

Invacare® SB® 755



en **Bed**
Service Manual



DEALER: Keep this manual.
The procedures in this manual **MUST** be performed by a qualified technician.



Yes, you can.®

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This bed has been tested and approved according to IEC60601-2-52.

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 Introduction

This service manual contains information about technical adjustments, technical data, descriptions of how accessories are mounted and slightly more advanced settings.

This must be read thoroughly by the responsible technician when adapting the bed.

All references to left and right are based on a person lying on his back in the bed with his head in the head end.



For pre-sale and user information, please see the user manual. The user manual can be found on Invacare's website.

I.2 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.



Manufacturer of the product.

2 Safety

2.1 General warning


WARNING!
Risk of injury

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

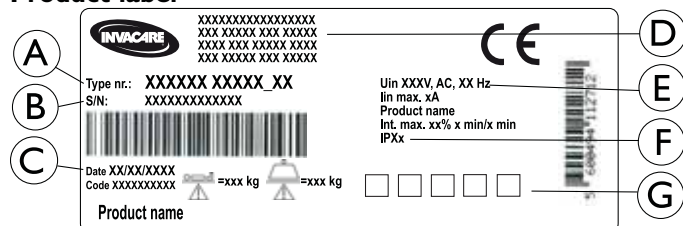
- Pay attention to your fingers.


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 (dire 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:

Product label


(A)	Type number of the bed
(B)	Serial number
(C)	Date of production

(D)	Manufacturer; Name and Address
(E)	Electrical information. See Chapter Technical Data.
(F)	Degree of protection. See also Technical data.
(G)	Symbols. See explanations in section; Symbols on the product.

Abbreviations

lin	Current in	Max	Maximum
Uin	Voltage in	min	minutes
Int.	Intermittency	kg	kilogram
AC	Alternating current	A	Ampere

Symbols


All symbols might not be present on all products.

	Max. patient weight
	Max. safe working load
	CLASS II equipment
	Type B Applied Part.
	Potential equalization
	Refer to the user manual.
	Waste disposal and recycling information.
	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 Assembly

3.1 Receiving the bed

When you receive the bed, check the packaging. If the packaging shows any signs of damage upon delivery, please contact the shipping company. If the bed shows damages - do not use the bed.



WARNING!

- Risk of personal injury or damage to property
- After each assembly, check that all fittings are properly tightened and that all parts have the correct function.
 - The electrical equipment of the bed must not be dismantled or combined with other electrical equipment.



CAUTION!

Risk of personal damage

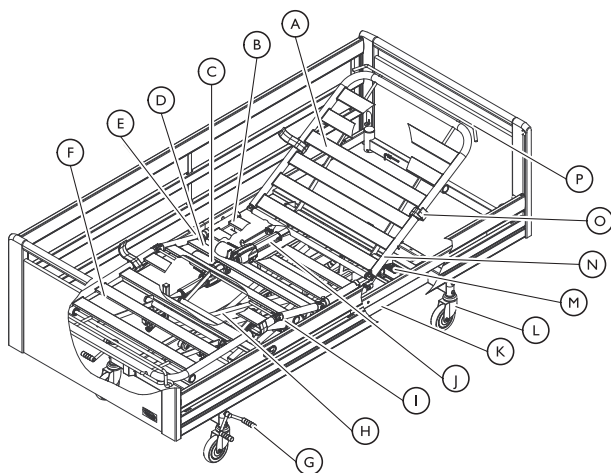
- There is a risk of entrapment or squeezing, while assembling or disassembling of the bed.
- The assembly of the bed and mounting of accessories must be done by qualified personnel.



IMPORTANT!

- Risk of condensation
- The bed should not be used until it has reached a temperature of 10-40° C.

3.1.1 Main parts of bed



Parts of standard bed:

- | | |
|-------------------------|--------------------------------|
| Ⓐ Backrest | Ⓘ Mattress support, lower half |
| Ⓑ Seat section | Ⓝ Backrest motor |
| Ⓒ Leg section motor | Ⓚ Base Frame |
| Ⓓ Thigh section | Ⓛ Brake - castor with brake |
| Ⓔ Thigh section motor | Ⓜ Control Unit |
| Ⓕ Leg section | Ⓤ Mattress support, upper half |
| Ⓖ Brake pedal - central | Ⓞ Mattress retainer |
| Ⓗ brake
shear arms | Ⓟ Mattress support extension |

3.1.2 Accessories / Components

For accessories, please see more information in the instructions delivered with the accessory.



Important

- Use only original accessories and spare parts. Spare parts lists and extra user manuals can be ordered from Invacare.

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

- Allen key
- adjustable spanner

3.2 Bed ends



CAUTION!

Risk of squeezing

- If the bed end is not correctly locked it can fall down and cause injury to user.
- Make sure the locking pins are engaged.



Risks when using bed end with removable plate.

- If the user is restless, confused or has spasms; Victoria Bed ends (with removable plates) must NOT be used.



Make sure that the side rails are combined with the right type of bed ends.

- Line or Britt V side rails shall be used with Susanne, Sophie, Anita or Victoria bed ends.
- The steel side rails are optional and designed to be used with Emma, Olivia or Piggy bed ends.

Locking pin



Mounting the bed ends

1. Lift the bed end and place on the bed end attachments.
2. Push down to click into place.
3. The locking pin must then be rotated and locked into position.

Dismounting the bed ends

1. Pull the locking pin out, and turn halfway to lock the pin.
2. Repeat on the other side.
3. Pull the bed end up and out.

3.2.1 Piggy bed end



For the Piggy Bed end the bed end attachments with U-profile are required.

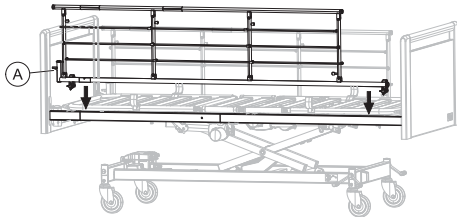
1. Replace the standard bed end attachments with the U-profile attachments (if not already assembled).
2. Press the bed end into the U-profile attachments.

