

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.

Contents

I	General	4
1.1	About this manual	4
1.2	Intended Use	4
1.3	Service life	4
1.4	Warranty	4
2	Safety	5
2.1	General warning	5
2.2	Labels and symbols on the product	6
3	Setup	7
3.1	Receiving the bed	7
3.2	Main parts of bed	7
3.3	Assemble / Disassemble the bed	7
3.3.1	Mounting the bed ends	8
3.3.2	Mounting the side rails	8
3.3.3	Mounting the lifting pole	9
4	Operating the bed	10
4.1	Operating the side rails	10
4.1.1	Operating the lowering side rail	10
4.1.2	Operating the opening/foldable side rail	10
4.1.3	Operating child safety latch	10
4.2	Operating the hand control units	11
4.2.1	Hand control HL84, HL82 or HL81	11
4.3	Operating the castor brakes	12
4.3.1	Operating castors without central braking system	12
4.3.2	Operating central braking system	12
4.4	Operating the lifting pole	12
4.5	Manual positioning of the leg section	13
4.6	Emergency release of the backrest or thigh/leg section	13
5	Accessories	14
5.1	Accessories list	14
5.2	Mattresses	14
5.3	Upholstery	15
6	Maintenance	16
6.1	Maintenance	16
6.1.1	Maintenance Chart	16
6.2	Cleaning	17
6.3	Lubrication	17
6.4	Inspection after relocation - Prepare for new user	17
6.5	Dismounting the motor	18
6.6	Dismounting the mattress support	18
6.7	Dismounting the shear arms from the base	19
7	After Use	20
7.1	Waste disposal	20
8	Troubleshooting	21
8.1	Troubleshooting electrical system	21
9	Technical data	22
9.1	Dimensions bed	22
9.2	Weights	22
9.3	Dimensions mattresses	22
9.4	Environmental conditions	22
9.5	Electrical data	22
9.6	Electromagnetic compliance	23

I General

I.1 About this manual

Thank you for choosing an Invacare product.

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 person 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).

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 designed for disabled children with limited mobility
- The bed has been developed for home care, hospitals and other health care institutions.
- The bed has been designed for children; 3–12 years of age, and with a length of 92–155 cm.
- Safe Working Load (SWL): Max 100 kg (patient/user + accessories).
- Max User Weight: 70 kg (provided the accessories/equipment do not exceed the weight of 30 kg).
- The bed is not intended for psychiatric patients.
- The bed is not intended for transportation of users.



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 as stated in this User manual.

Throughout the entire production process our materials/products are quality controlled by the operators. Additionally, a final test is carried out prior to packaging and shipping.

The operator carrying out the final test, which includes a check of all moveable parts, motors and castors, issues a QA number on the product thereby confirming its quality. If the product does not correspond to the quality demands of *Invacare®*, it will be discarded.

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.

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.

2 Safety

2.1 General warning



WARNING!
Risk of injury

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



WARNING!
Risk of entrapment / suffocation

There's a risk of entrapment / suffocation between mattress support, side rail and bed end
– The bed must not be used by patients under 3 years of age, or with a body size smaller than an average 3 year old (over 92 cm length). See 1.2 Also, page 4
– The hand control must not be used by children.



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 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.



CAUTION!

- Always lower the bed to the lowest position before leaving the patient in the bed unattended.
- When entering or exiting the bed, the height adjustment should be used. Furthermore, the backrest can be used as support (yellow button on the hand control). However, the thigh- and leg section must be horizontal, otherwise, there is risk of overloading of the mattress support.



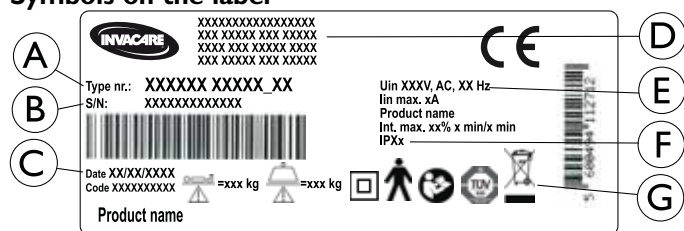
IMPORTANT!

- Make sure that there is nothing under, over, or near the bed that can limit the movement of the bed or the mattress support, such as furniture, window frames and storage boxes.
- Do not roll over the mains cable.
- Do not bring mains cable into moving parts.
- Disconnect the plug from the mains before moving the bed.
- Make sure that no cables (mains or from other equipment) are jammed or damaged, when the bed is used.
- The bed must not be placed close to a direct heat source (fire place, radiator etc) and not in direct sunlight.

