

Invacare® Scanbeta NG™



en **Children's Bed**
User Manual



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



Yes, you can.®

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This bed has been tested and approved according to Nordic Requirements, adjustable beds for children.

This bed has undergone a risk analysis according to EN ISO 14971.

Invacare is certified according to ISO 9001 and ISO 13485.

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I General

I.1 About this manual

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

All indications of right and left are based on a user lying on his back in the bed.

Please note that there may be sections in this user manual, which are not relevant to your product, since this manual applies to all existing modules (on the date of printing).

If a problem should arise in connection with the delivered product, please contact your *Invacare*® supplier. An address list is shown on the back side at this manual.

Symbols in this manual

In this user manual, warnings are indicated by symbols. The warning symbols are accompanied by a heading that indicates the severity of the danger.



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.



This product complies with Directive 93/42/EEC concerning medical devices. The launch date of this product is stated in the CE declaration of conformity.

I.2 Intended Use

The bed has been developed for domestic care and long term care:

- *Application environment 3*; Long-term care in a medical area where medical supervision is required and monitoring is provided if necessary and medical electrical equipment used in medical procedures may be provided to help maintain or improve the condition of the patient.
- *Application environment 4*; Care provided in a domestic area where medical electrical equipment is used to alleviate or compensate for an injury, disability or disease.

- The bed is intended for disabled children with limited mobility, from 3–12 years of age and size of 92–155 cm size.
- The bed is not intended for transportation of users. It is mobile within a room with a patient in it. Castors are lockable.
- The bed is not intended for psychiatric patients.
- Maximum user weight and safe working load are listed on the product label and in the technical data section in this manual.



WARNING!

– Any other or incorrect use could lead to hazardous situations.

I.3 Service life

The expected service life of this product is eight 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.

I.4 Warranty

The warranty covers all material and production defects for two years from the date of delivery, provided it can be demonstrated that such defects were present before delivery. All manufacturing faults or defects must be promptly reported.

Invacare® may repair the fault or replace the component. The warranty provided by *Invacare*® does not cover additional costs (transport, packaging, labour, sundry expenses, etc. are for the customer's account).

The warranty does not cover:

- Damage caused during transport that is not directly reported to the forwarder at the moment of delivery.
- Repairs performed by unauthorized centers and personnel.
- Parts subject to normal wear.
- Malicious damages or damaged caused by improper use of the bed.

I.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
- Unauthorized modifications and/or use of unsuitable spare parts

A written authorization of *Invacare* must be obtained before installing additional adaptations on this *Invacare* product. Otherwise no liability claims can be made.

2 Safety

2.1 General safety information



WARNING!

Risk of entrapment / suffocation / strangulation

There's a risk of entrapment between mattress support, side rail, bed end and/or moving parts (e.g. shear arms).
 – The bed must not be used by persons under 3 years of age, or with a body size smaller than an average 3 year old (over 92 cm length).



WARNING!

Risk of patients slipping through the openings

The bed fulfils all requirements regarding maximum distances. However, it is possible that patients 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 patients with small body dimensions.



WARNING!

Risk due to electromagnetic interference

Electromagnetic interference between the bed and other electrical products can occur.
 – To reduce or eliminate such electromagnetic interference, increase the distance between the bed and the products or switch them off.

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

- The bed should be equipped with means for potential equalization connection marked out by a symbol shown in the back of this manual.
- 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.



WARNING!

Risk of injury or damage to property

- Do not roll the castors over the main power cord.
- Do not bring main power cord into moving parts.
- Disconnect the plug from the mains before moving the bed.
- Make sure that no wires (mains or from other equipment) are jammed or damaged, when the bed is used.
- Keep bed components and accessories at least 30 cm away from a heated surface and not in direct sunlight.



CAUTION!

Risk of injury

There is a risk of entrapment of fingers in the bed moving parts.
 – Pay attention to your fingers.



CAUTION!

- For a user 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 the patient 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.

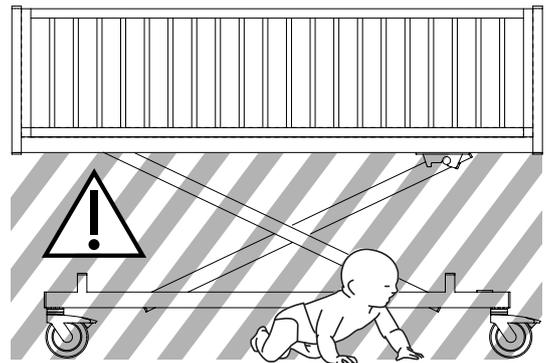
Safety in regards of children



WARNING!

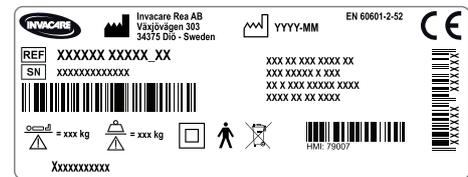
Risk of entrapment

When lifting or lowering the bed, there's a risk of entrapment between mattress support, shear arms and base frame.
 – Never leave children unattended playing around the bed.
 – Do not allow children to linger under the bed.
 – When lifting or lowering the bed, always make sure that there is no children near the bed moving parts.
 – The hand control must not be used by children. When the hand control is not used keep it out of reach for children.



2.2 Labels and symbols on the product

2.2.1 Product label



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

Symbols

	Serial Number
	Reference Number
	Manufacturer Address
	Manufacturing Date

	Max. User Weight
	Max. Safe Working Load
	CLASS II equipment
	Type B Applied Part
	WEEE conform
	This product complies with Directive 93/42/EEC concerning medical devices.

Abbreviations for technical data:

- I_{in} = Incoming Current
- U_{in} = Incoming Voltage
- Int. = Intermittence
- AC = Alternating Current
- Max = maximum
- min = minutes

For more information about technical data, refer to 9 Technical data, page 20.