3.3 Side Rails

3.3.1 Scala 2 side rail

Mounting side rail

1.

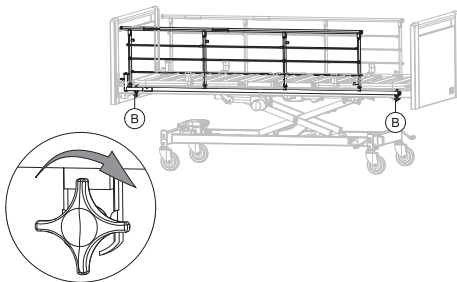


Place the side rail over the top frame with the release system **A** at the head end of the bed.



The fork links on the side rail must be mounted according to the instruction on the side rail.

2.



Tighten the finger screws **B** to attach the side rail on the top frame. Make sure it is steady and fastened.

Dismounting side rail

1. Loosen the two finger screws **B** and remove the side rail.

3.3.2 Britt V and Line side rail

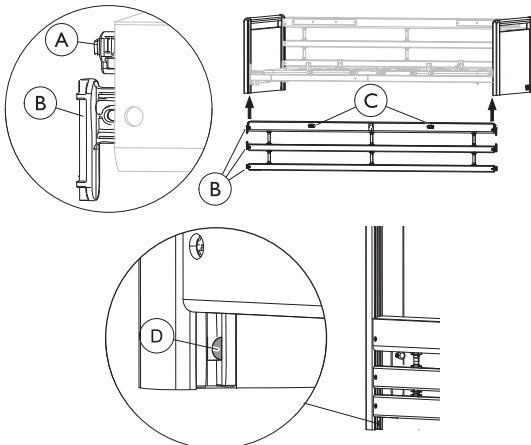


WARNING!

Risk of entrapment / suffocation

The user can get trapped or fall out of the bed if the side rail is not correctly mounted or damaged.

- Make sure that all gliding shoes are correctly guided into the bed end guideways.
- Make sure that all side rail bars are above the locking pin and properly locked.
- Make sure that the straps between the bars are not damaged or loose.



Mounting

1. Lift the upper bar in one end of the side rail. The release buttons **C** must face up/outwards.
2. Press in the locking pin **A** in the end of the side rail.
3. Guide the three gliding shoes **B** (in the end of the side rail bars) up into the bed end guideways, until they have all passed the locking pin **D**.
4. Repeat steps 2 and 3 to mount the other side of the side rail.

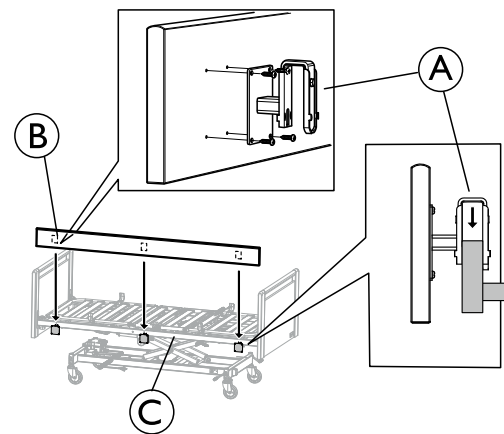
Dismounting

1. Lower the side rail.
2. Lift the lower bar, in one end, to make the locking pin **D** visible and press it in with a screwdriver.
3. Lower all three bars, until they are out of the guideways.
4. Repeat steps 2 to 3 to dismount the other end of the side rail.

3.3.3 Verso II side rail

For mounting of Verso II side rail see separate manual delivered with the accessory.

3.4 Wooden side panel



1. Use the four screws and fasten each attachment **A** in the pre-drilled holes on the panels backside **B** (rounded corners up).
2. Hang the attachments **A** on the bed frame **C** and press it down firmly. Make sure it is pressed all the way down.

3.5 Mattress support



IMPORTANT!

On the washable bed (IPx6w) the lower half of the mattress support exceeds the weight of 25 kg.

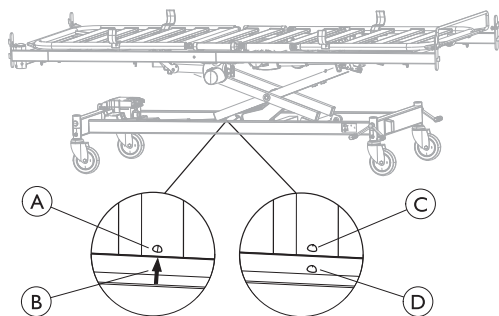
- Both motors can be dismantled to lower the weight below 25 kg.

3.5.1 Disassembly of mattress support



Before Disassembly of the bed;

- Ensure that the castors in the head end of the bed are pointing towards the center of the bed.
- Use the hand control to adjust it to the correct ergonomic height:



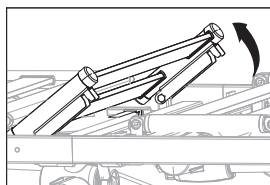
Bed width 85, 90 and 105 cm

The arrow (B) on the base frame and the welding point (A) on the shear arms crossbar, must be in line.

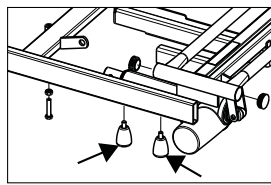
Bed width 120

(B) The welding point on the base frame (D) and the welding point (C) on the shear arms crossbar, must be in line.

1. Lock the brakes.
2. Dismount the accessories (bed ends, side rails, lifting pole etc). Leave the bed end attachments in place.
3. Disconnect the main power by unplugging it from the main power socket. On the washable bed (IPx6w) also remove the power plug from the control box.
4. Remove the locking cam from the control unit and disconnect all plugs except the hi/lo and the hand control.
5. Loosen the wires and make sure no wires are squeezed between moving parts.
6. Release the mattress support in the middle:

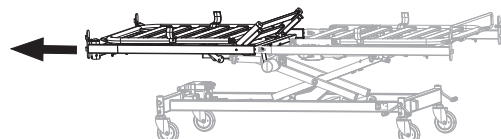


Bed width 85 and 90: Pull the seat section up.