2.2 Labels and symbols on the product

The product label is placed on the frame of the bed:


Symbols on the label











(A)	Type number of the bed
(B)	Serial number
(C)	Date of production
(D)	Manufacturer; Name and Address
(E)	Electrical information see Electrical system
(F)	IPX Degree
(G)	Symbols

Explanations to abbreviations on label			
lin	Current in	Max	Maximum
Vin	Voltage in	min	minutes
Int.	Intermitens	kg	kilogram
AC	Alternating current	A	Ampere

Symbols on the product

 All symbols might not be present on all products.

	Max. patient weight
	Max. safe working load
	Insulation class II
	Type B Applied Part. See also Electrical system
	Potential equalization
	Refer to the user manual.
	Waste disposal and recycling information. See 7.1 Waste disposal, page 20.
	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.

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: 1.4 Warranty, page 4



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, for this task, 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.



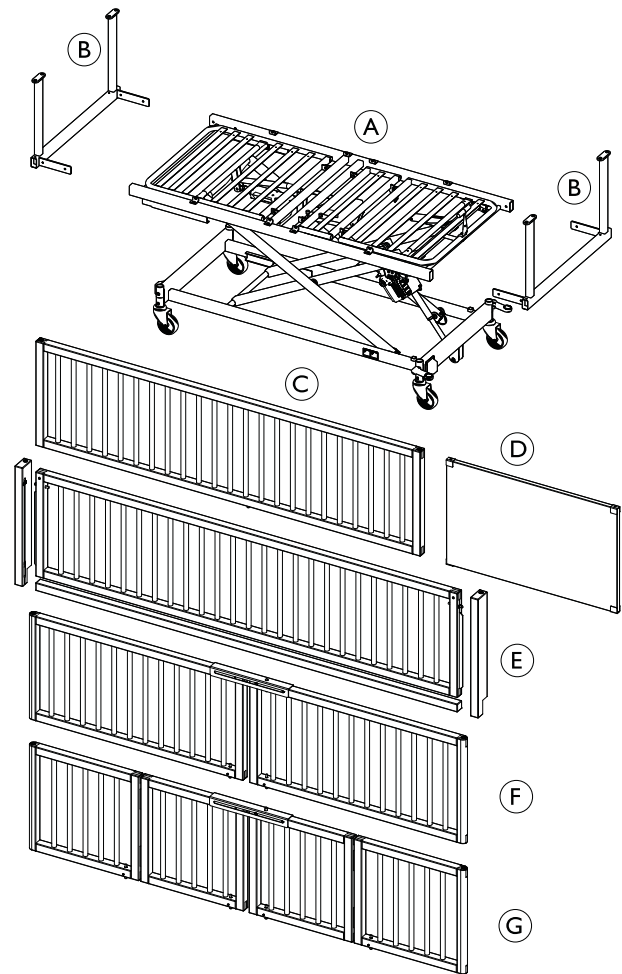
WARNING!

– The electrical equipment of the bed must not be dismantled or combined with other electrical equipment.

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
- Veneered beech

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

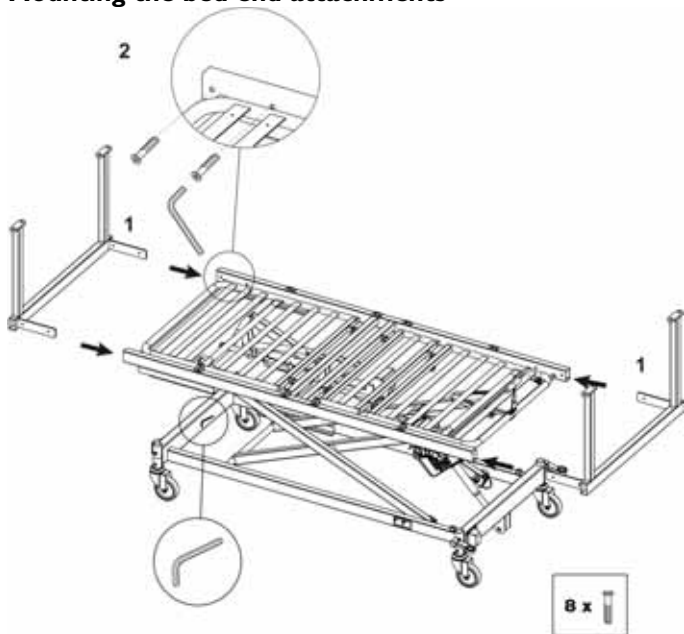
Tighten all screws and check that all parts are properly aligned with each other and that the bed is stable.

