).
Audible signal sounding.	Running off battery backup.	Check to see if the mains power indicator on the handset is lit and the mains lead is plugged in at both ends.
	‘Other’ fault alarm.	Turn off at the mains and contact the approved service engineer.

12.3 General Maintenance

Only authorised service personnel or Drive DeVilbiss Healthcare service engineers should carry out repairs or service activities. For Service & Support outside the UK please contact the local distribution company from where this equipment was purchased. Failure to do so may result in the manufacturer's warranty becoming void. **The bed must be serviced once yearly, as a minimum.**

Warning

- Always disconnect the bed from the main power supply prior to performing any maintenance procedures (where viable).
- Modification of the bed frame is not allowed without the permission of Drive DeVilbiss Healthcare Ltd.
- The bed should be vacated by the patient before any maintenance or inspection takes place. If this is not possible due to the patient's mobility, care should be taken for the service engineer not to make contact with the patient when working on electrical items.
- Only Drive DeVilbiss Healthcare approved components, specified for the Innov8 Low bed, should be used - if in doubt contact Drive DeVilbiss Healthcare Ltd or your local distributor.
- Linak battery packs may emit an increased amount of flammable gas as they age – risk of explosion / fire. Drive DeVilbiss Healthcare advise that batteries are replaced every 4 years or sooner.
- Never attempt to re-wire any components.

- Check that all electrical functions operate correctly on both handsets.
- Check that all electrical components and cables are in good condition - If not turn off at the mains and remove bed from use until replacement parts are available.
- Check that all markings are legible and in sufficiently good condition – if not replace adhesive labels as required.
- Check that the bed works correctly when run off battery backup.
- Check that all nuts, bolts and fasteners are tight and that none are missing or incomplete.
- Check all parts are present.
- Check the manual CPR mechanism works correctly.
- Check the platform extension extends and retracts correctly and locks / disengages in both positions.
- Check the leg extension extends and retracts correctly.

- Check that the leg section height adjustment setting works correctly.
- Check that the frame is mechanically sound: no cracking at welds, bending of tubes etc.
- Raise and lower the safety sides. Check that they move smoothly.
- Check that the lock on the safety sides automatically engages when raised.
- If any gaps appear to be outside of specification remove the bed from use until the dimension of the gap in question has been confirmed.
- Check the castors lock, track and swivel correctly.

If in doubt about correct replacement of a component contact Drive DeVilbiss Healthcare Ltd or your local distributor. Refer to the service manual for cable routing diagrams, parts codes / lists, maintenance instructions etc. Copies are available from Drive DeVilbiss Healthcare Ltd. (see section 2).

13. DISPOSAL OF PARTS & ENVIRONMENTAL CONSIDERATIONS

When the bed is unpacked for the first time the wooden packing boards are to be returned to the original provider or Drive DeVilbiss Healthcare Ltd. (see section 2) who will reuse the packaging where possible or if not viable will dispose of the parts in an environmentally responsible manner. If the parts are not returned it is the responsibility of the customer to follow local recycling policy in regards to the disposal of wood.

When the bed frame / electrical system has come to the end of its useful life contact your provider or Drive DeVilbiss Healthcare Ltd. (see section 2) to arrange for collection, alternatively follow local recycling and W.E.E.E. (Waste Electrical and Electronic Equipment) policies.

The electrical system on the bed frame is not to be disposed of in general municipal waste. Some of the electrical components could be harmful to the environment and where viable the components can be recovered and reused / recycled.

The steel and plastic components are also to be separated and disposed of following the local recycling policy as these can also be recovered and recycled.

Warning

The bed is to be decontaminated before disposal to avoid risk of cross contamination.

14. ELECTROMAGNETIC COMPATIBILITY (EMC)

The bed's electrical system has been designed to meet the EMC requirements of IEC 60601-1-2 however it may still be affected by or emit harmful radio frequency (RF) energy. The RF emissions from the electrical system are very low and are not likely to cause any interference to nearby electronic equipment, however interference to sensitive equipment is still possible. Likewise if the immunity limits of the electrical system are exceeded the system may be seen to operate abnormally.