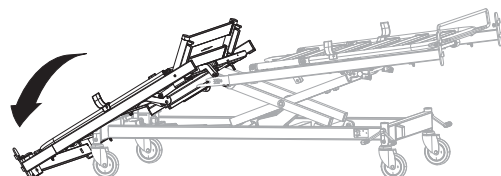
Bed width 105 and 120: Remove the finger-screws, under the side tubes on each side of the mattress support.

7.



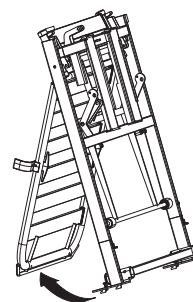
Stand at the end of the upper half of the mattress support, hold the sides on the frame and pull it straight out until it comes to a stop.

8.



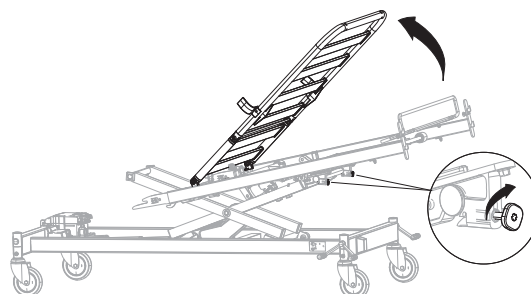
Tip it gently onto the floor while holding in the lower half of the mattress support (to avoid scratching the frame) and let it rest on the bed end attachments.

9.



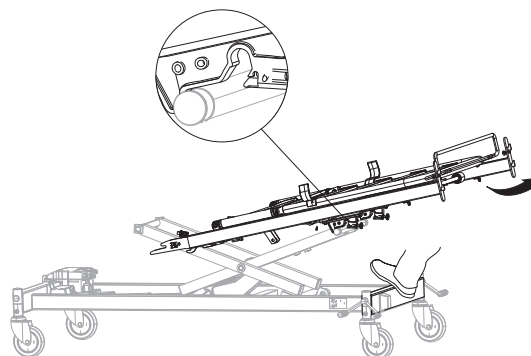
Tip the part to an upright position (on the bed end attachments) and fold out the backrest until it is in balance and let it stand aside.

10. Plug in the main power plug in the control box and connect the main power.
11. Move over to the lower part of the mattress support.
12. Put the hand control within reach.
- 13.



Lift the thigh/leg section up to reach the snap locks. Pull out the red, square locking buttons and turn them clockwise, until they stay out. Fold back the thigh/leg section.

14.

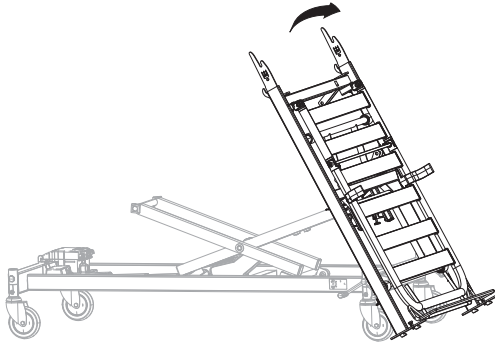


Stand in the foot end of the bed.

- a. Put your foot on the base and hold the sides of the frame
- b. Lift the section slightly up and pull it backwards until it unlocks and leans on the shear arms pivots.

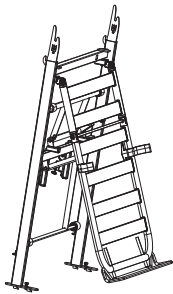
Don't pull it completely off.

15.



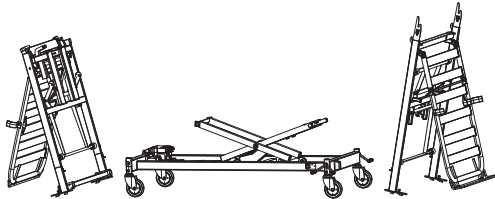
- Hold it steady and pull it slightly backwards to keep it out of the snap locks.
- Lower the bed with the hand control and tip the bed foot end down to the floor, until it rests on the bed end attachments.

16.



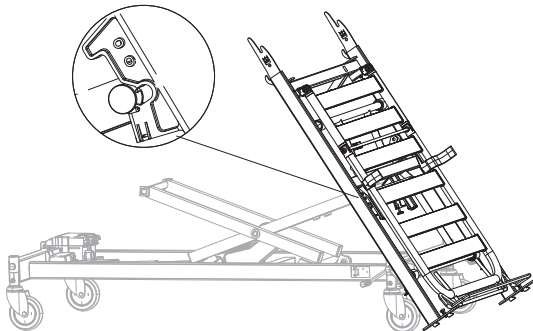
Tip up to an upright position (thigh section upwards). Fold out the thigh/leg section until it is in balance and let it stand aside.

17.



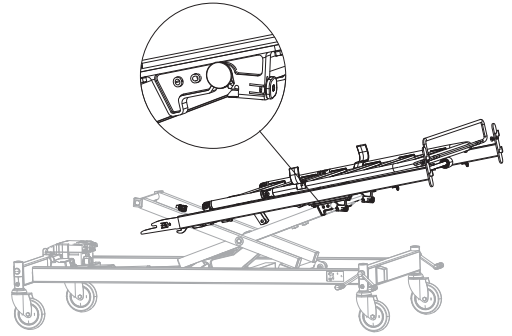
3.5.2 Assembly of mattress support

- Lock the brakes.
- Connect the plug to the mains socket.
-



- Take the hand control.
- Tilt the lower part of the bed in over the shear arms (while it is leaning on the bed end attachments).
- Hold it and use the hand control to lower the bed until the snap locks are fitted on the shear arms pivots.

4.