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

3.3.1 Mounting the bed ends

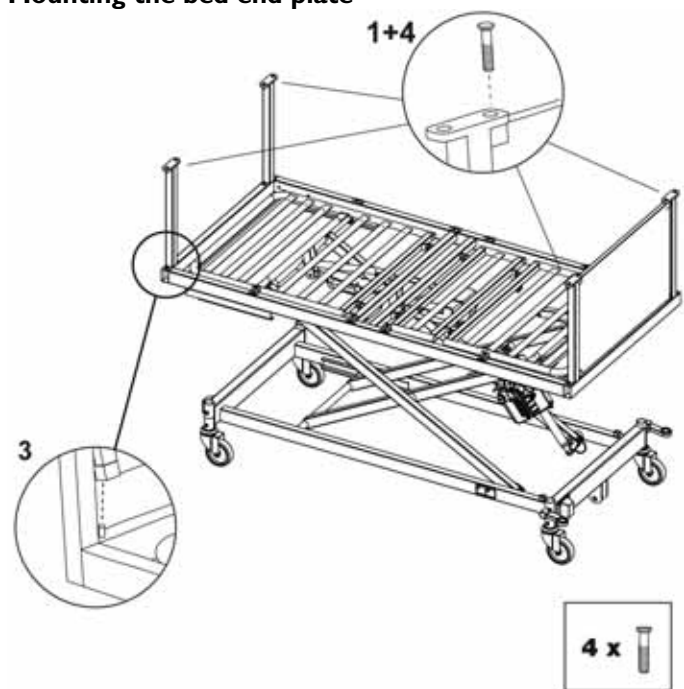
 The Allen key to use for assembling the bed ends is attached on the inside of the base frame (head end).

Mounting the bed end attachments

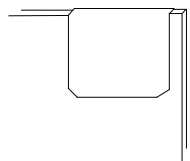


1. Insert the bed end attachments in the insert pipes on the mattress support.
2. Insert the two screws in each corner. Do not tighten the screws until the side rails are fitted and adjusted correctly.

Mounting the bed end plate




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.

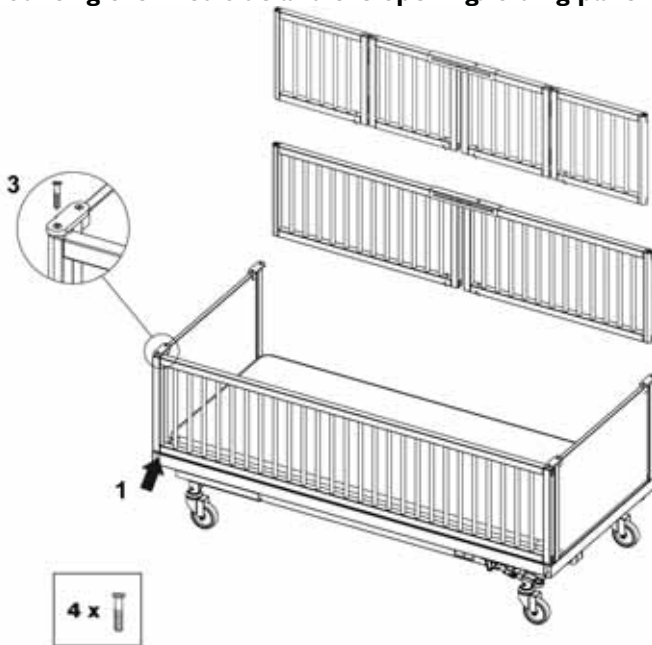
3. Place the holes of the bed end plate over the guide pins on the mattress support. Fold the plate in, while gently pushing it down.
4. Attach the bed end plate with the screws on top of the bed end attachments.

3.3.2 Mounting the side rails


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

3.3.1 Mounting the bed ends, page 8

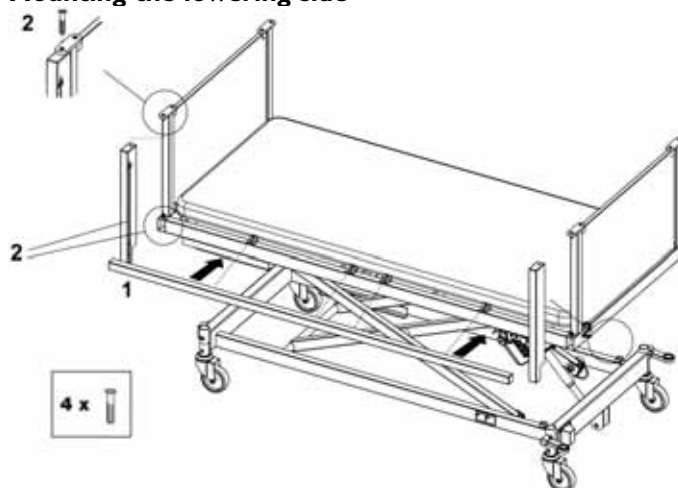
Mounting the fixed side and the opening/folding panel