2.2.2 Other labels and symbols

	Refer to User Manual
---	----------------------

3 Setup

3.1 Receiving the bed

When you receive the bed, check the packaging. If the bed shows any signs of damage upon delivery, please read Section Warranty.



WARNING!

Risk of personal damage

There is a risk of entrapment or squeezing, while assembling or disassembling of the bed.

- The assembly of the bed and mounting of accessories must be done by authorized or trained personnel.
- Follow instructions carefully.



IMPORTANT!

- To avoid condensation the bed should not be used until it has reached a temperature of 10-40° C.



IMPORTANT!

- After each assembly, check that all fittings are properly tightened and that all parts have the correct function.



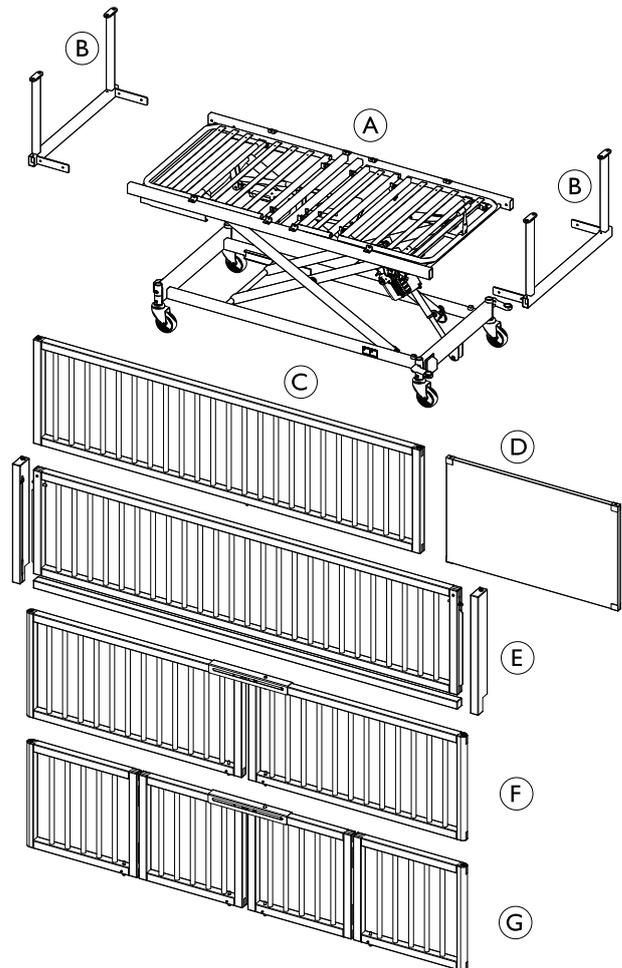
WARNING!

- The standard electrical equipment must not be combined with electrical equipment that is not designed for this bed.

3.2 Main parts of bed



- The bed can be equipped with different side rails on right and left sides.
- The bed must always have both bed ends mounted.



Bed parts:

- | | |
|-----------------------|-----------------------|
| Ⓐ Mattress support | Ⓔ Lowering side rail |
| Ⓑ Bed end attachments | Ⓕ Opening side panels |
| Ⓒ Fixed side rail | Ⓖ Folding side panels |
| Ⓓ Bed end plates | |



There are also side panels with:

- Wooden trims
- Acrylic glass

3.3 Assemble / Disassemble the bed



CAUTION!

Risk of pinching

- Make sure no fingers are pinched during assembly / disassembly of the bed.



IMPORTANT!

After assembly

Tighten all screws and check that all parts are properly aligned with each other and that the bed is stable.

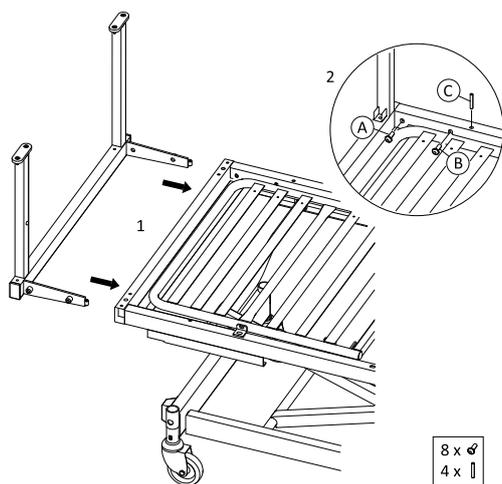
- The bed end attachments must be adjusted for correct fit when mounting the selected side rails.

3.3.1 Mounting the bed ends



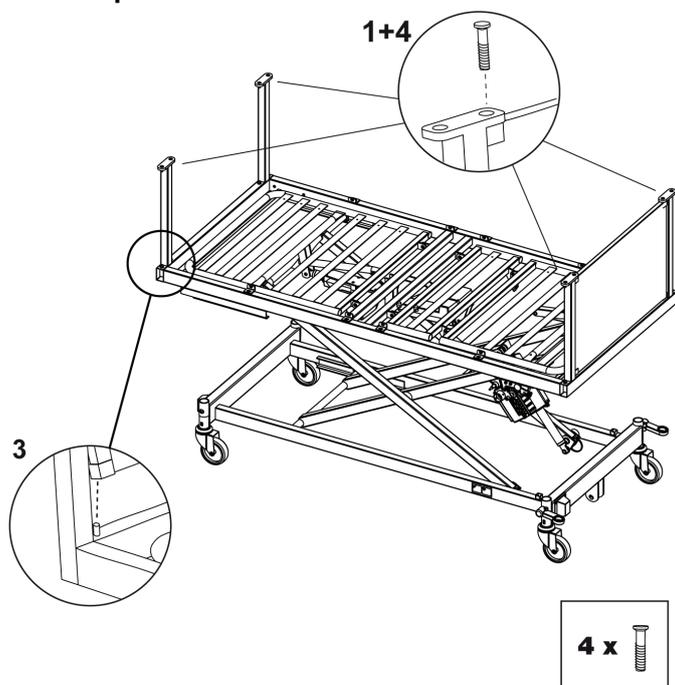
The Allen key to use for assembling the bed ends is attached on the inside of the base frame (head end).