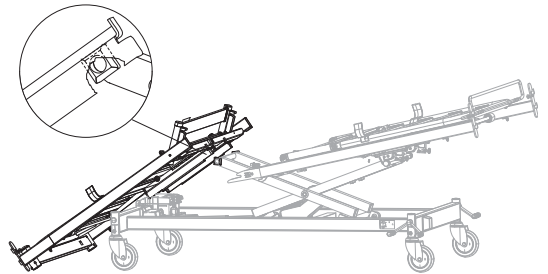


Push the section slightly towards the middle until the snap locks are activated with a clicking sound. Let it lean as shown in the image.

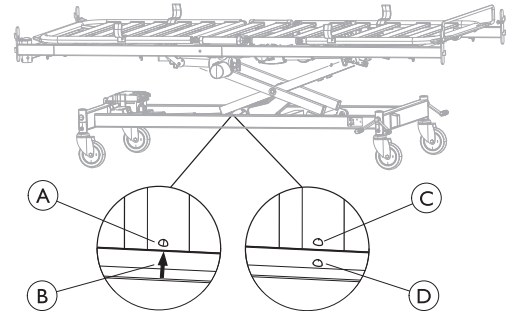
- i** Make sure the snap locks are properly engaged before proceeding. If not, turn the red buttons anti-clockwise to lock.

5. Move over to the upper part of the mattress support.

6.



- Take the hand control.
- From the upright position (resting on the bed end attachments); tip the section in over the control box.
- Use the hand control to raise the bed until the square plastic guides on the shear arms connect with the guideways on the mattress support frame.



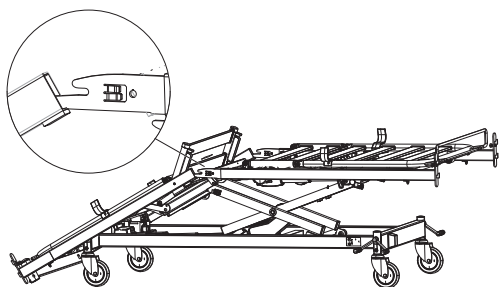
Bed width 85,
90 and 105 cm

The arrow **B** on the base frame and the welding point **A** on the shear arms crossbar, must be in line.

Bed width 120

B The welding point on the base frame **D** and the welding point **C** on the shear arms crossbar, must be in line.

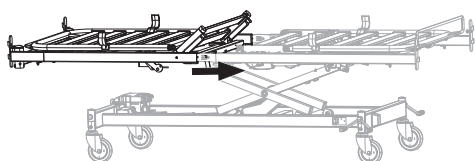
7.



- Lift up the lower section of the mattress support up to a horizontal position and hold it there.
- Lift the upper part of the mattress support slightly and fit the inserts in the openings of the side tubes.
- Let the inserts rest in the openings.

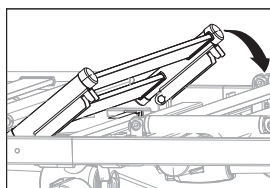
8. Move over to the bed head end.

9.

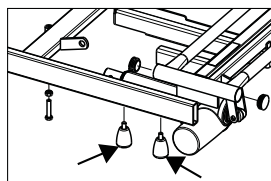


Lift the upper half of the mattress support and push it completely in over the inserts.

10. Lock the mattress support in the middle:

**Bed width 85 and 90:**

Push down the seat section.

**Bed width 105 and 120:**

Tighten the finger-screws, under the side tubes on each side of the mattress support.

11. Connect all plugs from the section motors in the control box.

12. Attach the locking cam over the plugs.

! IMPORTANT!

After assembly of the mattress support, check:

- that all plugs (motors and hand controls) are correctly connected to the control unit according to the printed symbols.
- that both sections of the mattress support are completely pushed together and the seat section completely down (locked).
- that bed ends are correctly attached and that the mattress support is attached to the shear arms (snap lock engaged).

3.6 Shear arms (dismountable)



CAUTION!

Risk of personal injury

Personal injury can occur if the snap lock between the base and the shear arm is not correctly engaged.

- Secure the snap lock.

! IMPORTANT!

If wires get trapped between the base and the shear arm they can get damaged.

- Make sure the wires run free from moving parts.

3.6.1 Disassembly of shear arms

- Lock the brakes.
- Use the hand control to lower the shear arms completely down.
-



Take hold of the small handle located next to the controls with one hand.

- Loosen the locking pin
- Lift the shear arm to an upright position.
-



Turn the shear arm and hold it towards the body before lifting.

- Lift the shear arms out of the base.

3.6.2 Assembly of shear arms

- Lock the brakes.
- Take hold of the handle on the shear arms.
-



Lift the shear arm into the base, resting on the floor.

-



Carefully lower the shear arm into place holding the handle.

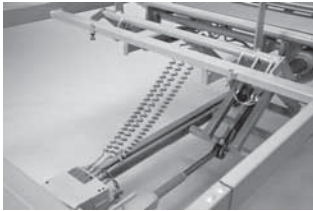
- Insert it into the guideways on the base.
- Make sure the snap lock is engaged..

3.7 Wiring



IMPORTANT!

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



- Check the wiring by operating the motors of the bed to their outer positions.
- There is no risk of squeezing the wires when correctly installed.
- It is normal for cables to stretch slightly after some usage.
- The wires are equipped with plugs at both sections and can be replaced independently (except for the height motor).



IMPORTANT!

IP Protection

- The hand control, control unit and motors are protected according to IPx4, IPx6 or IPx6w.
- To guarantee the IP protection, a locking cam must be installed on the control unit.

3.8 Storage of disassembled bed on base frame



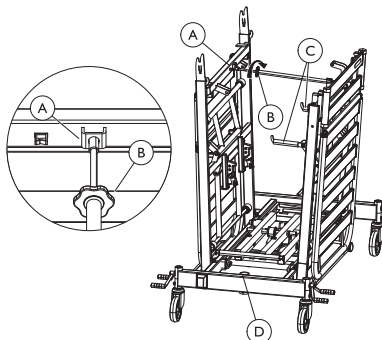
CAUTION!

Risk of personal injury or damage to property.

If the distance pin is not properly attached bed parts may fall off the trolley.

- Make sure the distance pin is correctly attached between the mattress support sections before hanging anything on the hooks.

