

# Invacare® SB® 910



en Bed  
User Manual



This manual MUST be given to the user of the product.  
BEFORE using this product, this manual MUST be read and saved  
for future reference.



**Yes, you can.®**

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# 1 General

## 1.1 Introduction

This user manual contains important information about the handling of the product. To ensure safety when using the product, read the user manual carefully and follow the safety instructions.

Note that there may be sections in this document, which are not relevant to your product, since this document applies to all available models (on the date of printing). If not otherwise stated, each section in this document refers to all models of the product.

The models and configurations available in your country can be found in the country-specific sales documents.

Invacare reserves the right to alter product specifications without further notice.

Before reading this document, make sure you have the latest version. You find the latest version as a PDF on the Invacare website.

If you find that the font size in the printed document is difficult to read, you can download the PDF version from the website. The PDF can then be scaled on screen to a font size that is more comfortable for you.

For more information about the product, for example product safety notices and product recalls, contact your Invacare distributor. See addresses at the end of this document.

In case of a serious incident with the product, you should inform the manufacturer and the competent authority in your country.

### 1.1.1 Symbols in this Document

Symbols and signal words are used in this document and apply to hazards or unsafe practices which could result in personal injury or property damage. See the information below for definitions of the signal words.



#### WARNING

Indicates a hazardous situation that could result in serious injury or death if it is not avoided.



#### CAUTION

Indicates a hazardous situation that could result in minor or slight injury if it is not avoided.



#### IMPORTANT

Indicates a hazardous situation that could result in damage to property if it is not avoided.



#### Tips and Recommendations

Gives useful tips, recommendations and information for efficient, trouble-free use.

## 1.2 Service Life

The expected service life of this product is ten years when used daily and in accordance with the safety instructions, maintenance intervals and correct use, stated in this manual. The effective service life can vary according to frequency and intensity of use.

## 1.3 Compliance

Quality is fundamental to the company's operation, working within the disciplines of ISO 13485.

This product features the CE mark, in compliance with the Medical Device Regulation 2017/745 Class I. The launch date of this product is stated in the CE declaration of conformity.

We are continuously working towards ensuring that the company's impact on the environment, locally and globally, is reduced to a minimum.

We only use REACH compliant materials and components.

We comply with the current environmental legislations WEEE and RoHS.

### 1.3.1 Product-specific standards

The product has been tested and conforms to IEC 60601-2-52 (Particular requirements for the basic safety and essential performance of medical beds) and all related standards.

For further information about local standards and regulations, contact your local Invacare representative. See addresses at the end of this document.

## 1.4 Warranty Information

We provide a manufacturer's warranty for the product in accordance with our General Terms and Conditions of Business in the respective countries.

Warranty claims can only be made through the provider from whom the product was obtained.

## 1.5 Limitation of Liability

Invacare accepts no liability for damage arising from:

- Non-compliance with the user manual
- Incorrect use
- Natural wear and tear
- Incorrect assembly or set-up by the purchaser or a third party
- Technical modifications
- Unauthorised modifications and/or use of unsuitable spare parts

## 2 Safety

### 2.1 General safety information

This section of the manual contains general safety information about your product. For specific safety information, refer to the appropriate section of the manual and procedures within that section.



**WARNING!**

**Risk of injury or damage**

- Do not use this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as user manuals or instruction sheets supplied with this product or optional equipment. If you are unable to understand the warnings, cautions or instructions, contact a healthcare professional, Invacare provider or qualified technician before attempting to use this product.
- Do not make any unauthorized alterations or modifications to the product.



**WARNING!**

**Risk of entrapment / suffocation**

There's a risk of entrapment / suffocation between mattress support, side rail and bed end or between moving parts and objects placed nearby the bed.

- The bed must not be used by persons under 12 years of age, or by persons with a body size equivalent to an average 12 years old or smaller.
- The bed, in combination with side rails must not be used by persons having a physical size less than 146 cm, a weight less than 40 kg or a body mass index (BMI) less than 17.
- Due to mattress compression, an increased risk may occur over time. Periodically monitor gaps between the bed, mattress and/or side rail. Replace mattress if the gaps may lead to entrapment.



**WARNING!**

**Risk of slipping through the openings**

The bed fulfils all requirements regarding maximum distances. However, it is possible that persons with small body dimensions slip through the openings between the side rails or through the opening between the side rail and the mattress support.

- Pay special attention, if the bed is used for the care of persons with small body dimensions.



**WARNING!**

**Risk of injury or damage**

- Inappropriate handling of cables, incorrect connections and use of unauthorized equipment can cause electrical shock and product failure.
- Do not kink, shear or otherwise damage the cables of the product.
  - Make sure that no cables are jammed or damaged, when the product is used.
  - Disconnect the plug from the mains before moving the bed.
  - Make sure the wiring is correct and connections are proper.
  - Do not use unauthorized equipment.



**WARNING!**

**Risk of tripping, entanglement or strangulation**

- Improper routing of cables may cause tripping, entanglement or strangulation hazard.
- Ensure all cables are routed and secured properly.
  - Ensure there are no loops of excess cable extending away from the product.



**WARNING!**

**Risk of injury or damage**

- Ignition sources can cause burns or fire.
- Bed must be placed with a safety space from possible ignition sources (heater, fireplace, etc.)
  - The patient and assistants must not smoke while using or operating the bed.



**WARNING!**

**Risk of injury or damage**

- To avoid injury or damage when operating the product:
- Close supervision is necessary when the product is used near children or pets.
  - Do not let children play with the product.



**CAUTION!**

- For a person entering or exiting the bed, always lower the bed to an appropriate height. The backrest can be used as a support. Make sure, the thigh- and leg section is horizontal to avoid overloading the mattress support.
- Always lower the bed to the lowest position before leaving a person in the bed unattended.
- Make sure that there is nothing under, over, or near the bed that can obstruct the height adjustment, like for example furniture, lifts or window frames.



**CAUTION!**

- Non-original or wrong accessories may affect the function and safety of the product.
- Only use original accessories for the product in use.
  - Due to regional differences, refer to your local Invacare catalog or website for available accessories or contact your local Invacare representative. See addresses at the end of this document.

**CAUTION!****Risk of injury or damage**

The product can get hot when exposed to sunlight or other heat sources.

- Do not expose the product to direct sunlight for prolonged periods.
- Keep the product away from heat sources.

**CAUTION!**

There is a risk of entrapment of fingers in the bed moving parts.

- Pay attention to your fingers.

**IMPORTANT!**

The bed has no isolator (main switch). If the bed needs to be electrically disconnected, it has to be unplugged from the mains socket.

- Always place the bed in a way so the mains socket is easily accessible to unplug the bed.

**IMPORTANT!**

Accumulation of lint, dust and other dirt can impair the product.

- Keep the product clean.