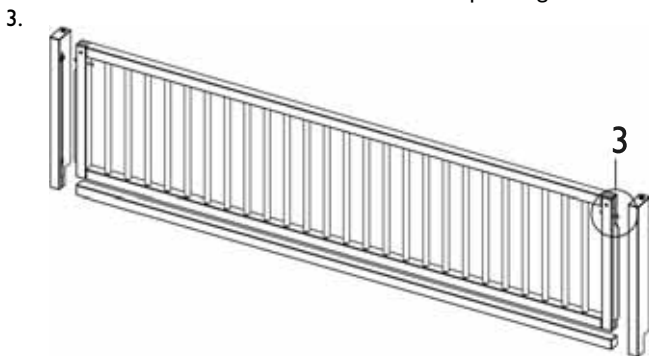
1. Fit the guide pins on the mattress support into the brass bushings on the side rail.
2. Fold the side rail in, while gently pushing it down.
3. Attach the side rail with the screws on top of the bed end attachments.

 **After mounting of opening/folding side rails:** Check that the side rails are straight and can be opened and closed without jamming.

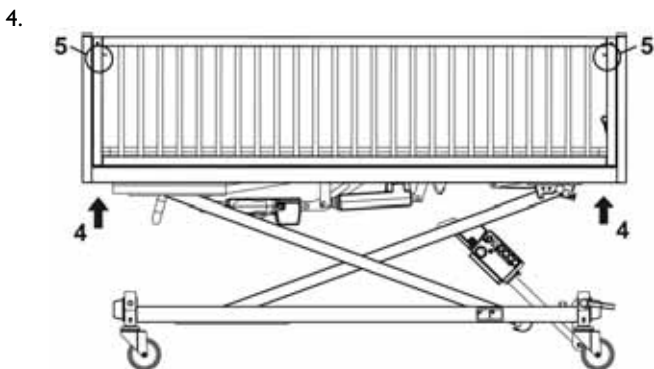
Mounting the lowering side



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.



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



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

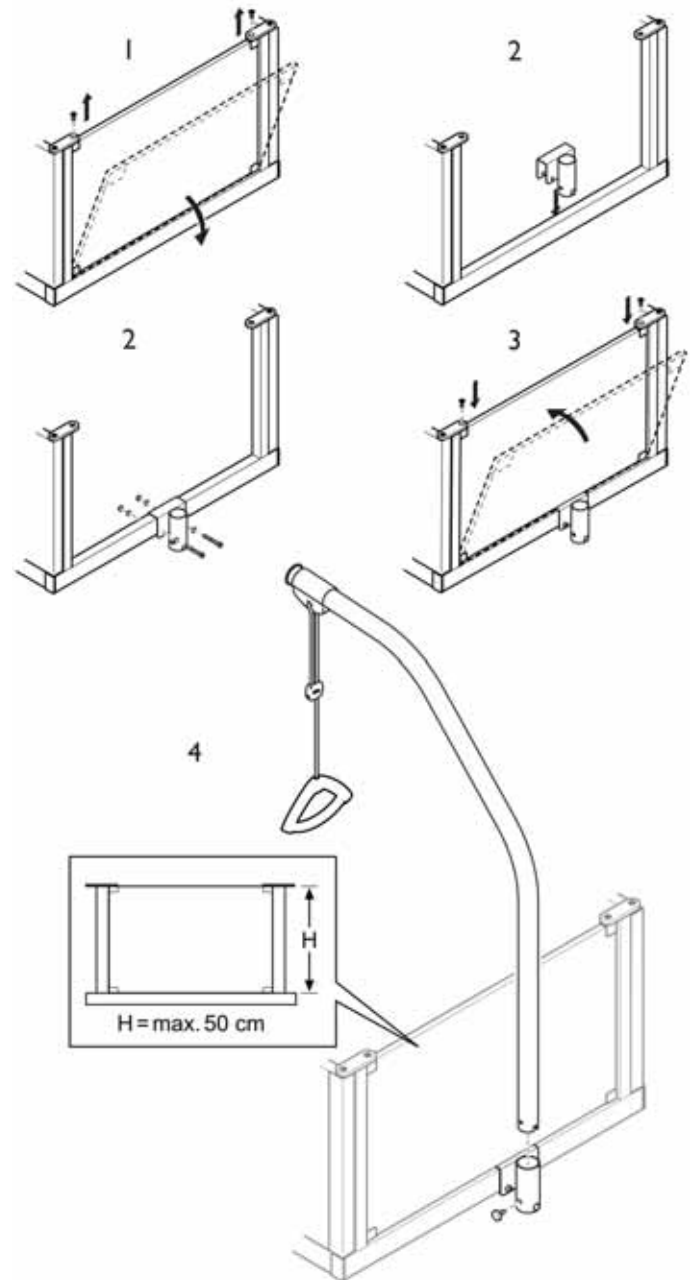
Follow instructions for mounting, but in reversed order.