Bed end attachments

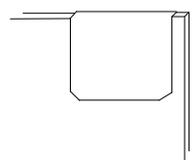


1. Insert the bed end attachments in the insert pipes on the mattress support.
2. Insert the screws **A** and **B** in each corner. Lean the bed end attachment towards the bed and tighten screw **A**. Do not tighten screw **B** until the side rails are fitted and adjusted correctly. Keep screws **C** for the side rail mounting.

Bed end plates



1. Insert the inner screws on top of each bed end attachment.
- 2.



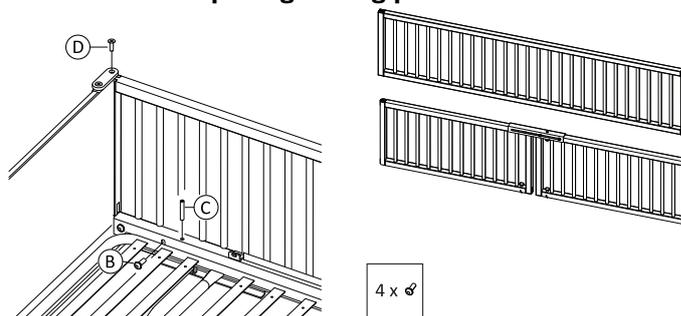
Fit the U-fittings in the corners of the bed end plate and make sure they are fitted over the holes.

3. Place the holes of the bed end plate over the guide pins on the mattress support. Fold the plate in, while gently pushing it down.
4. Attach the bed end plate with the screws on top of the bed end attachments.

3.3.2 Mounting the side rails

- i** After mounting the side rails: Make sure that the bed end attachments are straight and tighten the screws on the bed end properly.

Fixed side and opening/folding panel



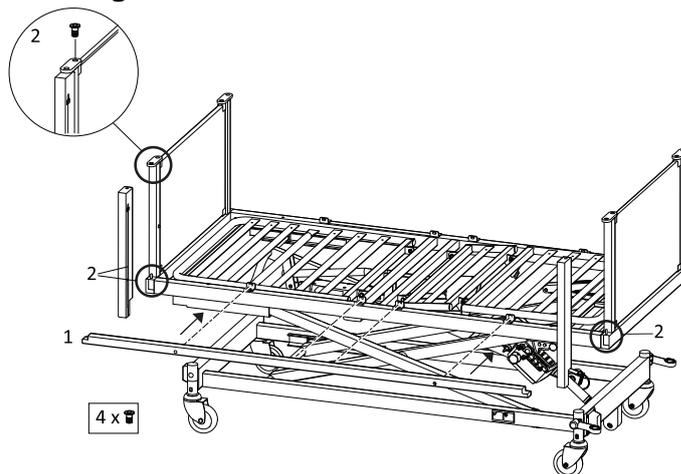
1. Fit the guide pins on the mattress support into the brass bushings on the side rail.
2. Fold the side rail in, while gently pushing it down.
3. Attach the side rail with the screws on top of the bed end attachments.

Functional check:

After mounting of opening/folding side rails: Check if the side rails are straight and open and close without jamming.

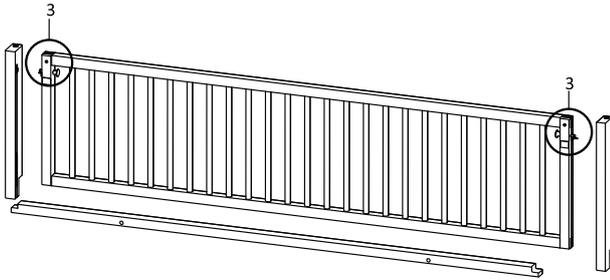
1. Side rails open and close without jamming:
 - a. Tighten screw **C** until it touches the bottom of the side tube in each corner.
 - b. Tighten screw **B** in each corner.
2. Side rails do not open and close without jamming:
 - a. To align the bed end attachment, tighten screw **C** slightly.
 - b. Check again, if the side rails open and close without jamming. Repeat step a if required.
 - c. Tighten screw **B** in each corner.

Lowering side



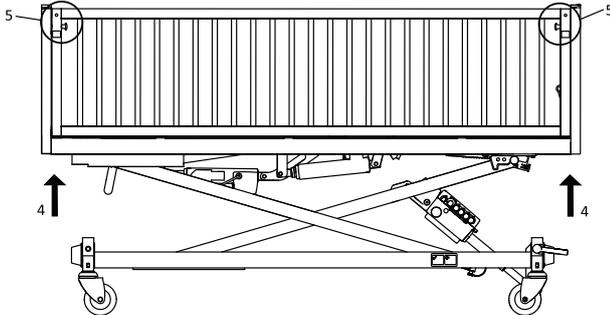
1. Attach the wooden bar, with the screws, on the frame of the mattress support.
2. Put the corner trims on the guide pins in the corners and attach them by tightening the screws on top of the bed end attachments. Make sure that the traces on the trims are pointing inwards.

3.



Press in the locking pins on the sides, at the same time or one side at a time.

4.



Insert the guideways into the traces of the corner trims. Release the locking pin(s) when they are above the mattress support. If you are doing one side at a time, make sure both sides are in place before moving on to the next step.

5. Pull out the black cotter pins and pull the gate first past the lower and then past the upper locking position.
6. Release the cotter pins when the gate is all the way up.

! IMPORTANT!