## 2.2 Mattresses

**WARNING!****Safety aspects regarding combination of side rails and mattresses:**

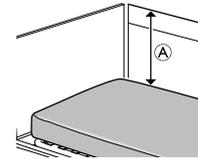
To get the highest possible safety level, when using side rails on the bed, the minimum and maximum measures for mattresses, must be respected.

- For correct mattress measures see mattress table in chapter 9 *Technical Data*, page 22.

**WARNING!****Risk of entrapment and/or suffocation**

– The user could get trapped and/or suffocate, if the horizontal space, between the mattress side and the inside of the side rail, is too big. Follow the minimum width (and length) of mattresses in combination with a side rail, as stated in the mattress table in chapter 9 *Technical Data*, page 22 .

- Be aware that using very thick or soft mattresses (low density), or a combination of these, increases the risk.

**WARNING!****Risk of falling**

The user can fall over the edge and get seriously injured, if the vertical distance (A) between the top of the mattress and the edge of the side rail/bed end, is too short. See image above.

- Always keep a minimum distance (A) of 22 cm.
- Follow the maximum mattress height in combination with the side rail as stated in the mattress table in chapter 9 *Technical Data*, page 22.

## 2.3 Safety information on electromagnetic interference

**WARNING!****Risk of malfunction due to electromagnetic interference**

Electromagnetic interference between this product and other electrical equipment can occur and disturb the electrical adjustment functions of this product. To prevent, reduce or eliminate such electromagnetic interference:

- Only use original cables, accessories and spare parts, to not increase electromagnetic emission or reduce electromagnetic immunity of this product.
- Do not use portable radio frequency (RF) communications equipment closer than 30 cm to any part of this product (including cables).
- Do not use this product near active high-frequency surgical equipment and the RF shielded room of a system for magnetic resonance imaging, where the intensity of electromagnetic disturbances is high.
- If disturbances occur, increase the distance between this product and the other equipment or switch it off.
- Refer to the detailed information and follow the guidance in chapter 10 *Electromagnetic compatibility (EMC)*, page 23.



**WARNING!**

**Risk of malfunction due to electromagnetic interference**

Do not use this bed adjacent to or stacked with other electrical equipment, than specified in the following, as it could result in improper operation. If such use is necessary, the bed and the other equipment must be closely observed to verify that they are operating normally.

This bed can be used together with Invacare approved accessories and medical electrical equipment connected to the heart (intracardially) or blood vessels (intravascularly) provided that following points are respected:

- Medical electrical equipment should not be fixed on the bed's metallic accessories such as side rails, lifting pole, drip rod, bed ends, etc.
- The medical electrical equipment power supply cord should be kept clear of the accessories or any other moving parts of the bed.

	WEEE conform
	European Conformity

Abbreviations for technical data:

- lin = Incoming Current
- Uin = Incoming Voltage
- Int. = Intermittence
- AC = Alternating Current
- Max = maximum
- min = minutes

For more information about technical data, refer to 9 *Technical Data, page 22.*

**2.4.2 Other Labels**

Read the user manual before using this product and follow all instructions for safety and use.	

	Definition of min. weight, min. height and min. body mass index of an adult user. See 3.1 <i>Intended use, page 8.</i>
	Refer to user documentation for the correct mattress measures. See 9 <i>Technical Data, page 22.</i>

	Total weight of the product with the maximum safe working load applied
	Temperature limit
	Humidity limitation
	Atmospheric pressure limitation
	Transport and storage conditions
	Operation conditions

**2.4 Labels and symbols on the product**

**2.4.1 Identification Label**

The identification label is placed on the frame of the bed and contains the main product information, including technical data.

	Serial number
	Reference number
	Manufacturer
	Date of manufacture
	Medical device
	Max. user weight
	Max. safe working load
	CLASS I equipment
	Type B applied part

## 3 Product Overview

### 3.1 Intended use

The bed is defined to be used according to:

- *Application environment 1*; Intensive/critical care provided in a hospital where 24 h medical supervision and constant monitoring is required and provision of life support system/equipment used in medical procedures is essential to maintain or improve the vital functions of the user.
- *Application environment 2*; Acute care provided in a hospital or other medical facility where medical supervision and monitoring is required and ME Equipment used in medical procedures is often provided to help, maintain or improve the condition of the user.
- *Application environment 5*; Ambulatory care, which is provided in a hospital or other medical facility, under medical supervision where ME Equipment, is provided for the need of users with illness, injury or disability for treatment, diagnosis or monitoring.
- The bed is intended for adult users, having a physical size equal to or more than 146 cm, a weight equal to or more than 40 kg and a body mass index (BMI) equal to or more than 17.
- Maximum user weight and safe working load are listed on the product label and in the technical data section in this manual.
- The bed is not intended for psychiatric patients.
- The bed can be emergency operated by means of the built-in accumulator back-up.



#### WARNING!

Any other or incorrect use could lead to hazardous situations.

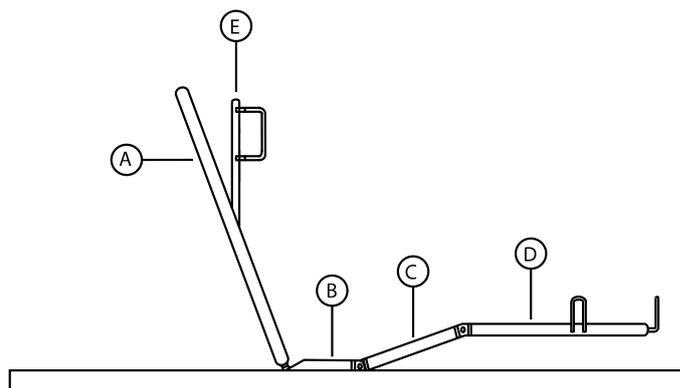
Invacare accepts no liability for any use, change or assembly of the product, other than stated in this user manual.

#### 3.1.1 Intended Operator

A healthcare professional or private person who has received proper training is the intended operator of this product.

The hand control can also be operated by the occupant of the bed.

### 3.2 Main parts of bed



(A)	Back rest
(B)	Seat section
(C)	Thigh section
(D)	Leg section
(E)	Neck rest

### 3.3 Accessories



Due to regional differences, refer to your local Invacare website or catalog for details about available accessories or contact your Invacare provider.

#### List of available accessories

- Side rail height extender – 10 cm height increase
- Lifting pole – to be mounted on one of the lifting pole tubes at the head end of the bed (fixed or swivelling)
- IV Drop rod – Holder for infusion bags with 3 hooks to be mounted on one of the lifting pole tubes (standard or telescopic)
- Storage basket – to be mounted on the base of the bed
- Plate for medical record – holder for A4 paper (horizontal or vertical)

## 4 Setup

### 4.1 General Safety Information



**WARNING!**

**Risk of injury or damage**

Damaged parts may affect the safety of the product.

- Check all parts for shipping damage before use.
- In case of damage, do not use the product and contact your Invacare provider for further instructions.