Mounting the parts on the base frame



1. Lock the brakes
2. Use the hand control to lower the shear arms completely down.
3. Disconnect the plug from the mains.
4. Hang one mattress support section on each side, on the hooks on the base frame.

5. Put the distance pin in the bracket **A** and turn the locking wheel **B** to fixate and secure the parts. Make sure it is properly tightened.
6. Fold down both transport hooks **C** for the accessories.
7. Place the bed ends and side rails on the hooks.
8. Place the mattress between the sections.
9. Place the lifting pole in the tube **D** on the base frame.

Dismount the parts from the base frame

1. Lock the brakes.
2. Remove the accessories from the transport hooks.
3. Fold up the transport hooks.
4. Untighten the distance pin and fold it in.
5. Lift off the mattress support sections.

3.9 Mattress retainers

Mattress retainers keep the mattress in place when the user is moving in the bed or in/out of bed. They also enable the mattress to follow the movements when sections are positioned with the hand control.



WARNING!

Risk of injury

if the mattress retainers are removed, the mattress can slide sideways and cause the user to fall out of the bed or get trapped in the bed.

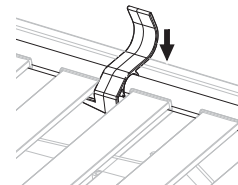
- Always use mattress retainers and be careful to put them back after any adjustments.
- Always use the right size of retainers depending on the bed width.
- Always place the retainers at the correct place according to instruction.



The mattress retainers come in different sizes depending on the width of the bed.

Mounting mattress retainers

1.

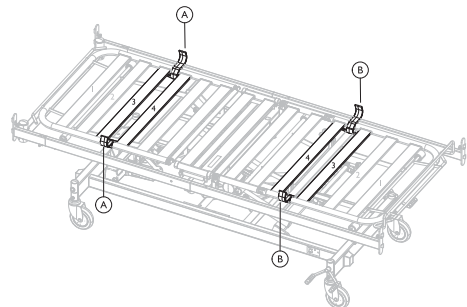


Clip the mattress retainer down, over the mattress frame.



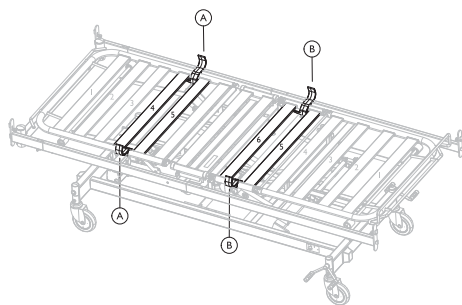
Make sure that the end with the hook is underneath the laths.

For bed width 85 – 90 cm



From head end of the bed - Place the mattress retainers **A** between lath 3 and 4.

From foot end of bed - Place the mattress retainers **B** between lath 3 and 4.

For bed width 105 - 120

From head end of the bed - Place the mattress retainers **A** between lath 4 and 5.

From foot end of bed - Place the mattress retainers **B** between lath 5 and the cross tube 6.

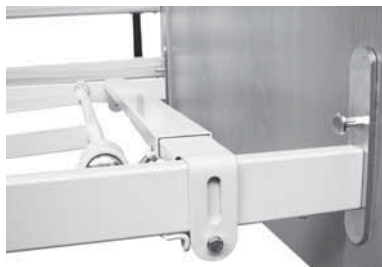
3.10 Limitation cross bar**WARNING!****Risk of squeezing or entrapment**

The user can get caught or squeezed when the leg section is lowered beneath the frame of the bed. Take special care when the user is restless or confused.

- To avoid the risk of entrapment a limitation crossbar can be fitted under the leg section of the mattress support.

Mounting the limitation crossbar under the leg section

1.



Lift the leg section of the mattress support to free the base.

2.



Fit the crossbar into place and tighten the screws.

3.



When properly installed, the leg section of the mattress support leans on the crossbar.

3.11 Mattress support extension

For patients, taller than two meters it is recommended to extend the bed with a mattress support extension.

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

The user can fall out of bed, get trapped or suffocated.

- Always extend the mattress when extending bed.
- There must be a distance of more than 2,5 cm, between the bed end and the mattress bow, to avoid entrapment of fingers.

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

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

- Always make sure to tighten the screws for the mattress support extension.

The bed can be extended 5-10 cm in both ends of the bed – 20 cm altogether.

Extend the bed — Foot end of bed

1. Dismount the side rail(s).
2. Loosen the screws on the bed end attachments in the foot end of the bed.
3. Pull out the bed end attachments 5 or 10 cm, and re-tighten both screws.
4. Loosen the screws on the mattress bow and pull it out to match the extension. Make sure there is at least 2,5 cm between the mattress bow and the bed end.
5. Replace the mattress or put in a fitting mattress piece.
6. Mount the side rail(s).

Extend the bed — Head end of bed

1. Dismount the side rail(s) and the lifting pole.
2. Loosen the screws on the bed end attachments in the head end of the bed.
3. Pull out the bed end attachments 5 or 10 cm, and re-tighten both screws.
4. Loosen the screws on the mattress bow and pull it out to match the extension. Make sure there is at least 2,5 cm between the mattress bow and the bed end.
5. Replace the mattress or put in a fitting mattress piece.
6. Mount the side rail(s) and the lifting pole.



Loose mattress pieces should always be fitted in the foot end of the bed.

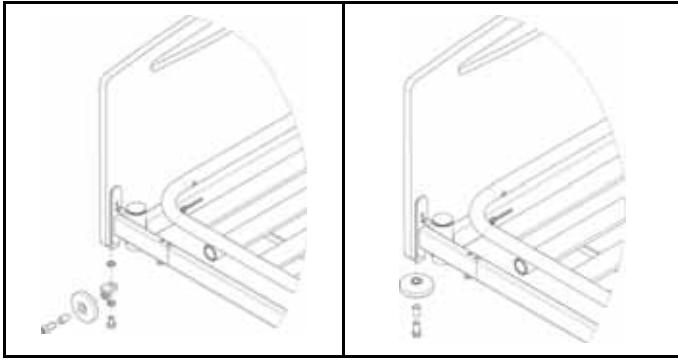


Allen key

3.12 Bumper wheels on Emma bed ends

Bumper wheels can not be mounted onto other bed ends.