- After mounting of the lowering side
 - Check that the side rail locks properly in both positions.
 - Check that the locking pins are completely out, otherwise the gate can fall out.

Dismounting bed side rails

Follow instructions for mounting, but in reversed order.

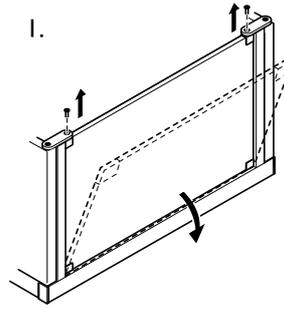


Before dismounting the side rail

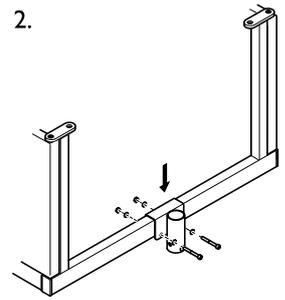
- Raise the bed to create enough space between the mattress support and the floor, to make space for the side rail to pass underneath.

3.3.3 Mounting the lifting pole

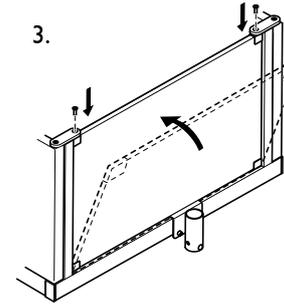
1.



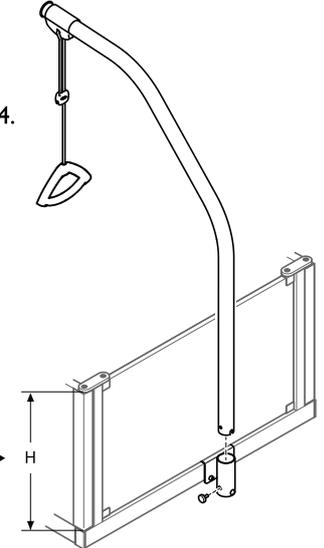
2.



3.



4.



1. Dismount the bed end plate. See instruction for mounting of bed end plate; section 3.3.1 Mounting the bed ends, page 7 and follow in reversed order.
2. Attach the bracket of the lifting pole on the mattress support frame and tighten the screws.
3. Mount the bed end plate again.
4. Fit the lifting pole post into the bracket and tighten the screw to fix the pole.

4 Operating the bed

4.1 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.

4.2 Operating side rails



WARNING!

Risk of entrapment or suffocation

There's a risk of entrapment or suffocation between mattress support, side rail and bed end.

- Always ensure correct fitting of the side rails.

4.2.1 Operating the lowering side rail

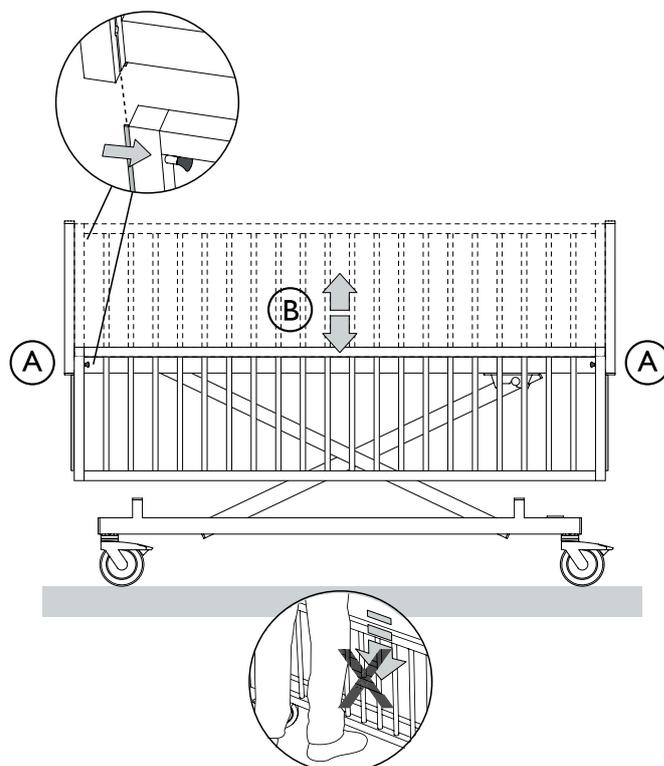


CAUTION!

Risk of personal injury

If the lowering side falls down it can cause minor injuries to e.g. feet.

- Always hold the side in a firm grip while raising/lowering.
- Check that the black cotter pins are completely out and locking after every height adjustment to the side rail.



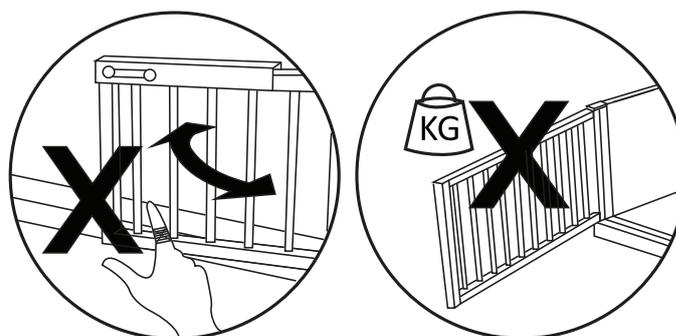
Up/Down

1. Pull out the black cotter pins **A** on both sides.
2. Pull/push the side rail **B** up or down with both hands and release the cotter pins **A**.
3. When the side rail is in the upper or lower position the cotter pins will lock automatically in the wooden trims.



When lowering the side rail from upper position; start by lifting it slightly before the black cotter pins are pulled out.

4.2.2 Operating the opening/foldable side rail



WARNING!

Risk of tipping

The bed can tip when the side rail doors are open.