**WARNING!**

**Risk of injury or damage to property**

The assembly of the bed and installation of accessories must only be performed by a qualified technician or a person who has received proper training.

- Follow instructions carefully. If you have any question regarding the assembly, contact your Invacare provider.
- The electrical equipment of the bed must not be dismantled or combined with other electrical equipment.
- After each assembly, check that all fittings are properly tightened and that all parts have the correct function.



**IMPORTANT!**

- To prevent condensation, the bed should not be used until it has reached operating temperature. See 9 *Technical Data*, page 22

### 4.2 Wiring



**IMPORTANT!**

- The cables must be mounted in such a way that they are kept clear of the floor and do not block the castors.

- Check the cabling by operating the motors of the bed to their outer positions.
- Make sure that the cables are not being squeezed.
- The cables are equipped with plugs at both sections, hence, they can be replaced independently.



**IP Protection**

- The hand control, control unit and motors are protected according to IPX6w.

## 5 Operating the bed

### 5.1 General Safety Information



**WARNING!**

**Risk of personal injury and damage to property.**

- The bed must be placed so that the height adjustment is not obstructed by, for example, lifts or furniture.
- Take care that no body parts are being squeezed between fixed parts (such as side rails, bed ends etc) and moving parts.
- The hand control must not be used by children.



**WARNING!**

**Risk of injury**

If the bed is used by confused or restless users or users with spasms:

- either, when the bed is equipped with a lockable hand control, lock the hand control functions,
- or make sure that the hand control is out of reach for the user.

### 5.2 Operating side rails

#### 5.2.1 Steel side rail

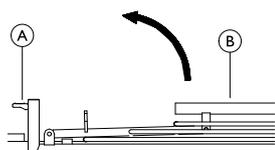
The bed is equipped with a 3/4 length collapsible steel side rail (164 cm x 43 cm), mounted on the side tube. Release button is placed in the head section.



**CAUTION!**

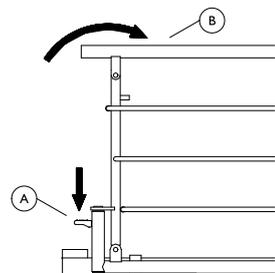
- There's a risk of entrapment of fingers on assembly and operation of the side rail.
- Be careful when folding down the side rail.

Up:



Lift and pull the top bar ② of the side rail towards the end with the locking mechanism (release button) ①. Ensure, it is locked in place.

Down:



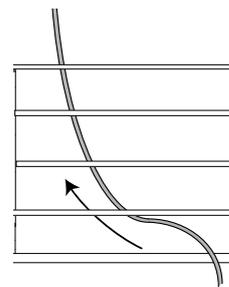
Press the release button ① and push the top bar ② of the side rail away from the locking mechanism



**CAUTION!**

- If the side rail is not properly locked it can fall down.
- Pull/push the top bar of the side rail to ensure that the locking system is properly engaged.

### Threading tubes or cables



**Risk of squeezing tubes or cables**

Cables and tubes can get squeezed and damaged if they are not correctly threaded through the slats of the side rail.

- Always thread cables and tubes through the lower gap and up along the inside of the side rail. See image.

### 5.3 User hand controls

#### 5.3.1 Hand control HB75

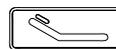
Function buttons

To control bed sections; Press Up (left side) or Down (right side) of each button.

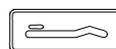


Sitting position

"0" (down). Positions the mattress support (all sections) to horizontal position. No height adjustment.



Backrest



Thigh section



Leg section



Height adjustment

### 5.4 Attendant controls

The bed can be equipped with different attendant controls. Follow instructions for your control.

#### 5.4.1 Attendant control — HD8



**IMPORTANT!**

The attendant control is only to be used by the carer.

- Keep out of reach for user.



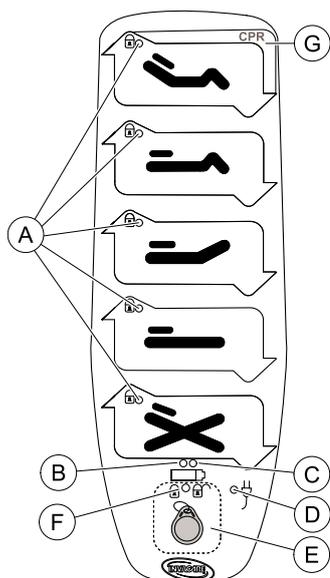
**WARNING!**

**Risk of fatal injury**

Trendelenburg function - tilting with head down, can have a fatal effect on users who are sensitive for increased blood pressure in the upper part of the body.

- Before using positions where the lower extremities are positioned higher than the heart, a medical evaluation has to be done.

## Functions



- (A) Yellow LED lamp lights up when the function is locked
- (B) Yellow LED lamp lights up when the battery level is low
- (C) Green LED lamp lights up when the battery is fully charged
- (D) Green LED lamp lights up when the battery is charging (connected to the mains)
- (E) Locking area
- (F) Yellow LED lamp flashes when locking function is activated
- (G) CPR button positions the mattress support in horizontal position and sets it to its lowest position.



- Function button for sitting position
- Function button for thigh section
- Function button for leg section
- Function button for height adjustment
- Function button for Trendelenburg: All sections are positioned flat and the mattress support is tilted head down. AntiTrendelenburg: The mattress support is tilted head up.

## Operating functions

- For up; Press left side of function button.
- For down; Press right side of function button.

## Locking functions

**i** When a function is locked with the attendant control; the corresponding button on the hand control can not be used.

- To lock a function, swipe locking magnet over locking area (E). The LED lamp (F) flashes when the locking function is ready to be set.
- Press wanted function button. The LED lamp (A) lights up when the respective function is locked.

- Check that the corresponding function, on the hand control, is deactivated.
- To unlock a function, repeat steps 1 to 3. The LED lamp (A) goes off when the respective function is unlocked.

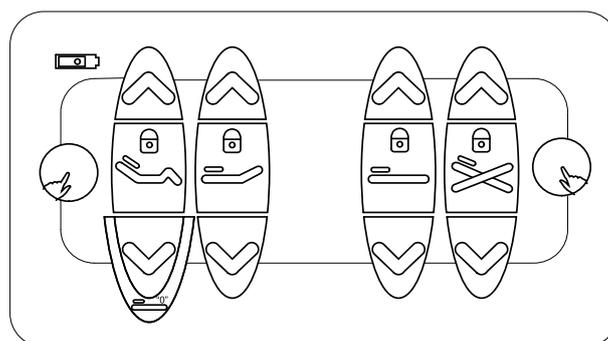
**i** The CPR button (G) has the highest priority and pressing this overrides all other locked functions.

## 5.4.2 ACO - Attendant control

**!** **IMPORTANT!**  
The ACO is only to be used by the carer.  
– Keep out of reach for user.

**!** **WARNING!**  
**Risk of fatal injury**  
Trendelenburg function - tilting with head down, can have a fatal effect on users who are sensitive for increased blood pressure in the upper part of the body.  
– Before using positions where the lower extremities are positioned higher than the heart, a medical evaluation has to be done.