The bumper wheels can be mounted in two different ways. See illustrations.



1. Mount the bushing in the bumper wheel
2. Fasten the bumper wheel with a screw into the bed end.

4 Maintenance

4.1 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 check list 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 check list.

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 according to the check list.



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

4.1.1 Checklist - Maintenance

Service and maintenance of the bed must only be performed by personnel who have received the necessary instruction or training.

Checkpoints

- ☐ Circlips, cotter pins and plastic fixing ring - properly locked and intact.
- ☐ Screws - tightened.
- ☐ Weldings - intact.
- ☐ Check the guideways - no bending.
- ☐ Check the guideways reinforcement - properly fastened.
- ☐ Side rail locking and moving system - properly locking and running smoothly.
- ☐ Castor fittings - tightened.
- ☐ Castor brakes - locking properly.
- ☐ 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.
- ☐ Damaged coating - repaired.
- ☐ Line side rail straps - not frayed or cracked.
- ☐ Accessories - correctly assembled and correct function.

4.2 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 maintenance chart.

4.2.1 Checklist - After relocation

Checkpoints

- ☐ Check that the lifting wedge runs in the centre of the support rolls; upper and lower.
- ☐ Check that the locking between the lifting wedge and piston from the motor is secure (pipe pins correctly mounted).
- ☐ Check that the side tubes of the mattress support are fully inserted, aligned and locked.
- ☐ Check that the latches, locking the mattress support on the shear arms, are properly engaged (red button on the mattress support).
- ☐ 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 that the locking cam is properly mounted over the contacts in the control box.
- ☐ 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 snap locks on the bed ends are properly locked (pin all the way in = locked)
- ☐ Check the locking function(s) of the side rails.
- ☐ Check that all bed slats are intact and not loose.

4.3 Cleaning and disinfection



! IMPORTANT!

- Wrong fluids or methods can harm or damage you product.
- Follow instructions carefully for either Non-washable or Washable components.
 - Never use corrosive fluids (alkalines, acid, cellulose thinner, acetone etc)
 - Never use a solvent that changes the structure of the plastic or dissolves the attached labels.
 - Always make sure that the bed is carefully dried before taking it into use again.

4.3.1 Non-washable components



! IMPORTANT!

- Non-washable components cannot withstand washing with Jet based equipment.
- The washability of the components must be determined by authorized personnel.
 - If the components cannot withstand Jet base equipment or if it is unclear they have to be cleaned as non-washable components.

Electrical components

Method:	Wipe off with a wet cloth or brush.
Max temp:	40 °C
Solvent/chemicals:	Water

Metal components

Method:	Wipe off with a wet cloth or brush.
Max temp:	40 °C
Solvent/ chemicals:	Household detergent or soap and water, 6-8 pH


Wood and textile straps on side rails

Method:	Wipe off with a wet cloth or brush.
Max temp:	40 °C
Solvent/ chemicals:	Household detergent or soap and water, 6-8 pH

Textiles (including upholstery and mattresses)

Method:	See attached label on each product.
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4.3.2 Washable components

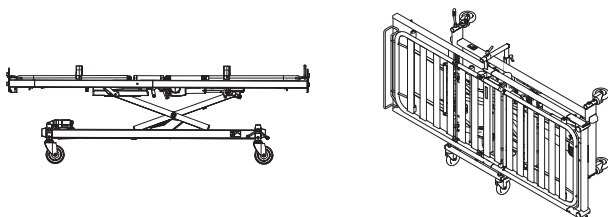
 Washable components can withstand washing/drying with jet based equipment or in automatic washing plants

- ! IMPORTANT!**
- The IP classification determines the washability of the electrical components.
- Electronics classified IPx4 and/or IPx6** may NOT be washed with jet based cleaning equipment or in a washing tunnel.
- Electronics classified IPx6w** can be washed with jet based cleaning equipment or in a washing tunnel.
- The IP classification is stated on the serial labels of the electrical components.
 - Please also note that the components can have different classification.
 - Non-washable components are cleaned according to instructions in the section Non-washable components.

Washing and rinsing/flushing

- ! IMPORTANT!**
- Necessary protective measures before washing with jet based equipment or in automatic washing plants.
- Remove non-washable electronics (see IP class).
 - Remove power plug from mains.
 - Remove all textiles (including mattress and upholstery).
 - Remove all wooden parts.
 - Remove aluminium side rails.
 - Make sure all plugs on the bed are placed in their sockets during washing.
 - All disconnected (loose) plugs shall be protected with plastic covers.
 - Run the motors all the way down/in to prevent them from calcium sedimentation and corrosion.

Orientation of product:




Placed on its castors

Placed on the side on a trolley

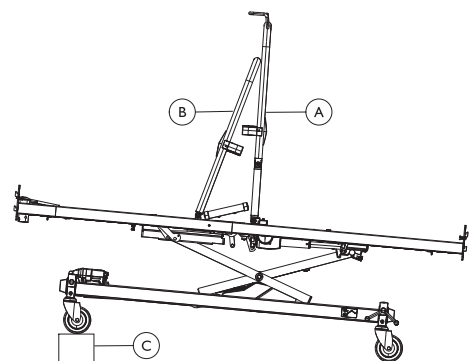
	Washing	Rinsing/flushing
Max temp:	65 °C	80 °C
Solvent/ chemicals:	Ph 6–8	Ph 7
Duration:	Maximum 10 min	Maximum 3 min
Max pressure:	8 Bar, with a nozzle distance of 30 cm from part	

Drying

Method:	Washing cabinet, drying cabinet or room temperature
Max temp:	40 °C for IPx4 and IPx6
Duration:	50 °C for IPx6w 10 min

 It is important to place the bed in a correct way, to let the water run out of the tubes.