If the bed or any alternative equipment is found to be operating abnormally turn off the piece of equipment that is believed to be causing the interference (if possible) to identify the source of the RF energy. Once identified mitigation measures are to be taken, such as the separation distances being increased and/or the device(s) being re-orientated.

The bed is to be installed and put into service according to the information provided within this section to ensure of reliable operation. However if the bed continues to operate abnormally, turn off at the mains supply and contact Drive DeVilbiss Healthcare Ltd. or your local distributor (see section 2).

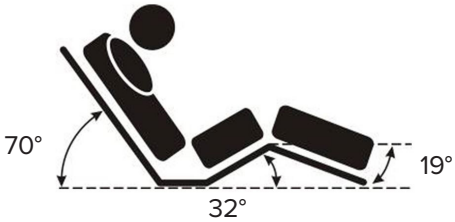
For specific emmisions and immunity information relating to the bed, please contact Drive DeVilbiss Healthcare Ltd or your local distributor (section 2).

Warning

- The bed frame should not be used adjacent to or stacked with other equipment where possible. If adjacent or stacked use is necessary, the bed should be observed to verify normal electrical operation in the configuration in which it is to be used.
- Use of accessories and cables other than those specified or provided by Drive DeVilbiss Healthcare could result in increased electromagnetic emissions or decreased electromagnetic immunity of the bed and result in improper operation.
- Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30cm to any part of the bed (including its cables), otherwise a degredation in performance could result.

15. SPECIFICATION

15.1 Bed Specification

Overall length:	2180mm
Integral length extension:	200mm
Overall width:	1020mm
Mattress platform height:	225mm – 710mm
Under bed clearance:	120mm (platform at 400mm)
Mattress platform length:	2000mm
Mattress platform width:	900mm
Head / Foot down tilt:	± 0 - 12°
Mattress platform angles (max):	

Safe working load:	**255kg (40 stone)**
Maximum patient weight:	**190kg (30 stone)**
Patient height	**146cm - 205cm**
Total product weight: (including bed ends and mattress platform panels)	130kg
Application environment:	1 and 2
Shock and vibration:	To be used on a flat level floor
UV:	Intended for indoor use only

15.2 Performance Characteristics

Voltage in: 230V ±10%, ~50/60Hz
Current in: Max. 2A
Mains cable fuse: 3-10A

Energy consumption in standby mode: 0.0025kWh
Energy consumption at maximum load: 0.27kWh

Duty cycle*: 10%
2 mins of continuous use followed by **18 mins** not in use.

* Electrically operated beds are intended to be operated intermittently rather than continuously. If the bed is operated continuously for up to 2 minutes it must then be left for at least 18 minutes before reuse to allow the electrical system to cool sufficiently. If the bed is continuously used for an extended period of time and it exceeds the duty cycle the control box may become temporarily disabled or irreparably damage.

Safety standards: IEC 60601-1
IEC 60601-2-52
IEC 60601-1-2

Electrical shock protection: Class I, Type B

Applied parts: Mattress platform
Profiling sections
Bed ends
Carer & patient handsets

Liquid ingress protection: IPX4

Environmental conditions:

	Operational Limits**	**Transportation/Storage Limits**
Ambient Temperature	+5°C to 40°C	-10°C to +50°C
Humidity	20% - 90% at 30°C - not condensing	
Atmospheric Pressure	80kPa to 106kPa	
Altitude	≤2000m	
Pollution	Degree 2	

Expected service life: 10 years***

** Always ensure the bed is brought up/down to room temperature before operating.
*** The service life of the bed and its components are dependent on it being serviced and maintained in accordance with the information detailed in section 12 of these instructions.

16. ACCESSORIES

A full range of accessories, including approved mattresses, are available from Drive DeVilbiss Healthcare Ltd.

- Lifting pole — INNOV8/LP
- IV pole — INNOV8/DP
- Oxygen cylinder carrier — INNOV8/RANGE/OC
- Traction – Balkan beam — TRACK/BB/KIT
- Traction – Foot end — TRACK/FE/KIT
- Carer handset holder — INNOV8/RANGE/HSH
- Side rail pads (standard side rails) — INNOV8/LOW/SR/PAD
- Side rail pads (high side rails) — INNOV8/LOW/HSR/PAD

Characteristics of the accessories can be found in the relevant instructions for use.