- Do not put any weight on the doors.
- Never exceed the maximum angle of 90°, when opening the doors.



CAUTION!

Risk of pinching

- Be careful not to pinch fingers when opening and closing the doors.

4.2.3 Operating child safety latch



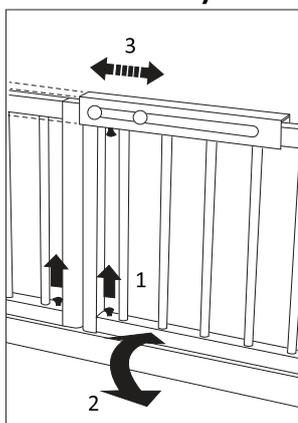
WARNING!

Risk of falling out of bed

– Always check that the child safety latch is properly engaged after closing the door.

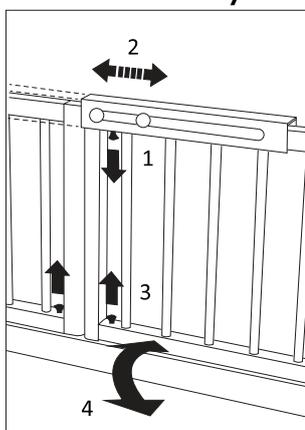
- Opening and folding side rails are equipped with child safety locks.
- Depending on the height of the side rail the beds have a different number of locking pins.

Lock child safety latch



1. Pull up the black cotter pins, on the bottom lath of the side rail (one on each door).
2. Close the doors and make sure the cotter pins click into the holes on the lath.
3. Push the rail on the safety lock to one side until it locks with a click.

Unlock child safety latch



1. Pull down the black cotter pin, underneath the upper lath of the side rail.
2. Push the rail on the safety lock to one side.
3. Pull up the black cotter pins on the bottom lath of the side rail (one on each door).
4. Open the doors.

4.3 Hand control HL81 / HL82 / HL84

The hand control can be equipped with either one, two or four buttons.

Sitting position

(HL84)



1. Up: press left side of the button (▲).
2. Down: press right side of the button (▼).

Backrest section

(HL82 / HL84)



1. Up: press left side of the button (▲).
2. Down: press right side of the button (▼).

Thigh section

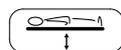
(HL84)



1. Up: press left side of the button (▲).
2. Down: press right side of the button (▼).

Height adjustment

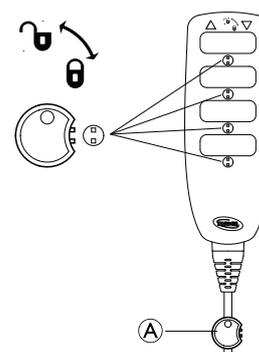
(HL81 / HL82 / HL84)



1. Up: press left side of the button (▲).
2. Down: press right side of the button (▼).

4.3.1 Locking function

The locking function prevents usage of certain function buttons. Regardless of how many buttons your hand control has, they can all be locked individually.



1. Insert key (A) in the key hole, below the wanted function.
2. To lock, turn the key clockwise.
3. To unlock, turn the key anti clockwise.

4.4 Operating the castor brakes



CAUTION!

Risk of trapping

– Do not release the brake with the fingers



CAUTION!

Risk of falling

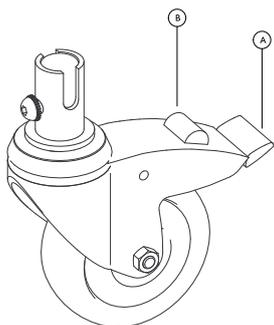
User can fall, while entering or exiting the bed, if brakes are not activated.

– Always apply the brakes when user is moving in or out of bed or when attending to the patient.



Set-off from the castors might under special conditions appear at different types of absorbing floor covering including untreated or badly treated floors. In matters of doubt, it's recommended to place a suitable kind of protection between the castors and the floor.

4.4.1 Operating castors without central braking system



Locking the brake

Step on the outer pedal (A) .

Releasing the brake

Step on the inner release button (B) .

4.4.2 Operating central braking system



Lock the brake

Step on the pedal and press it down to its lowest point.



Release the brake

Place the foot underneath the brake pedal and push the pedal up to its highest point.

4.5 Operating the lifting pole



WARNING! Risk of injury

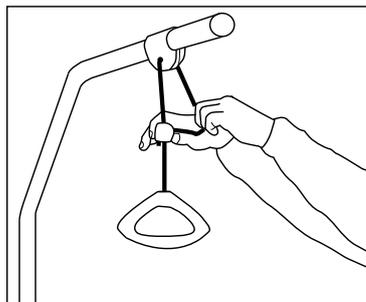
The bed can tip if the handle is used, while the lifting pole is turned away from the bed.

- 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; 70 kg.

Change height of the lifting pole handle

Lower the handle

1.

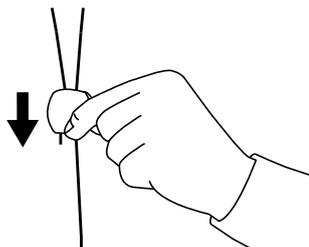


Pull the cord out to the side, to release it from the locking mechanism.

2. Keep the cord out to the side and slide the plastic cord lock upwards.

Raising the handle

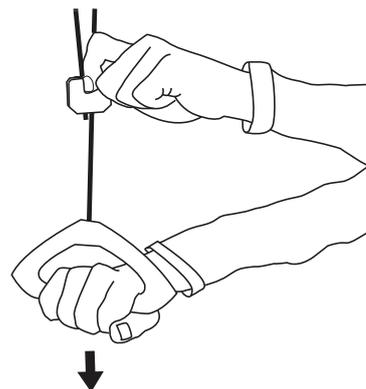
1.



Slide the cord lock downwards.

Lock the handle

1.



Lock the cord lock by pulling the handle downwards.