Bed placed on its castors



1. Place the thigh/leg section **A** and the backrest **B** in an upright position.
2. Tilt the bed by placing an object (about 10 cm) **C** under the head end castors.

Bed placed on trolley

1. Tilt the bed/trolley to one side, by placing an object (about 10 cm) under the castors. Leave it for 5 minutes.
2. Tilt the bed/trolley, to the other side, by placing an object (about 10 cm) under the castors. Leave it for 5 minutes.

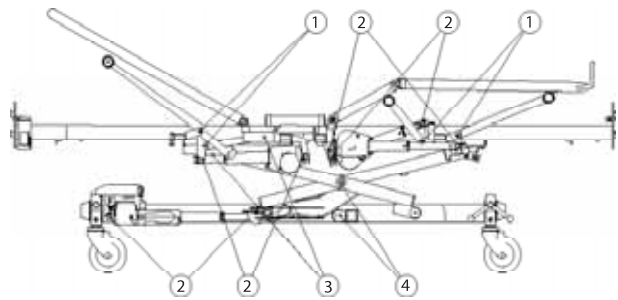
- ! IMPORTANT!**
- The bed must be dry when leaving the washing tunnel or when back in room temperature.

4.3.3 After washing

Necessary precautions before taking the bed into use again

1. Inspect carefully for remaining water and wipe off with a dry cloth. Especially check the guideways.
2. Test all electric functions.
3. Lubricate the bed according to lubrication chart
4. Recondition the bed according to section *Inspection after relocation*
– Prepare for new user.

4.4 Lubrication



We recommend lubricating the bed according to the following table:

	Part of bed	Lubrication method
1	Bearings for lifting- and shear arms	Oil (medically clean)
2	Motor suspension	Oil (medically clean)
3	Gliding shoes and guideways	Grease
4	Axles and rolls for shear arms (axle must be dismounted)	Grease

IMPORTANT!

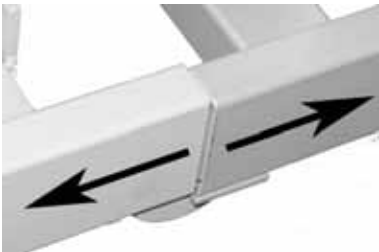
The gliding shoes in the Line side rails’ gliding system move sluggishly if lubricated with oil.

4.5 Adjusting misaligned platform tubes

This instruction only applies to beds 85–90 cm wide.

In the event that the side tubes are misaligned in the assembly, the inserts can be adjusted for better fit.

1.



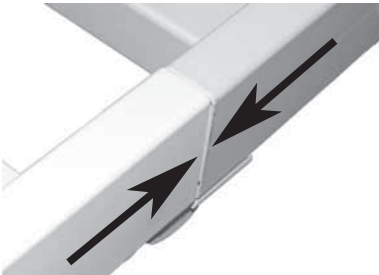
Slide the side tubes apart.

2.



Use a large screwdriver to flip the little tongue 1-2 mm.

3.



Slide the side tubes along. Verify that the side tubes are aligned

5 After Use

5.1 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.

5.2 Reuse

This product is suitable for reuse after the following has been performed:

- Inspection
- Cleaning



WARNING!

Risk of injury

For detailed information about inspection and cleaning; see the Service manual for this product.

- Always inspect the product according to the service instructions before transferring the product to a different user.
- If any damage is found do not use the product.

6 Troubleshooting


6.1 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.		

* Service and maintenance of the bed must only be performed by personnel who have received the necessary instruction or training.

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.

**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.

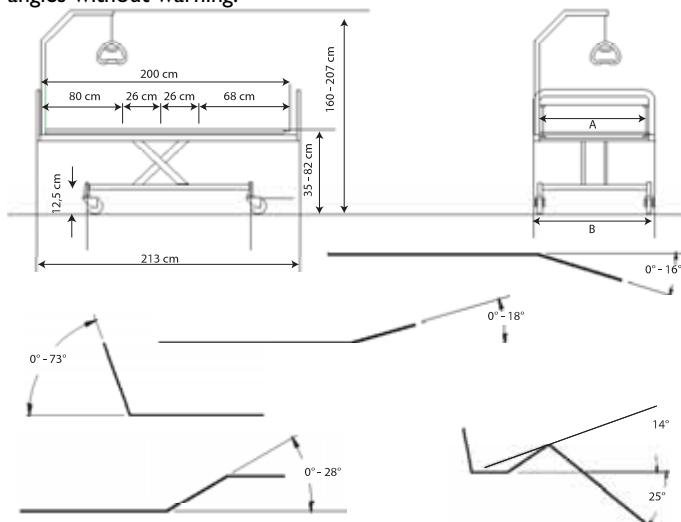
7 Technical data

7.1 Dimensions bed

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

The bed can be extended respectively 5 and 10 cm's in both ends.

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



	SB 755
Mattress support width A	85 / 90 / 105 / 120 cm
Total width B	90 / 100 / 110 / 125 cm
Mattress support length	200 (80+26+26+68) cm
Total length	213 cm
Bed to floor height	35 – 82 cm
Base to floor height	15 cm
Total height (with lifting pole)	160 – 207 cm

7.2 Dimensions side rails

Side rail	Type	Measures	Information
Line standard	Full length aluminium side rail	206 cm x 40 cm	Mounted on the bed end guideways. Release buttons in the middle.
Line Extendable	Full length aluminium side rail with telescopic extension	206-226 cm x 40 cm	Mounted on the bed end guideways. Release buttons in the middle.
Britt V	Full length wood side rail	205 cm x 40 cm	Mounted on the bed end guideways. Release buttons in the middle.

Scala Basic 2 / Scala Basic Plus 2	3/4 length collapsible steel side rail	168 cm x 40 cm	Mounted on the side tube. Release button in the head section.
Scala Medium 2	3/4 length collapsible steel side rail	165 cm x 46 cm	Mounted on the side tube. Release button in the head section.
Scala Decubi 2	3/4 length collapsible steel side rail	168 cm x 54 cm	Mounted on the side tube. Release button in the head section.
Verso II	3/4 length collapsible steel side rail	156 cm x 40 cm	Mounted on the side tube. Release button in the foot section.
Diana	3/4 length steel side rail	153 cm x 37 cm	Mounted on the bed frame. Release buttons in both ends.