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. Dismount the bed end plate. See instruction for mounting of bed end plate; section 3.3.1 Mounting the bed ends, page 8 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 Operating the side rails



WARNING!

Danger of entrapment or suffocation

There is a danger of entrapment or suffocation between mattress support, side rail and bed end.

- Always ensure correct fitting to avoid damage.

4.1.1 Operating the lowering side rail

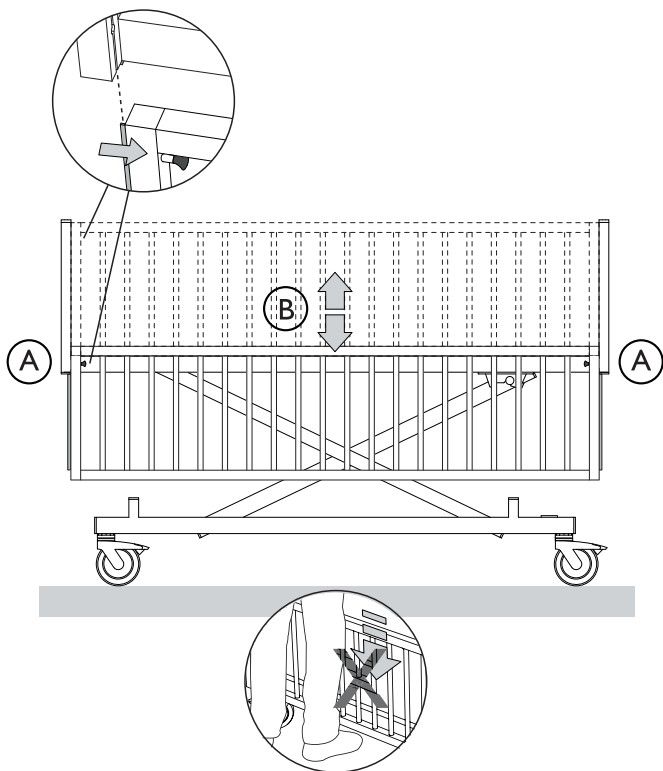


CAUTION!

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.

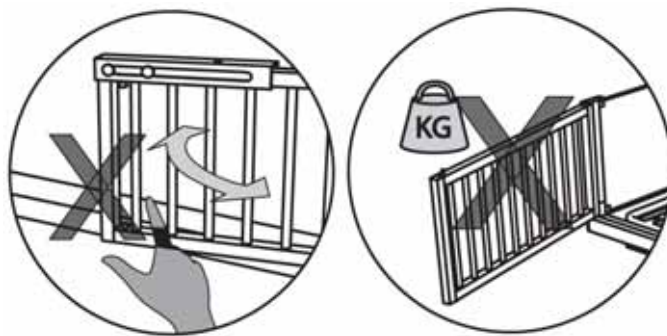


Up/Down

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.

4.1.2 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.

4.1.3 Operating child safety latch



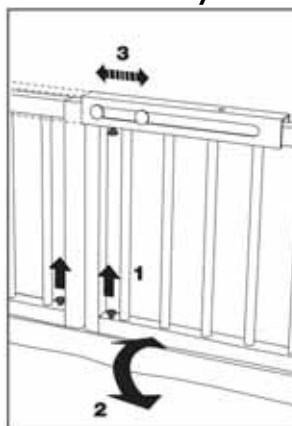
WARNING!

Risk of falling out of bed

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

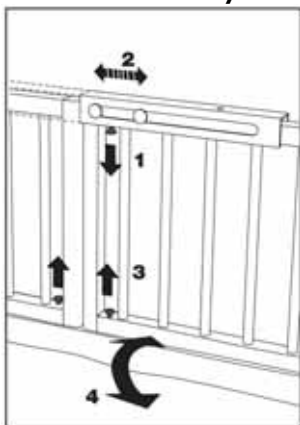
- Opening and folding side rails are equipped with child safety locks.
- Depending on the height of the side rail the beds have a different number of locking pins.

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.