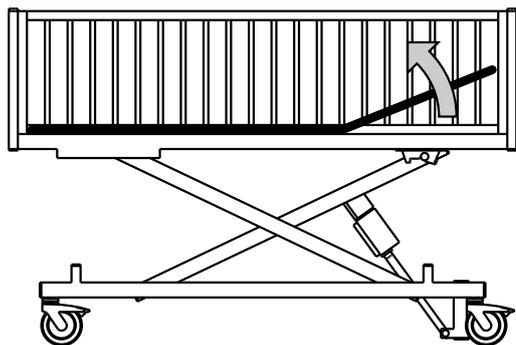
IMPORTANT!

After adjustment of the lifting pole handle

- Pull the handle to make sure the cord lock has been engaged.
- The two cords above the cord lock, must be parallel, to lock properly.

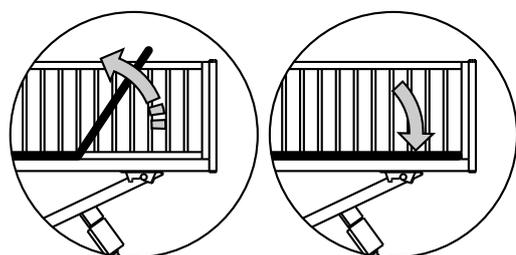
4.6 Manual positioning of the leg section

Up – from horizontal position



1. Lift the leg section up to desired height.
2. Lower it until it stays in a fixed position.

Down – from upper position



1. Lift the leg section up to its highest position and unhook it with a little jerk.
2. Sink the leg section all the way down.

4.7 Emergency release of the backrest or thigh/leg section

An emergency release of the backrest or thigh/leg section could be necessary in the case of power- or motor failure.



CAUTION!

Risk of injury

- A minimum of two persons are required to release a mattress section.
- An emergency release of the height adjustment is NOT possible.
- Remove the plug from the mains socket before emergency release of the mattress support.

1. Both persons hold the mattress section.
- 2.



One of them pulls out the cotter pin (from the motor in question).

3. Both persons slowly lower the mattress section until it is completely down.

5 Accessories

5.1 Accessories list

- Lifting pole
- Upholstery
- Support handle
- Side panels with wooden trims
- Side panels with acrylic glass
- Stickers

! IMPORTANT!

- Use only original accessories and spare parts. Spare parts lists and extra user manuals can be ordered from *Invacare* sales companies (see addresses and websites on the back page of this user manual).

The tools necessary for mounting/dismounting the accessories of the bed are:

- one Allen key (use for mounting/dismounting all fittings)
- one adjustable spanner

The Allen key is kept on the base frame at the head end.

5.2 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.

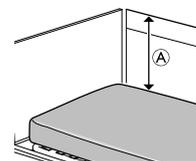
- For correct mattress measures see mattress table in chapter 9 *Technical data*, page 20.



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 20.
- 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 20.

6 Maintenance

6.1 General servicing information

- !** **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 check list.

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®.

Before Use

- Ensure that all manual and electrical parts functions correctly and are in a secure state.
- Check, by raising and lowering the bed, that the shear arms run smoothly in the guideways.

After three months

- Ensure that all manual and electrical parts are functioning, and tighten bolts, screws, nuts, etc.

Every year

- We recommend a safety test comprising the motors' performance and mechanical state.

Every second year

- We strongly recommend a service according to the below checklist after two years of normal use and then every second year.

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

6.1.1 Checklist - Maintenance

Checkpoints

- Circlips, cotter pins and plastic fixing ring - properly locked and intact.
- Screws - tightened.
- Weldings - intact.
- Check the guideways - no bending.
- Side rail locking and moving system - properly locking and running smoothly.
- Castor fittings - tightened.
- Castor brakes - locking properly.

6.4 Inspection after relocation - Prepare for new user

- !** **IMPORTANT!**
- When the bed has been relocated; before given to a new user it has to be thoroughly inspected.
 - Inspection must be done by a trained professional.

Check points				
Check that the latches, locking the mattress support on the shear arms, are properly engaged (red button on the mattress support).				
Check the locking between the shear arms and the bed base (pipe pin correctly mounted).				
Check the locking of the motors (pipe pins correctly mounted).				

- Height adjustment motor - running properly.
- Backrest motor - running properly.
- Thigh section motor - running properly.
- Leg section motor - running properly.
- Wires - correctly wired and undamaged.
- Electric plugs - undamaged.
- Cable insulation and actuator housings – no cracks or damages.
- Damaged coating - repaired.
- Accessories - correctly assembled and correct function.

6.2 Cleaning

- !** **Important**
- The bed does not tolerate cleaning in automatic washing plants or the use of water-jet based cleaning equipment.
 - Make sure that the power plug is removed from the main socket before cleaning.
 - Make sure that all plugs on the bed are in place, during washing.

- !** **Important details for cleaning IPX4 hand controls**
- Water may be pressurised, but never use high-pressure cleaning or steam cleaning directly on the electrical parts.

- The bed should be washed down using a wet sponge, cloth or brush.
- Use ordinary household cleaning agents. Never use acids, alkalines or solvents such as acetone or cellulose thinner.
- The backrest and the leg/thigh sections can be lifted from the mattress support, which facilitates cleaning and access to the control unit.
- The hand control, motors and control unit may be washed with brush and water.
- Dry the bed after cleaning.

6.3 Lubrication

We recommend lubricating the bed according to the following table:

Part of bed	Lubrication method
Bearings for lifting- and shear arms	Oil (medically clean)
Motor suspension	Oil (medically clean)
Gliders and guideways	Grease
Axles and rolls for shear arm (axle must be dismounted)	Grease

 For ordering of correct oil and grease, please contact your Invacare dealer.

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 that the bed end attachments are properly mounted (steady) and that the bed ends are securely attached.				
Check the locking function(s) of the side rails.				