7.3 Weights

	Max. user weight (provided that the weight of the mattress and the accessories do not exceed 35 kg)	200 kg
	Max. safe working load weight (including accessories)	235 kg

Weights bed with non-washable electronics

	Mattress support width 85 / 90 cm	Mattress support width 105 cm	Mattress support width 120 cm
Complete bed (excl accessories)	90 kg	108 kg	107 kg
Mattress support, upper half	25 kg	33,5 kg	37 kg
Mattress support, lower half	25 kg	33 kg	28 kg
Shear arms, standard	40 kg	41,5 kg	42 kg
Shear arms, dismantable	18 kg	—	—

Weights bed with washable electronics

	Mattress support width 85 / 90 cm	Mattress support width 105 cm	Mattress support width 120 cm
Complete bed (excl accessories)	95 kg	113 kg	112 kg
Mattress support, upper half	26 kg	34.5 kg	38 kg
Mattress support, lower half	26 kg	34 kg	29 kg
Shear arms, standard	43 kg	44,5 kg	45 kg
Shear arms, dismountable	21 kg	—	—

Weights bed parts and accessories

	Mattress support width 85 / 90 cm	Mattress support width 105 cm	Mattress support width 120 cm
Side rail Line	4,5 kg/pcs	4,5 kg/pcs	4,5 kg/pcs
Side rail Line, extendable	6,5 kg/pcs	6,5 kg/pcs	6,5 kg/pcs
Side rail Britt V	7,7 kg/pcs	7,7 kg/pcs	7,7 kg/pcs
Side rail Britt V extended +10	9,1 kg	9,1 kg	9,1 kg
Side rail Britt V extended +20	9,5 kg	9,5 kg	9,5 kg
Side rail Scala 2	7,4 kg/pcs	7,4 kg/pcs	7,4 kg/pcs
Side rail Verso II	9,3 kg	9,3 kg	9,3 kg
Bed end Emma	7 kg/pcs	—	—
Bed end Victoria	10 kg/pcs	—	—
Bed end Susanne	8,5 kg/pcs	9,5 kg/pcs	10,5 kg/pcs
Bed end Sophie	8,5 kg/pcs	9,5 kg/pcs	10,5 kg/pcs
Bed end Anita	9 kg/pcs	—	—
Bed end Piggy	6 kg/pcs	—	—
Bed end Olivia	9,5 / 10 kg (head end) 6,5 kg (foot end)	—	—
Lifting pole	4,2 kg	4,2 kg	4,2 kg

Weights wooden side panel

	Panel length 200 cm	Panel length 210 cm	Panel length 220 cm
For standard bed end	5,7 kg	5,9 kg	6,2 kg

For lowered bed end	6,6 kg	6,8 kg	7,1 kg
For use with side rail Scala	7,1 kg	7,4 kg	7,7 kg

7.4 Allowed mattress sizes

Allowed mattress height and length depending on the side rail in use

Bed side rails	Allowed mattress sizes		
	Max height (cm)	Min height (cm)	Min length (cm)
Line/Line Extendable	18	12	200
Britt V	18	12	200
Scala Basic 2	15	8	200
Scala Basic Plus 2	15	8	200
Scala Medium 2	20	8	200
Scala Decubi 2	29	21	200
Verso II	18	10	200

Allowed mattress width (for all side rails)

Bed width	Allowed mattress width
85 cm	83–85 cm
90 cm	88–90 cm
105 cm	103–105 cm
120 cm	118–120 cm

7.5 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.

7.6 Electrical system

Voltage supply	Uin 230 Voltage, AC, 50 Hz (AC = Alternating current)
Maximum current input	Iin max. 1,5 Ampere
Intermittent (periodic motor operation)	10 % 2 min ON / 18 min OFF
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	<p>The control unit, external power supply, motors and hand controls are protected according to IPx4, IPx6 or IPx6w (depending on configuration). See bed product label and label on each electric device for correct IP class. The lowest IP-classification decides the overall classification of the bed.</p> <p>IPx4- The system is protected against water splashed from any direction.</p> <p>IPx6- The system is protected against water projected from any direction (not high pressure).</p> <p>IPx6w- The system is protected against high pressurized water and steam projected from any direction.</p>



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

7.7 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 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.

<p>Voltage dips, short interruptions and voltage variations on power supply input lines</p> <p>IEC 61000-4-11</p>	<p>< 5% U_T (>95% dip in U_T) for 0,5 cycle</p> <p>40% U_T (60% dip in U_T) for 5 cycles</p> <p>70% U_T (30% dip in U_T) for 25 cycles</p> <p>< 5% U_T (>95% dip in U_T) for 5 sec</p>	<p>< 5% U_T (>95% dip in U_T) for 0,5 cycle</p> <p>40% U_T (60% dip in U_T) for 5 cycles</p> <p>70% U_T (30% dip in U_T) for 25 cycles</p> <p>< 5% U_T (>95% dip in U_T) for 5 sec</p>	<p>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.</p> <p>U_T is the a. c. mains voltage prior to application of the test level.</p>
<p>Power frequency (50/60 Hz) magnetic field</p> <p>IEC 61000-4-8</p>	<p>3 A/m</p>	<p>3 A/m</p>	<p>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	3 V	3 V	<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> $d = \left[\frac{3,5}{V_1} \right] \sqrt{P}$ $d = \left[\frac{3,5}{E_1} \right] \sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = \left[\frac{7}{E_1} \right] \sqrt{P} \quad 800 \text{ MHz to } 2,5 \text{ GHz}$ <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in 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> 
Radiated RF IEC 61000-4-3	3 V/m	3 V/m	

^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	0,40	0,40
0,1	0,37	1,26	1,26
1	1,17	4,00	4,00
10	3,69	12,65	12,65
100	11,67	40,00	40,00

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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