4.2 Operating the hand control units



WARNING!

Risk of personal injury and damage to property.

- The bed must be placed so that the height adjustment (up/down) is not obstructed by, for example, lifts or furniture.



WARNING!

Risk of injury

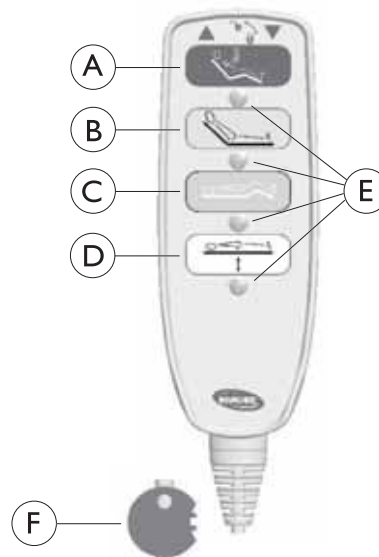
- If the bed is used by confused or restless persons or persons with spasms:
- if the bed is equipped with a lockable hand control, the functions have to be locked.
 - or the hand control must be kept out of reach for the user.

4.2.1 Hand control HL84, HL82 or HL81



Depending on the number of moving parts on the mattress support, the beds can be equipped with various hand controls, programmed with different functions.

HL84



- ▲ Up
- ▼ Down
- Ⓐ Seat section
- Ⓑ Backrest
- Ⓒ Thigh section
- Ⓓ Height adjustment
- Ⓔ Insert the key below each button to respectively lock and unlock the hand control functions.
- Ⓕ Key for locking or unlocking electrical functions.

HL82

HL 82 has the functions Ⓓ and Ⓑ

HL81

HL81 has the function Ⓓ.

4.3 Operating the castor brakes



CAUTION!
Risk of trapping

– Do not release the brake with the fingers



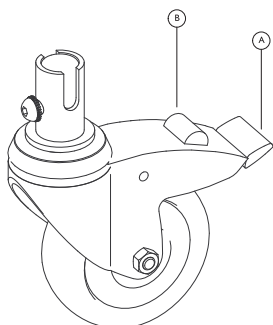
CAUTION!
Risk of falling

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.

i 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.

4.3.1 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** .

4.3.2 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.

4.4 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.

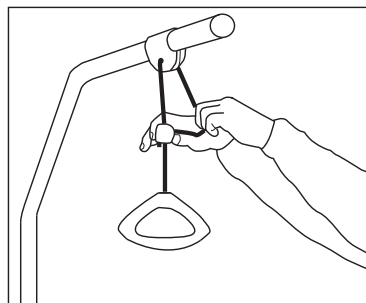
– The lifting pole always has to be positioned with the handle hanging over the bed area.

– Do not exceed the maximum load of the lifting pole; 70 kg.

Change height of the lifting pole handle

Lower the handle

1.

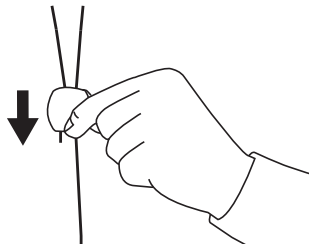


Pull the cord out to the side, to release it from the locking mechanism.

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

Raising the handle

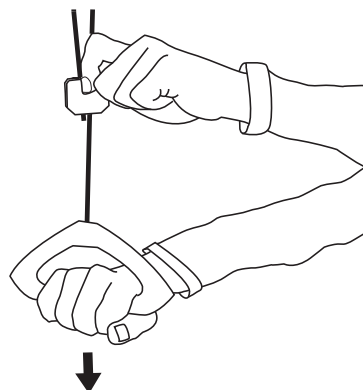
1.



Slide the cord lock downwards.

Lock the handle

1.



Lock the cord lock by pulling the handle downwards.



IMPORTANT!

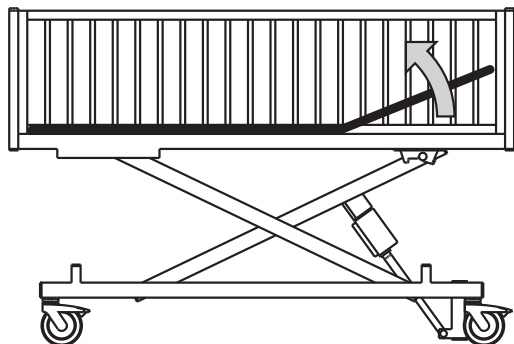
After adjustment of the lifting pole handle

– 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.