## ACO functions



- Up / Down
- Light on = function locked  
Light off = function unlocked
- Control button
- Battery charge indicator
- Sitting position
- Leg section
- Height adjustment
- Trendelenburg: All sections are positioned flat and the mattress support is tilted head down.  
AntiTrendelenburg: The mattress support is tilted head up.
- The mattress support is set to horizontal position with all sections flat with a subsequent height adjustment to the lowest position.

## Operating functions

- Press and hold the control button (⚡)
- Press Up or Down (↕)

## Locking functions

 When a function is locked with the ACO the corresponding button on the hand control (HB75) can not be used.

1. Press and hold the control button 
2. Press the wanted function 
3. The LED on the padlock  lights up when the function is locked.
4. Check that the corresponding hand control button is deactivated.

## 5.5 Backup Battery

The bed is equipped with a built-in backup battery.



### WARNING!

#### Risk of explosion

Old or faulty batteries may generate an explosive gas mixture during charging.

- The battery box is provided with vents to ensure adequate ventilation of the box. Do not block or cover the vents, as this may result in pressure built-up and the risk of explosion.



### IMPORTANT!

#### Low battery capacity

- When the battery only has capacity left for one more lifting cycle, the control unit will make an audible sound, when using the hand control.

### Charging the batteries

The batteries are charged when the control unit is connected to the mains.



- The control unit must be connected to the mains for 24 hours prior to first use.
- Batteries are not damaged by continuous connection to the mains.

### Preventive maintenance

Batteries must be charged, at least, every 6 months for maintenance purposes.

We recommend the batteries to be tested at least once a year.



Frequent, sudden discharges reduce the lifetime of the battery.

## 5.6 Castors and central brake systems



### CAUTION!

#### Risk of trapping/squeezing

All brakes are foot-operated.

- Do not release the brake with the fingers.



### CAUTION!

#### Risk of injury

User can fall, while entering or exiting the bed, if brakes are not locked.

- Always lock the brakes before the user is moving in or out of bed or when attending to the user.



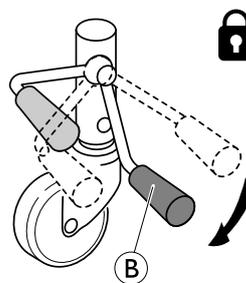
Castors might make marks on different types of absorbing floor surfaces - such as untreated or badly treated floors. To prevent marks, *Invacare®* recommends to place a suitable kind of protection between the castors and the floor.

### 5.6.1 Central brake system

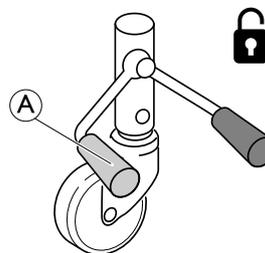
All the wheels are locked by locking one of the pedals.



Always stand in the middle of the bed's long side when locking the brakes.



1. Lock the brakes:  
Step on the red pedal .

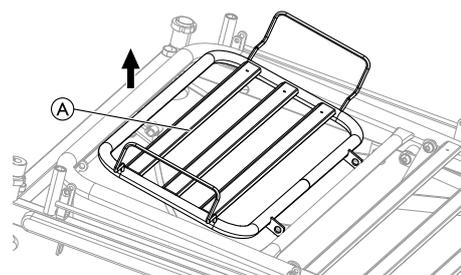


1. Unlock the brakes:  
Step on the green pedal  until the brake is in **neutral position** = Both pedals on the same level.

## 5.7 Neck rest

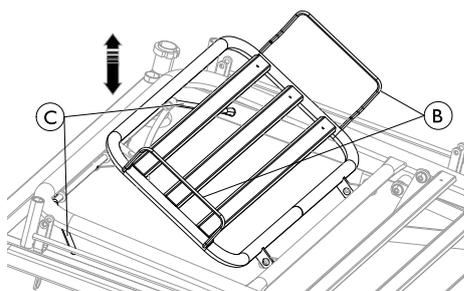
The neck rest is manually operated.

UP



Lift up the neckrest  until it reaches the preferred position and release.

**DOWN**



1. At the same time; Lift one of the neck braces **B** and one of the handles **C**.
2. Lower the neck rest.

**5.8 Emergency release of the backrest**

**i** An emergency release of the backrest could be necessary in the case of power- or motor failure.



**WARNING!**  
**Risk of entrapment**

The backrest comes down fast and there is a risk of entrapment under the backrest.

- A minimum of two persons are required to release the backrest.
- Do not reach under the backrest, while lowering.



**WARNING!**  
**Risk of head injury**

User can hit the bed end while lowering.

- Make sure the users' head is not above the edge of the backrest.

**Risk of spinal injury or wounds**

Quick movements can cause spinal injury or wounds to open.

- Check user while lowering.



**IMPORTANT!**

- An emergency release of the height adjustment or thigh/leg section is NOT possible.
- Remove the plug from the mains socket before emergency release of the backrest.



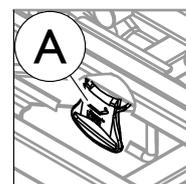
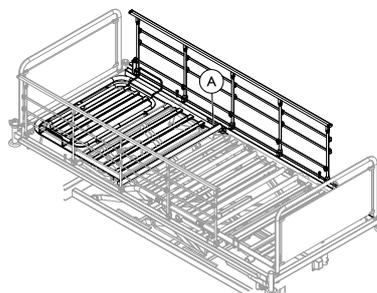
1. Both persons must hold the backrest.
2. One of them pulls out the cotter pin from the motor on the left hand side.
3. Both persons slowly lower the backrest until it is completely down.

**5.8.1 Quick release backrest — CPR (optional)**

The CPR function is marked with a label on the bed.



The quick release handle **A** is placed under the mattress support frame on the left side.



**IMPORTANT!**  
**Before use**

- Make sure that the carer is familiar with the CPR function before using it the first time.
- Place the bed with free access to the release handle (left side of bed).

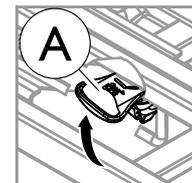


**WARNING!**  
**Risk of entrapment or squeezing of body parts in openings.**

- Do not reach under the backrest, while lowering.
- Pay attention to body parts (user and carers) during lowering.
- Hold backrest while lowering to make sure it does not come down too fast.

**Use CPR function**

1. Hold the backrest with one hand. Recommended to be one person on each side.
- 2.



3. Pull the handle **A** upwards while holding the backrest. The body weight of the user presses down the backrest.
3. Keep holding the handle up when lowering the backrest.
4. Release the handle to fixate the backrest in wanted position.



The backrest motor will work normally again, when the handle has been released and gone back to its resting position.

**5.9 Integrated mattress support extension**



For users taller than two meters, it is recommended to use the mattress support extension.