6.5 Dismounting the motor

- ! IMPORTANT!**
- If the bed is standing up on its castors, a minimum of three persons are needed to dismount the motor for height adjustment. Two need to hold up the mattress support while one is dismounting the motor.
 - As an option, the bed can be put on the side. The motor can then be dismounted by only one person.

- ! IMPORTANT!**
- Before dismounting the motor.
- Disconnect the bed from the mains socket.
 - Disconnect all motor cables from the electronics.

- i**
- The lock cam over the connectors, on the electronics box, must be removed before contacts can be released.
 - Certain models also have bolts on the motors, which need to be loosened.

1. Press the snap locks (one in each end of the lock cam) with a screwdriver and remove the cam.
2. Pull out the motor plug from the electronics.

Dismount the motor



1. Lift the brace up, and fold it away from the cotter pin.
2. Pull out the cotter pin.
3. Repeat the step in the other end of the motor.
4. Remove the motor.

- ! IMPORTANT!**
- Keep a firm grip and be careful not to drop the motor.

Mount the motor

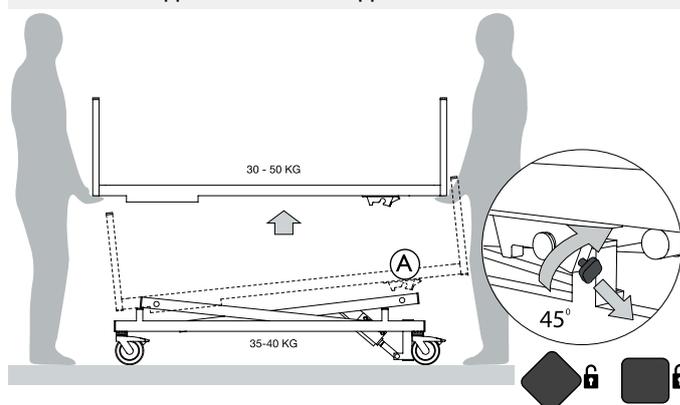
1. Place the motor in its insertion place and push the cotter pin through all holes.
2. Lift the brace up and fold it over the cotter pin to lock. See illustration in section “Dismount the motor”.

i **After mounting the motor**

1. Put the motor plugs back in the electronics. Each socket is marked with a function. Make sure every function is connected to the right motor. If you are not certain which function the motor has, the article No gives more information.
2. Mount the lock cam and make sure it is secured with the snap locks.
3. Check that all motors and the hand control have correct functionality.

6.6 Dismounting the mattress support

- ! IMPORTANT!**
- Before dismounting/mounting
- Make sure the brakes are activated.
 - At least two persons are needed to dismount/mount the mattress support. Both ends of the mattress support have to be supported.



Dismounting the mattress support

1. Disconnect the cables between the electronics and the motors to the shear arms.
2. Release the latches by pulling out the red buttons **A** and turning them 45° clockwise.
3. In the foot end; lift the mattress support, releasing it from the buckles.
4. In the head end: pull out the shear arms gliding blocks from the guideways on the mattress support.
5. Lift off the mattress support from the shear arms.

Mounting the mattress support

1. Lift the mattress support in over the shear arms.
2. Lift the mattress slightly in the foot end and gently slide the shear arms gliding blocks into the guideways on the mattress support (head end).
3. Gently lower the foot end, fitting the buckles on the mattress support on the ends of the shear arms crossbar and press until you hear a clicking sound.
4. Plug in the cables from the motors to the electronics.

! **IMPORTANT!**

After mounting

- Check that red buttons in the buckles are in a locking position. If not; the red button must be turned 45° counter clockwise until it locks.

6.7 Dismounting the shear arms from the base

**WARNING!**

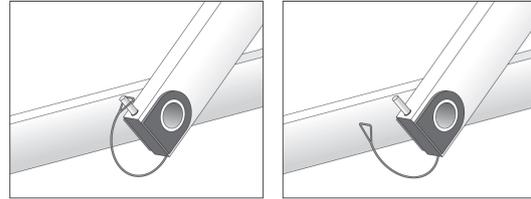
If the clamp part of the pipe pin is deformed it might not lock properly.

- Never pull the clamp part of the pipe pin.

**WARNING!**

If the pipe pin is not correctly mounted it might open.

- Always mount the pipe pin with the pin upwards to make sure it does not loosen when e.g. cleaning under the bed.



1. Lift the loop off the end of the pipe pin and release the clamp.
2. Pull the pin out, through both holes in the shear arm.

Mount the shear arms

1. Follow the instruction above (1–2) in reversed order.

**IMPORTANT!**

After mounting of shear arms; before using the lifting mechanism of the bed:

- Ensure that all four plastic bushings are intact and correctly positioned, between shear arm and frame.
- Ensure that the pipe pin is pushed completely through both holes and that the clamp is properly attached over the pin.

7 After Use

7.1 Waste disposal



Waste disposal/recycle must comply with the laws and regulations for waste handling in each country.

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

We comply with the current environment legislation (e.g. WEEE and RoHS directive).

We only use REACH compliant materials and components.

- All wooden parts must be dismantled and sent for incineration.
- All electric parts must be dismantled and be disposed of as electric components.
- Plastic parts must be sent for incineration or recycling.
- Steel parts and castors must be disposed of as waste metals.



IMPORTANT!