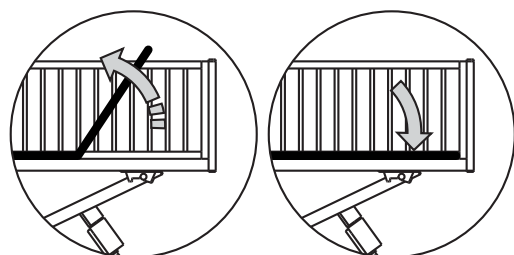
4.5 Manual positioning of the leg section

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.

4.6 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
- Side panels with veneered beech
- 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 on the back page of this user manual) or via www.invacare.com.

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.

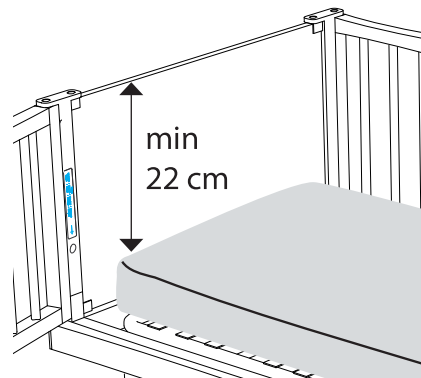
- For correct mattress measures see **mattress table: 9.3 Dimensions mattresses**, page 22



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 given side rail, as stated in the **mattress table: 9.3 Dimensions mattresses**, 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, between the top of the mattress and the edge of the side rail/bed end, is too short.

- Always keep a minimum distance of 22 cm. The maximum mattress height in combination with a given side rail is stated in the **mattress table: 9.3 Dimensions mattresses**, page 22

5.3 Upholstery

Upholstery can be used on all bed ends and bed side rails.

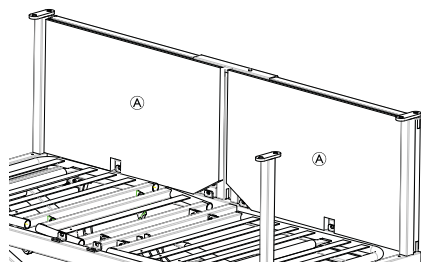
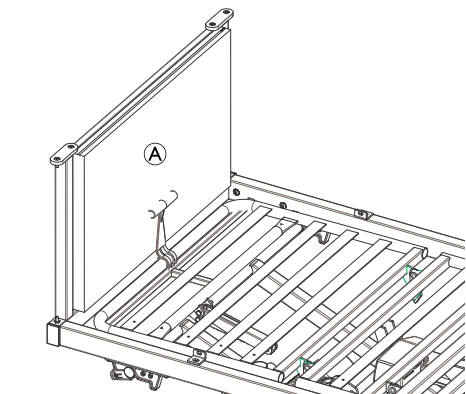


WARNING! **Risk of suffocation**

The user can get entrapped and/or suffocate if the upholstery loosens.

- Check that the upholstery is correctly attached to the velcro and that it cannot be loosened by the user.

Attach the velcro on solid bed ends and side rails

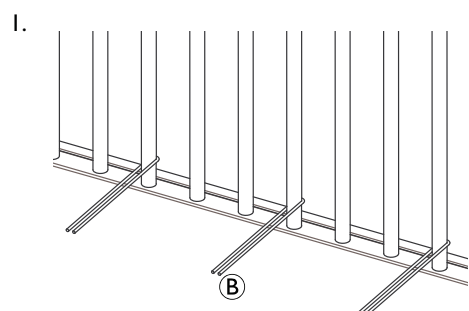


1. Remove the protective film on the Velcro attached to the upholstery **A**.
2. Press the upholstery onto the bed end plate or side rail.



Make sure that the velcro is properly glued onto the plate.

Attach the velcro on bed ends and side rails with bars



If the bed has bars; tie the ribbons around the bed bars and do not use the velcro.

6 Maintenance

6.1 Maintenance

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®*.

With normal daily use, service must be carried out according to the service schedule after two years use and thereafter every second year.

- !** **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 schedule.

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

- Service should be performed after the maintenance chart.



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

6.1.1 Maintenance Chart

Service and maintenance of the bed must only be performed by personnel who have received the necessary instruction or training.					
S/N (located on mattress support):					
Date/Initials					
Circlips, cotter pins and plastic fixing ring checked.					
Screws tightened.					
Weldings checked.					
Check the guideways, no bending.					
Check that the guideways reinforcement kit is properly fastened.					
Side rail locking and moving system tested.					
Castor fittings tightened.					
Castor brakes checked.					
Height adjustment motor checked.					
Backrest motor checked.					
Thigh section motor checked.					
Leg section motor checked.					
Cables correctly suspended and undamaged. Plugs undamaged.					
Damaged coating repaired.					
Line side rail straps checked (must not be frayed or cracked).					
Accessories checked.					