**WARNING!**

**Risk of injury**

The user can fall out of bed, get hit by the lifting pole, get trapped or suffocated.

- Always extend the mattress support when extending bed ends.
- There must be a distance of more than 2,5 cm, between the bed end and outside of mattress retainer, to avoid entrapment of fingers.
- Always make sure to tighten the screws for the mattress support extension.



**WARNING!**

**Risk of entrapment.**

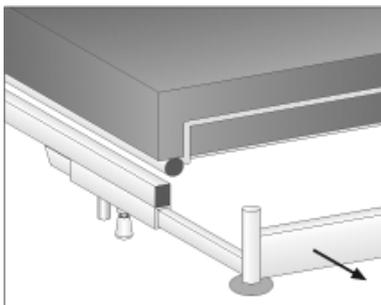
- Be careful while adjusting the mattress support.

1.



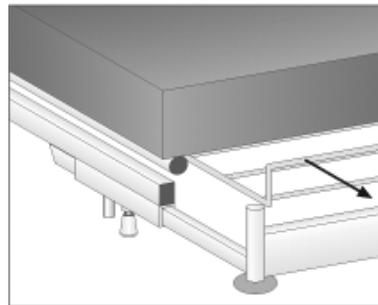
Remove the bed end plate in the foot end and loosen the screws on both sides.

2.



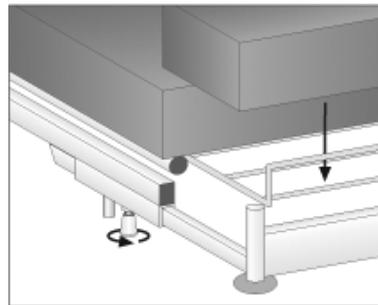
Pull the bed end fitting from the frame. This can be done in two steps of respectively 15 and 20 cm.

3.



Release the centrally located spring and pull out the mattress support extension.

4.



Tighten both screws again and place the extended mattress on the bed.

## 5.10 Lifting pole



**WARNING!**

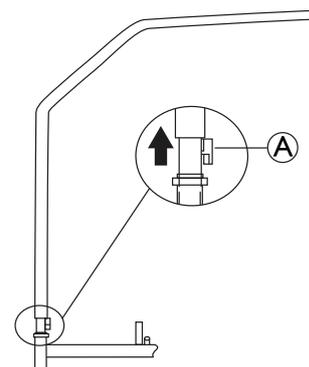
**Risk of injury**

The bed can tip if the handle is used, while the lifting pole is turned away from the bed.

- The lifting pole always has to be positioned with the handle hanging over the bed area.
- Do not exceed the maximum load of the lifting pole; 80 kg.

### 5.10.1 Positioning the lifting pole

1.

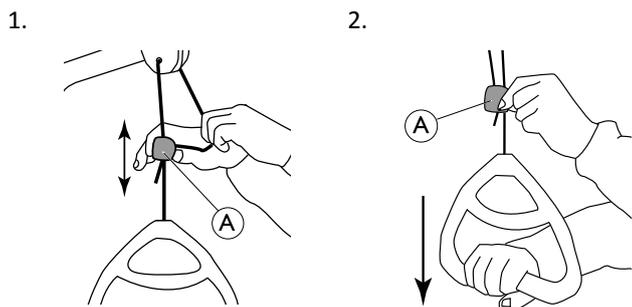


Lift the lifting pole until the control latch **A** is released from the lifting pole tube.

2. Turn the lifting pole to the desired position.
3. Lower the lifting pole and fixate it.

### 5.10.2 Adjusting the handle height

The handle height should always be adjusted to the user's need.



1. Hold the cord out while sliding the plastic cord lock (A) upwards or downwards until the handle reaches the preferred height.
2. Lock the handle by pressing back the cord in the lock (A) and pull the handle downwards.

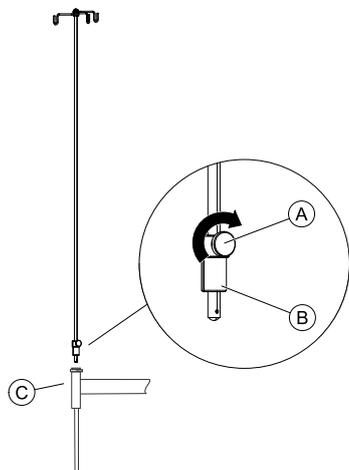
**! IMPORTANT!**

- After adjusting the handle height:
- Check that the two cords above the cord lock are parallel and inside the cord lock.
  - Make sure the cord is properly locked by pulling the handle hard.

## 5.11 IV Drop rod

The IV Drop rod is placed in one of the four corner tubes.

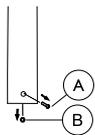
### 5.11.1 IV Drop rod standard

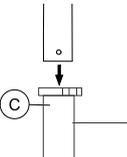
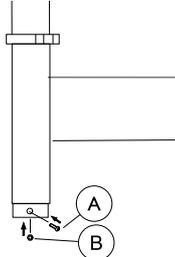


1. Place the bushing (B) into the desired corner tube (C).
2. Position the IV drop rod in the desired height.
3. Tighten the finger screw (A).

### 5.11.2 IV Drop rod telescopic

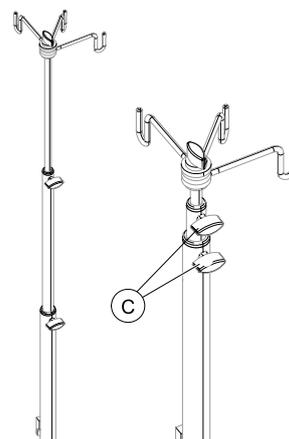
#### Mounting

1.  Remove the screw (A) and nut (B) from the bottom of the IV pole.

2.  Place the drop rod in one of the two head corner attachments (C) of the bed and push it all the way down.
3.  Put the screw (A) and nut (B) back and tighten.

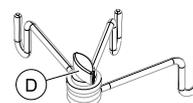
4. Make sure it is steadily mounted before using.

#### Change of height



1. Loosen the finger screws (C).
2. Pull the pole up to wanted height.
3. Tighten the finger screws (C).

#### Changing position of the hooks



1. Loosen the finger screw (D) on top of the IV drop rod.
2. Move the hooks to wanted position.
3. Tighten the finger screw (D).

## 6 Maintenance

### 6.1 General maintenance information



#### CAUTION!

##### Risk of injury or damage

- Do not perform any maintenance or service procedures while the product is in use.

Follow the maintenance procedures described in this manual to keep your product in continuous operation.

#### 6.1.1 Consequences of insufficient maintenance



#### CAUTION!

- Not properly tightened or assembled starlock buttons, pipe pins, bolts and circlips could lead to loss of stability.
- Not lubrication or insufficient lubrication could lead to overloading of the motors.
- Water in the weldings could cause bacteria to grow or lead to corrosion to the metal bed parts.
- Not properly maintained wheels could make the bed heavy and difficult to move.
- Not properly adjusted or lubricated side rails could lead to safety related issues or heavy handling.
- Poor checking of the electrical equipment could lead to unintended Trendelenburg adjustment or other unexpected bed functions.
- Damages to the paint work could lead to rust formation.