The Innov8 Low bed is approved with the following mattresses:

		Length	Width	Thickness
Foam Mattresses & Extensions				
MAT10BE	MAT10BE	1990mm	900mm	127mm
MAT20BE	MAT20BE	1990mm	900mm	152mm
Softrest	MAT/SOFT	1990mm	880mm	152mm
Softrest Contour	MAT/SOFT/CON	1990mm	880mm	152mm
Permaftex ST	MAT/SOFT/PERM	1990mm	880mm	152mm
Softrest VE	MAT/SOFT/VE	1990mm	880mm	152mm
Memaflex	MAT/ACCL/MF	1990mm	880mm	152mm
Permaflex HSF	MAT/ACCL/PERM/HSF	1990mm	880mm	152mm
Permaflex Plus	MAT/ACCL/PERM/PLUS	1990mm	880mm	152mm
Acclaim VE	MAT/ACCL/VE/W	1990mm	880mm	152mm
Acclaim VE White	MAT/ACCL/VE/W/WHITE	1990mm	880mm	152mm
Air-Layer	MAT/ACCL/AIR/VE	1990mm	880mm	152mm
Acclaim VE Extension	MAT/ACCL/VE/EX	180mm	880mm	152mm
Softrest Extension	MAT/SOFT/EX	180mm	880mm	152mm
Softrest Extension with securing straps	MAT/SOFT/EX/STRAPS	180mm	880mm	152mm

Dynamic Mattresses				
Atlas	DYN/DIG/ATLAS	2200mm	885mm	200mm
Apollo	DYN/DIG/APOLLO	2000mm	880mm	200mm
Artemis	DYN/DIG/ARTEMIS	2000mm	880mm	200mm
Athena	DYN/DIG/ATHENA	2000mm	900mm	250mm
Trio II	DYN/DIG/TRIO/2	2000mm	880mm	270mm
SoloXtra	DYN/DIG/SOLO/XTR	2000mm	880mm	160mm
Hybrid Mattresses				
Acclaim Flow	MAT/ACCL/FLOW	1990mm	880mm	152mm

For a full list of available accessories, or to check for compatibility and suitability please contact Drive DeVilbiss Healthcare using the contact information provided on the reverse of this document.

Caution

- Dynamic mattresses with short length straps must be strapped to the tubes of the profiling platform sections. The platform panels must be lifted to strap the mattress to the platform tubes, and then re-applied over the straps once in place. Ensure the mattress is only strapped to profiling parts of the bed frame, and the platform panels are secure — risk of product damage.
- It is essential that dynamic mattress straps are only attached to the moving parts of the profiling mattress platform. If the straps are incorrectly fitted around the main frame of the mattress platform, serious damage could occur to various components of the bed. If in doubt contact your provider or Drive DeVilbiss Healthcare Ltd.
- Ensure a dynamic mattress control box is not positioned on the bed's side rail - Risk of control unit falling off when side rails are lowered.

16.1 Mattress / Side Rail Compatibility Chart

		Innov8 Low with standard cantilever side rails	Innov8 Low with high cantilever side rails
Foam Mattresses & Extensions			
MAT10BE	MAT10BE	✓	✓
MAT20BE	MAT20BE	✓	✓
Softrest	MAT/SOFT	✓	✓
Softrest Contour	MAT/SOFT/CON	✓	✓
Permaftex ST	MAT/SOFT/PERM	✓	✓
Softrest VE	MAT/SOFT/VE	✓	✓
Memaflex	MAT/ACCL/MF	✓	✓
Permaflex HSF	MAT/ACCL/PERM/HSF	✓	✓
Permaflex Plus	MAT/ACCL/PERM/PLUS	✓	✓
Acclaim VE	MAT/ACCL/VE/W	✓	✓
Acclaim VE White	MAT/ACCL/VE/W/WHITE	✓	✓
Air-Layer	MAT/ACCL/AIR/VE	✓	✓
Acclaim VE Extension	MAT/ACCL/VE/EX	✓	✓
Softrest Extension	MAT/SOFT/EX	✓	✓
Softrest Extension with securing straps	MAT/SOFT/EX/STRAPS	✓	✓
Dynamic Mattresses			
Atlas	DYN/DIG/ATLAS	-	✓
Apollo	DYN/DIG/APOLLO	-	✓
Artemis	DYN/DIG/ARTEMIS	-	✓
Athena	DYN/DIG/ATHENA	-	✓
Trio II	DYN/DIG/TRIO/2	-	✓
SoloXtra	DYN/DIG/SOLO/XTR	-	✓
Hybrid Mattresses			
Acclaim Flow	MAT/ACCL/FLOW	✓	✓