Accumulator back-up

- Old accumulators must be returned to *Invacare®* or recycled as car batteries

8 Troubleshooting

8.1 Troubleshooting electrical system

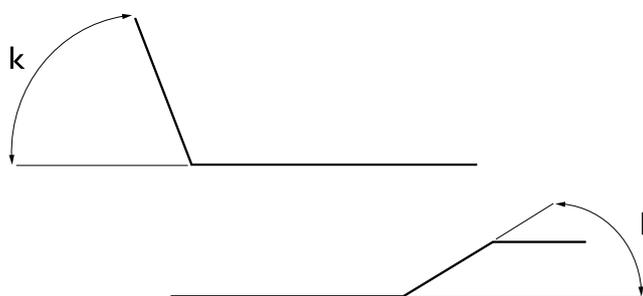
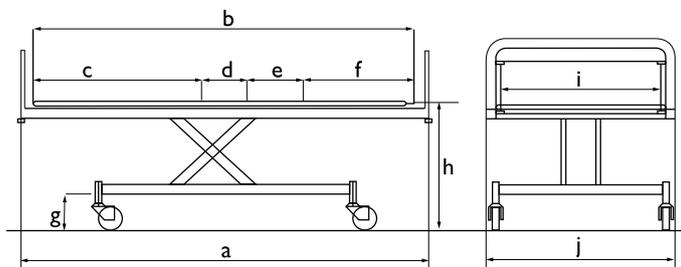
Symptom	Possible cause	Remedy
Mains indicator does not light up	Mains are not connected	Connect mains
	Fuse in the control unit is blown	* Replace the control unit
	Control unit is defective	* Replace the control unit
Mains indicator lights up, but the motor is not running. The relay in the control unit 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>Risk of personal injury and damage to the product. – The bed must be unplugged from the main power source before opening or repairing electrical parts.</p>		
<p> WARNING! Risk of personal injury and damage to the product. – 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.

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



	Scanbeta NG™		
	60 cm	70 cm	80 cm
a	148	168	188
b	136,4	156,4	176,4
c	62,15	67,15	75,15
d	7	15	19
e	21,2	22,2	27,15
f	46,05	52,05	55,1
g	15	15	15
h	30 – 90		
i	62	72	82
j	68	78	88
k	73°	73°	73°
l	36°	31°	27°

9.2 Weights

Bed size	60 x 140	70 x 160	80 x 180
Mattress support	21 kg	31 kg	38 kg
Base with shear	36 kg	47 kg	47 kg

Wooden bed end	11 kg	13,5 kg	14,5 kg
Total weight bed	68 kg	91,5 kg	99,5 kg

9.3 Dimensions mattresses

Bed size (cm)	Fixed, Opening or Folding side rails	Lowering side rail on both side of bed	Lowering side rail on one side of bed and Fixed, Opening or Folding side rail on the other.
140x60	54x137x8	60x140x8	57x137x8
160x70	64x157x8	70x160x8	67x157x8
180x80	74x177x8	80x180x8	77x177x8

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 data

Voltage supply	Uin 230 Voltage, AC, 50/60 Hz (AC = Alternating current)
Maximum current input	lin max.1,5 Ampere
Intermittent (periodic motor operation)	10 % 2 min / 18 min
Insulation class	CLASS II equipment
Type B Applied Part	Applied Part complying with the specified requirements for protection against electrical shock according to IEC60601-1.
Sound level	55 dB (A)
Degree of protection	The control unit and motors are protected according to IPx6; the external power supply and the hand control are protected according to IPx4. The lowest IP-classification decides the overall classification of the bed. IPx4 - The system is protected against water splashed from any direction. IPx6 - The system is protected against water projected from any direction (not high pressure).

 The bed has no isolator (main switch). Disconnect the bed by unplugging it from the mains socket.

9.6 Electromagnetic compliance (EMC)

Guidance and manufacturer’s declaration – electromagnetic emission

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

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11(partly)	Group I	The medical bed uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11(partly)	Class B	The medical bed is suitable for use in all establishments including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer’s declaration – electromagnetic immunity

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

Immunity test	IEC 60601-1-2 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	± 1 kV differential mode ± 2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5% U _T (>95% dip in U _T) for 0,5 cycle 40% U _T (60% dip in U _T) for 5 cycles 70% U _T (30% dip in U _T) for 25 cycles < 5% U _T (>95% dip in U _T) for 5 sec	< 5% U _T (>95% dip in U _T) for 0,5 cycle 40% U _T (60% dip in U _T) for 5 cycles 70% U _T (30% dip in U _T) for 25 cycles < 5% U _T (>95% dip in U _T) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the medical bed requires continued operation during power mains interruptions, it is recommended that the medical bed be 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	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Conducted RF IEC 61000-4-6	3 V	3 V	Portable and mobile RF communications equipment should be used no closer to any part of the medical bed including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance: $d = \left[\frac{3,5}{V_1} \right] \sqrt{P}$

Immunity test	IEC 60601-1-2 test level	Compliance level	Electromagnetic environment - guidance
Radiated RF IEC 61000-4-3	3 V/m	3 V/m	$d = \left[\frac{3,5}{E_1} \right] \sqrt{P}$ $d = \left[\frac{7}{E_1} \right] \sqrt{P}$ <p>80 MHz to 800 MHz</p> <p>800 MHz to 2,5 GHz</p> <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).^b</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,^a should be less than the compliance level in each frequency range.^b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 

^a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the medical bed is used exceeds the applicable RF compliance level above, the medical bed should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the medical bed.

^b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than [V1] V/m.

At 80 MHz and 800 MHz, the higher frequency range applies.

Recommended separation distances between portable and mobile RF communications equipment and the medical bed

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

Rated maximum output of transmitter [W]	Separation distance according to frequency of transmitter [m]		
	150 kHz to 80 MHz $d = \left[\frac{3,5}{V_1} \right] \sqrt{P}$	80 MHz to 800 MHz $d = \left[\frac{3,5}{E_1} \right] \sqrt{P}$	800 MHz to 2,5 GHz $d = \left[\frac{7}{E_1} \right] \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.69	3.69	7.38
100	11.67	11.67	23.33

For transmitters rated at a maximum output power not listed above the recommended separation, distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

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

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