The bed can lose one or several of its functions as a consequence of longer periods without maintenance.

### 6.2 Cleaning and Disinfection

#### 6.2.1 General safety information



#### CAUTION!

##### Risk of contamination

- Take precautions for yourself and use appropriate protective equipment.



#### CAUTION!

##### Risk of electric shock and product damage

- Switch off the device and disconnect from mains, if applicable.
- When cleaning electronic components consider their protection class regarding water ingress.
- Make sure that no water splashes to the plug or the wall outlet.
- Do not touch the power socket with wet hands.



#### IMPORTANT!

- Wrong fluids or methods can harm or damage the product.
- All cleaning agents and disinfectants used must be effective, compatible with one another and must protect the materials they are used to clean.
  - Never use corrosive fluids (alkalines, acid etc.) or abrasive cleaning agents. We recommend an ordinary household cleaning agent such as dishwashing liquid, if not specified otherwise in the cleaning instructions.
  - Never use a solvent (cellulose thinner, acetone etc.) that changes the structure of the plastic or dissolves the attached labels.
  - Always make sure that the product is completely dried before taking into use again.



For cleaning and disinfection in clinical or long-term care environments, follow your in-house procedures.

#### 6.2.2 Cleaning Intervals



#### IMPORTANT!

- Regular cleaning and disinfection enhances smooth operation, increases the service life and prevents contamination.
- Clean and disinfect the product
- regularly while it is in use,
  - before and after any service procedure,
  - when it has been in contact with any body fluids,
  - before using it for a new user.

#### 6.2.3 Cleaning by hand

##### Electrical components

- Method: Wipe off with a wet cloth or soft brush.
- Max. temperature: 40 °C
- Solvent/chemicals: Ordinary household cleaning agents and water.
- Drying: Wipe dry with a soft cloth

##### Metal components

- Method: Wipe off with a wet cloth or soft brush. Water may be pressurized, but not high pressure or steam.
- Max. temperature: 40 °C
- Solvent/chemicals: Ordinary household cleaning agents and water.
- Drying: Wipe dry with a soft cloth

##### Wood (including textile straps on side rails, if existing)

- Method: Wipe off with a wet cloth or soft brush.
- Max. temperature: 40 °C
- Solvent/chemicals: Ordinary household cleaning agents and water.
- Drying: Wipe dry with a soft cloth

##### Textiles (including upholstery and mattresses)

- See attached label on each product.

#### 6.2.4 Cleaning in automatic washing systems



The bed can withstand cleaning in automatic washing systems and jet stream washing.

**! IMPORTANT!****Before washing the bed**

- Make sure the power plug is removed from the wall socket outlet before cleaning.
- Make sure that all plugs on the bed are in place during washing.
- Check that all motors and the hand control is correctly connected to the control unit.
- Run the motors all the way down/in to prevent calcium settlements and corrosion.

**! IMPORTANT!****After washing the bed**

- Flushing must be done after washing.
- Do not cool the bed off with water immediately after washing.
- The bed must be dry when leaving the washing tunnel, or when back in room temperature.
- During air-drying, do not exceed a temperature of 50° C.

**Washing**

- Use a water temperature of max. 70° C.
- Max. duration: 2 min.
- The water pressure must not exceed 8 bar in a distance of least 30 cm.
- The cleaning solvent:
  - must have a pH value of 5-8
  - must not change the surface structure of plastic parts
  - must not dissolve the attached labels
  - must not dissolve grease

**Flushing**

- Use a water temperature of max. 85° C.
- Max. duration: 20 sec.
- Use a flushing solvent with a pH value of 5-8.

**Drying**

- Dry the bed after washing.

**! IMPORTANT!****Check after washing**

- Test all functions to ensure proper operation.
- Lubricate the bed according to the lubrication chart.

**Inspection after washing****! IMPORTANT!**

- When the bed has been washed; before given to a new user it has to be thoroughly inspected.
  - Inspection must be done by a trained professional.
  - For regular maintenance see Maintenance checklist.

**Checkpoints**

- Check the locking of the motors (pipe pins correctly mounted).

- Check the electronic wiring for the motors (wires not squeezed).
- Check that the enclosing of the motors are intact (no cracks that enables fluids to pierce).
- Check the sections of the mattress support by using the hand control to activate all functions of the moving parts.
- Check the function of the brakes.
- Check the locking function(s) of the side rails.

**6.2.5 Disinfection Instructions**

Information on recommended disinfectants and methods can be found on <https://vah-online.de/en/for-users>.

**In Domestic Care**

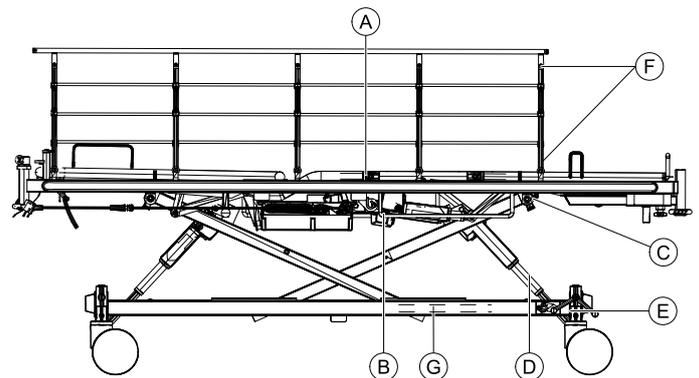
Method: Follow the application notes for the used disinfectant and wipe-disinfect all accessible surfaces.

Disinfectant: Ordinary household disinfectant.

Drying: Allow the product to air-dry.

**In Clinical and Long Term Care**

Follow your in-house disinfection procedures and only use the disinfectants and methods specified therein.

**6.2.6 Lubrication**

Lubricate with medically clean oil:

- Ⓐ All mattress support hinges
- Ⓑ All bearings for motors
- Ⓒ All bearings for lifting arms
- Ⓓ All motor compression bars
- Ⓔ 6-edged axle at braking pedals
- Ⓕ All top and lower hinges of side rail

Lubricate with medical grease:

- Ⓖ Guideways on base

## 6.3 Service

- !** **IMPORTANT!**
- The mattress support must be supported during service inspections, to prevent accidental lowering.
  - Only personnel who have received the necessary instructions or training may perform service and maintenance of the bed.
  - After reconditioning the bed, or if bed functions change, service must be carried out according to the service checkpoints and intervals.

A service contract can be made in the countries, where Invacare has its own sales company. In certain countries Invacare offers courses in service and maintenance of the bed. Spare parts lists and additional user manuals are available from Invacare.