Warning

- When using the bed with a dynamic mattress, the space introduced by cell compression at the mattress edge and the side rail is to be considered. A patient risk assessment must be performed to ensure an asphyxiation risk is not introduced by the patients face inadvertently sinking into the gap between the mattress and side rail.
- Ensure extension blocks are positioned centrally to the platform. If offset to one side a gap will be introduced between the extension block and the side rail, introducing a potential asphyxiation risk.
- Dynamic mattresses are not to be used with the bed in its extended state - no suitable extension blocks available to fill the gap, as such a hazardous gap will be generated.

Drive DeVilbiss Healthcare cannot be held responsible for any injury or incident which relates to the use of any product combinations not approved by Drive DeVilbiss Healthcare Ltd.

It is the carer's responsibility for selecting and fitting the products correctly and ensuring that the product combination is compatible.

17. WARRANTY

Drive DeVilbiss Healthcare Ltd. guarantees this product is free from defects in material and workmanship under normal use for 3 years (1 year full parts and labour, 2 further years parts only) from the date of purchase from Drive DeVilbiss Healthcare Ltd. and its subsidiary companies or its authorised dealers. All implied warranties, including but not limited to those implied warranties of fitness and merchantability, are limited in the total duration of 3 years from date of purchase.

DRIVE DEVILBISS HEALTHCARE LTD. MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. IN NO EVENT WILL DRIVE DEVILBISS Healthcare LTD. BE LIABLE FOR PUNITIVE, SPECIAL OR CONSEQUENTIAL DAMAGES, OR FOR AN AMOUNT IN EXCESS OF THE PURCHASE PRICE OF THE DEFECTIVE DRIVE DEVILBISS HEALTHCARE LTD. PRODUCT OR PRODUCTS.

Proof of purchase must be presented with any claim. Except as provided herein, this warranty will not apply to any Drive DeVilbiss Healthcare Ltd. products that have been (a) damaged by lightning, water, or power surges, (b) neglected, altered, abused, or used for a purpose other than the purpose for which they were designed, (c) repaired by you or any other party without Drive DeVilbiss Healthcare Ltd. prior written authorisation, (d) used in conjunction with a third party product or products not approved in advance by Drive DeVilbiss Healthcare Ltd., (e) damaged or failed by or attributes to acts of God, (f) damaged, caused by failure to follow instructions,or (g) otherwise used in a manner inconsistent with any instructions provided by Drive DeVilbiss Healthcare Ltd. The warranty explicitly exempts consumable items.

This warranty contains the entire agreement between you and Drive DeVilbiss Healthcare Ltd. with respect to any warranty matters, and supersedes any and all other written or oral statements, representations or agreements relating to the subject matter of this warranty.

In the event of a product defect during the warranty period you should contact your supplier, whether it be Drive DeVilbiss Healthcare Ltd., its subsidiary companies, authorised dealers or international distributors who will at their option unless otherwise provided by law; a) correct the defect by product repair within the terms of the warranty b) replace the product with one of the same or similar design or c) refund the purchase price. All replaced parts and products on which a refund is made become the property of Drive DeVilbiss Healthcare Ltd. Repaired or replaced parts and products are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the product made after the expiration of the warranty period.

This limited 3 year warranty gives you specific legal rights and you may also have other rights.

Drive DeVilbiss Healthcare Ltd. cannot be held responsible for any injury or incident which relates to the use of this bed in conjunction with accessories manufactured by companies other than Drive DeVilbiss Healthcare Ltd.

Drive DeVilbiss Healthcare Ltd. has a policy of continual product improvement and reserves the right to amend specifications covered in this document.

18. NOTES

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