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.

6.4 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.
 - For regular maintenance see section: 6.1 Maintenance, page 16

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).				
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.				

6.3 Lubrication

We recommend lubricating the bed according to the following table:

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

Lubricate with:

- medically clean oil; such as Kemitura Kem Lub KEM-WO 50, order No: 813239

or

- grease, order No: 1497607

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

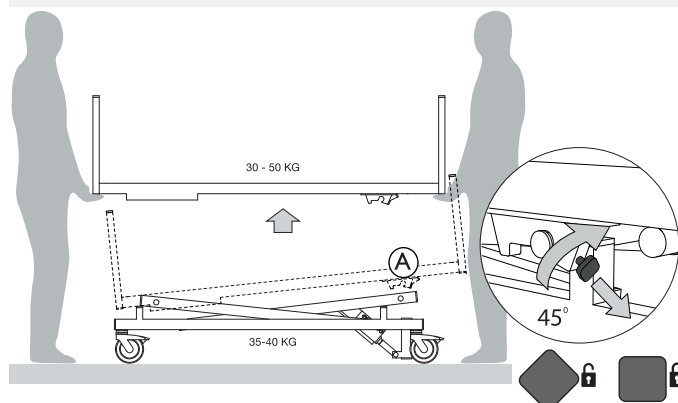
1. Place the motor in its insertion place and push the cotter pin through all holes.
2. Lift the brace up and fold it over the cotter pin to lock. See illustration in section “Dismount the motor”.

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.

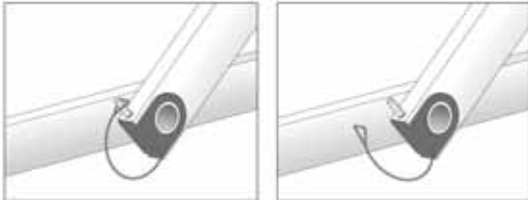
- Never pull the clamp part of the pipe pin.



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

This product has been supplied from an environmentally aware manufacturer that complies with the Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EU. 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.

The »crossed out wheelie bin« symbol is placed on this product to encourage you to recycle wherever possible.



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

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.

Waste disposal must comply with the laws and regulations pertaining waste handling in each country.

8 Troubleshooting

8.1 Troubleshooting electrical system

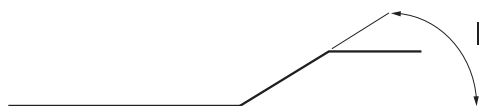
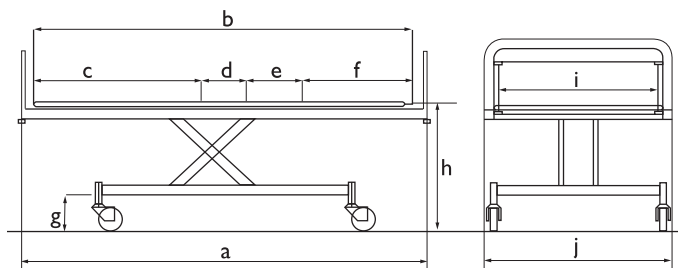
Symptom	Possible cause	Remedy
Mains indicator does not light up	Mains is not connected	Connect mains
	Fuse in the control unit is blown	Replace the control unit
	Control unit is defective	Replace the control unit
Mains indicator lights up, but the motor is not running. The relay in the control unit makes 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.		

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.



L / W	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 – 87,5		
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 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
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 patient or parts that are likely to be brought into contact with the patient.)
Sound level	55 dB (A)
Degree of protection	The control unit, external power supply and motors are protected according to *IPX4.

*IPX4 classification means that the electrical system is protected against water splashed against the component from any direction.

- The handcontrols have different IP-classes (see label on back), the IP-classification of the hand control decides the overall classification of the bed.
- The bed has no isolator (main switch). Disconnect the bed by unplugging it from the mains socket.

9.6 Electromagnetic compliance

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 A	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 B	
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 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.

<p>Conducted RF IEC 61000-4-6</p> <p>Radiated RF IEC 61000-4-3</p>	<p>3 V</p> <p>3 V/m</p>	<p>3 V</p> <p>3 V/m</p>	<p>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.</p> <p>Recommended separation distance:</p> $d = \left[\frac{3,5}{V_1} \right] \sqrt{P}$ $d = \left[\frac{3,5}{E_1} \right] \sqrt{P}$ $d = \left[\frac{7}{E_1} \right] \sqrt{P}$ <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> 
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^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 $[V_1]$ 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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