### Service checkpoints

	Checkpoints	Check	Comments	Time duration (min)	
<b>Joints</b>	1	Circlips, starlock washers and pipe pins.	Locked and intact.	Make sure the motor pipe pin braces are locked.	2
	2	Screws and bolts	Tightened.	Removed lock nuts have to be replaced by new ones.	5
	3	Weldings	Intact; no visible cracks.		7
<b>Castors</b>	4	Castor fittings and brake pedals.	Screws tightened.	Pay extra attention to the brake pedals.	1
	5	Castor brakes	Brakes locking properly.	Try by pushing the beds with brakes locked	2
<b>Moving parts</b>	6	Neck rest function	Lock/release function working properly.		1
	7	Height positioning	Sections moving correctly; motor running properly.	Run up-down/in-out to outer positions	2
	8	Backrest positioning	Sections moving correctly; motor running properly.	Run up-down/in-out to outer positions	1
	9	Thigh positioning	Sections moving correctly; motor running properly.	Run up-down/in-out to outer positions	1
	10	Leg section positioning	Sections moving correctly; motor running properly.	Run up-down/in-out to outer positions	1
	11	Trendelenburg positioning	Sections moving correctly; motor running properly.	Run up-down/in-out to outer positions	1
<b>Electrical system</b>	12	Wires	Correctly wired; placed in channels; undamaged.		2
	13	Electrical parts/plugs	Enclosures undamaged.		3
	14	All motors	Suspensions intact.		3
<b>Accessories</b>	15	Accessories	Correctly assembled; correct function.		5
	16	Side rail locking and moving system. Bars and laths.	Locking properly; running smoothly. Bars and laths straight.		5
<b>Surface</b>	17	Damaged coating	No cracks/lost paint.	Repair with touch-up paint	3

 **Motors, hand control and control units** are serviced by exchanging the faulty part.

### Service intervals

	Before use	After 3 months	Year 1–8 Every 6 months	Year 1–8 Every 12 months	Year 1–8 Every 24 months	Year 9 Every 12 months	Year 10 Every 12 months
1		X			X	X	X
2		X			X	X	X
3					X	X	X
4					X	X	X
5					X	X	X

	Before use	After 3 months	Year 1–8 Every 6 months	Year 1–8 Every 12 months	Year 1–8 Every 24 months	Year 9 Every 12 months	Year 10 Every 12 months
6		X			X	X	X
7	X			X		X	X
8	X			X		X	X
9	X			X		X	X
10	X			X		X	X
11	X			X		X	X
12	X	X		X		X	X
13	X	X		X		X	X
14	X	X		X		X	X
15			X			X	X
16		X	X			X	X
17				X		X	X

## 6.4 Reset the motors with HB75



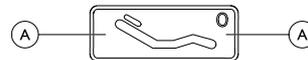
The motors need to be reset when:

- the hi/lo motor has been replaced
- the mattress support is leaning (cannot be set to horizontal)

### Before resetting

1. Disconnect the bed from the mains socket and leave it without power for at least 10 seconds.
2. Connect all cables to the control unit.
3. Connect the bed to the mains socket.

### Reset



Reset by pressing both sides (A) of the button, until a beeping sound is heard (= reset).

### After reset - test functions

After resetting; all actuators need to run to end positions: Press every button, one at a time:

1. Up until it stops
2. Down until it stops

## 7 After Use

### 7.1 Disposal

**WARNING!****Environmental Hazard**

Device contains batteries.

This product may contain substances that could be harmful to the environment if disposed of in places (landfills) that are not appropriate according to legislation.

- DO NOT dispose of batteries in normal household waste.
- Batteries **MUST** be taken to a proper disposal site. The return is required by law and free of charge.
- Do only dispose discharged batteries.
- Cover terminals of lithium batteries prior to disposal.
- For information on the battery type see battery label or chapter 9 *Technical Data*, page 22.

Be environmentally responsible and recycle this product through your recycling facility at its end of life.

Disassemble the product and its components, so the different materials can be separated and recycled individually.

The disposal and recycling of used products and packaging must comply with the laws and regulations for waste handling in each country. Contact your local waste management company for information.

### 7.2 Reconditioning

This product is suitable for reuse. To recondition the product for a new user, carry out the following actions:

- Inspection
- Cleaning and disinfection

For detailed information, see 6 *Maintenance*, page 16.

Make sure that the user manual is handed over with the product.

If any damage or malfunction is detected, do not reuse the product.

## 8 Troubleshooting

### 8.1 Troubleshooting electrical system

Symptom	Possible cause	Remedy
Mains indicator does not light up	Mains are not connected	Connect mains
	Fuse in the control unit is blown	* Replace the control unit
	Control unit is defective	* Replace the control unit
Mains indicator lights up, but the motor is not running. The relay in the control unit makes a clicking noise.	Motor plug is not fully inserted into the control unit.	Insert the motor plug properly into the control unit
	The motor is defective.	* Replace the motor
	Motor cable is damaged.	* Replace the cable
	Control unit is defective	* Replace the control unit
Mains indicator lights up, but the motor is not running. No relay sound is heard from the control unit.	Control unit is defective	* Replace the control unit
	Hand control is defective	* Replace the hand control
Control unit is in order except for one direction on one channel.	Control unit is defective	* Replace the control unit
	Hand control is defective	* Replace the hand control
Motor is running, but the piston rod does not move.	Motor is damaged	* Replace the motor
The motor cannot lift full load.		
Motor noise, but no movement of piston rod.		
Piston rod operates inwards and not outwards.		
<p>* Service and maintenance of the bed must only be performed by personnel who have received the necessary instruction or training.</p> <p><b>Risk of personal injury and damage to the product.</b>                      – The bed must be unplugged from the main power source before opening or repairing electrical parts.</p>		
<p> <b>WARNING!</b>  <b>Risk of personal injury and damage to the product.</b>                      – The bed must be unplugged from the main power source before opening or repairing electrical parts.</p>		

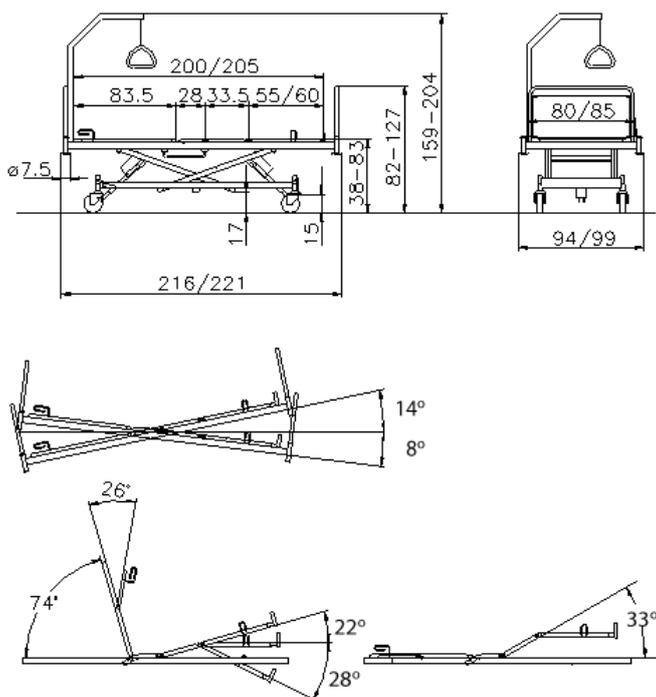
## 9 Technical Data

### 9.1 Dimensions bed

- All measurements are stated in cm.
- All angles are stated in degrees.
- All measurements and angles are stated without tolerances, on a non-extended bed.

The bed can be extended 15 or 20 cm in the foot end.

Invacare reserves the right to change the stated measurements and angles without warning.



### 9.2 Weights

	Max. patient weight (provided that the weight of the mattress and the accessories do not exceed 50 kg)	250 kg
	Max. safe working load (patient + accessories)	300 kg

Bed end	5,0 kg
Lifting pole	9,0 kg
Bed total weight	141,5 kg

### 9.3 Dimensions mattresses

	Max, height Mattress	Min, height Mattress	Min, width Mattress	Min, length Mattress
SB910 - 80 x 200 cm	18 cm	12 cm	80 cm	200 cm
SB910 - 85 x 205 cm	18 cm	12 cm	85 cm	205 cm

Min. density: Cold foam 38 kg/m<sup>3</sup>

### 9.4 Environmental conditions

	Storage and transportation	Operation
Temperature	-10°C to +50°C	+5°C to +40°C
Relative humidity	20% to 75%	
Atmospheric pressure	800 hPa to 1060 hPa	

- Be aware that when a bed has been stored under low temperatures, it must be adjusted to operating conditions before use.

### 9.5 Electrical system

Voltage supply	Uin 230 VAC, 50 Hz (AC = Alternating current)
Maximum current input	Iin max. 3 Ampere
Intermittent (periodic motor operation)	10%, max. 2 min ON / 18 min OFF
Insulation class	CLASS I equipment
Type B Applied Part	Applied Part complying with the specified requirements for protection against electrical shock according to IEC60601-1. (An applied parts is a part of the medical equipment which is designed to come into physical contact with the user or parts that are likely to be brought into contact with the user.)
Sound level	48 dB (A)
Degree of protection	The control unit, hand controls, external power supply and motors are protected according to IPX6W.  <b>IPX6W</b> - The system is protected against high pressurized water and steam projected from any direction.
Battery type	Lead-acid
Battery specification	24 V / 1.2 Ah

- The bed has no isolator (main switch). If the bed needs to be electrically disconnected, it has to be unplugged from the mains socket.

## 10 Electromagnetic compatibility (EMC)

### 10.1 General EMC information

Medical Electrical Equipment needs to be installed and used according to the EMC information in this manual.

This product has been tested and found to comply with EMC limits specified by IEC/EN 60601-1-2 for Class B equipment.

Portable and mobile RF communications equipment can affect the operation of this product.

Other devices may experience interference from even the low levels of electromagnetic emissions permitted by the above standard. To determine if the emission from this product is causing the interference, run and stop running this product. If the interference with the other device operation stops, then this product is causing the interference. In such rare cases, interference may be reduced or corrected by the following:

- Reposition, relocate, or increase the separation between the devices.

### 10.2 Electromagnetic emission

#### Guidance and manufacturer's declaration

This product is intended for use in the electromagnetic environment specified below. The customer or the user of this product should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group I	This product 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.
RF emissions CISPR 11	Class B	This product 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.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations /flicker emissions IEC 61000-3-3	Complies	

### 10.3 Electromagnetic Immunity

#### Guidance and manufacturer's declaration

This product is intended for use in the electromagnetic environment specified below. The customer or the user of this product should assure that it is used in such an environment.

Immunity test	Test / Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 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 %.
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines; 100 kHz repetition frequency ± 1 kV for input / output lines; 100 kHz repetition frequency	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line to line ± 2 kV line to earth	Mains power quality should be that of a typical commercial or hospital environment.

Immunity test	Test / Compliance level	Electromagnetic environment – guidance
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 0% $U_T$ for 0,5 cycle at 45° steps 0% $U_T$ for 1 cycles 70% $U_T$ for 25 / 30 cycles < 5% $U_T$ for 250 / 300 cycles	Mains power quality should be that of a typical commercial or hospital environment. If the user of this product requires continued operation during power mains interruptions, it is recommended that the product is powered from an un-interruptible power supply or a battery.  $U_T$ is the a. c. mains voltage prior to application of the test level.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Conducted RF IEC 61000-4-6	3 V 150 kHz to 80 Mhz  6 V in ISM & amateur radio bands	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 this product is used exceeds the applicable RF compliance level above, this product should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating this product.  Interference may occur in the vicinity of equipment marked with the following symbol: 
Radiated RF IEC 61000-4-3	10 V/m 80 Mhz to 2,7 GHz  385 MHz - 5785 MHz test specifications for immunity to RF wireless communication equipment refer to table 9 of IEC 60601-1-2:2014	Portable and mobile RF communications equipment should be used no closer than 30 cm to any part of this product including cables.

 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

## 10.4 Test specifications for immunity to RF wireless communications equipment

IEC 60601-1-2:2014 — Table 9

Test Frequency (MHz)	Band <sup>a)</sup> (MHz)	Service <sup>a)</sup>	Modulation <sup>b)</sup>	Maximum power (W)	Distance (m)	Immunity test level (V/m)
385	380 - 390	TETRA 400	Pulse modulation <sup>b)</sup> 18 Hz	1.8	0.3	27
450	430 - 470	GMRS 460, FRS 460	FM <sup>c)</sup> ± 5 kHz deviation 1 kHz sine	2	0.3	28
710 745 788	704 - 787	LTE Band 13, 17	Pulse modulation <sup>b)</sup> 217 Hz	0.2	0.3	9
810 870 930	800 - 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation <sup>b)</sup> 18 Hz	2	0.3	28

Test Frequency (MHz)	Band <sup>a)</sup> (MHz)	Service <sup>a)</sup>	Modulation <sup>b)</sup>	Maximum power (W)	Distance (m)	Immunity test level (V/m)
1720 1845 1970	1700 - 1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation <sup>b)</sup> 217 Hz	2	0.3	28
2450	2400 - 2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation <sup>b)</sup> 217 Hz	2	0.3	28
5240 5500 5785	5100 - 5800	WLAN 802.11 a/n	Pulse modulation <sup>b)</sup> 217 Hz	0.2	0.3	9

 If necessary to achieve the immunity test level, the distance between the transmitting antenna and the Medical Electrical Equipment or System may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.

<sup>a)</sup> For some services, only the uplink frequencies are included.

<sup>b)</sup> The carrier shall be modulated using a 50 % duty cycle square wave signal.

<sup>c)</sup> As an alternative to FM modulation, 50 % pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.





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