Invacare® SB®755

en Bed
User Manual

CE

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.

Contents

1 General

1.1 Introduction

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.

To ensure correct use, the bed must be tested and adjusted by qualified personnel.

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.

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

1.1.1 Symbols in this manual

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

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

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

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

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

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.

1.2 Intended Use

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

- *Application environment 3*; Long-term care in a medical area where medical supervision is required and monitoring is provided if necessary and medical electrical equipment used in medical procedures may be provided to help maintain or improve the condition of the patient.
- *Application environment 4*; Care provided in a domestic area where medical electrical equipment is used to alleviate or compensate for an injury, disability or disease.
- The bed is intended for indoor use only.
- The bed is intended for adult users, having a physical size equal to or more than 146 cm, a weight equal to or more than 40 kg and a body mass index (BMI) equal to or more than 17.
- The bed is not intended for transportation of users. It is mobile within a room with a user in it. Castors are lockable.
- The bed is not intended for psychiatric patients.
- Maximum user weight and safe working load are listed on the product label and in the technical data section in this manual.

WARNING!
Any other or incorrect use could lead to hazardous situations.
Invacare accepts no liability for any use, change or assembly of the product, other than stated in this user manual.

1.3 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.

1.4 Compliance

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

We are continuously working towards ensuring that the company's impact on the environment, locally and globally, is reduced to a minimum. We use only REACH and RoHS compliant materials and components.

The product is compliant with the European Directive 93/42/EEC concerning Class 1 medical devices.

The product has been tested and conforms to IEC 60601-2-52 – Medical Beds and all related standards. This includes tests regarding flammability and biocompatibility.

1.5 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.

1.6 Limitation of liability

Invacare accepts no liability for damage arising from:

- Non-compliance with the user manual
- Incorrect use
- Natural wear and tear

- Incorrect assembly or set-up by the purchaser or a third party
- Technical modifications
- Unauthorized modifications and/or use of unsuitable spare parts

2 Safety

2.1 General safety information

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

WARNING!
Risk of slipping through the openings
The bed fulfils all requirements regarding maximum distances. However, it is possible that persons with small body dimensions slip through the openings between the side rails or through the opening between the side rail and the mattress support.
– Pay special attention, if the bed is used for the care of persons with small body dimensions.

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

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

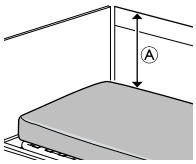
CAUTION!
There is a risk of entrapment of fingers in the bed moving parts.
– Pay attention to your fingers.

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

2.2 Mattresses

WARNING!
Safety aspects regarding combination of side rails and mattresses:
To get the highest possible safety level, when using side rails on the bed, the minimum and maximum measures for mattresses, must be respected.
– For correct mattress measures see mattress table in chapter *7 Technical data, page 16*.

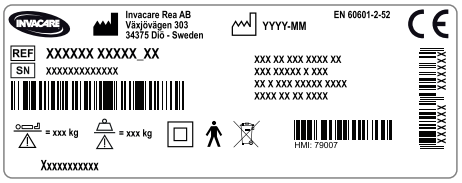
WARNING!
Risk of entrapment and/or suffocation
– The user could get trapped and/or suffocate, if the horizontal space, between the mattress side and the inside of the side rail, is too big. Follow the minimum width (and length) of mattresses in combination with a side rail, as stated in the mattress table in chapter *7 Technical data, page 16* .
– 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. See image above.
– Always keep a minimum distance Ⓐ of 22 cm.
– Follow the maximum mattress height in combination with the side rail as stated in the mattress table in chapter *7 Technical data, page 16*.

2.3 Labels and symbols on the product

2.3.1 Product label



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

Symbols

SN	Serial Number
REF	Reference Number
	Manufacturer Address
	Manufacturing Date
	Max. User Weight
	Max. Safe Working Load
	CLASS II equipment
	Type B Applied Part
	WEEE conform
CE	This product complies with Directive 93/42/EEC concerning medical devices.

Abbreviations for technical data:

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

For more information about technical data, refer to *7 Technical data, page 16*.

2.3.2 Other labels and symbols

	Refer to User Manual

Label – user and mattress sizes

	Definition of min. weight, min. height and min. body mass index of an adult user Refer to user documentation for the correct mattress measures.

Label for washable bed

	Indicates, that the bed can be used with automatic washing systems. (Present on washable version only)

Label for potential equalization

	Marks out the location of connection for means of potential equalization. (Not present on all versions of this product)

Label on 3/4 length side rails

	Indicates the maximum space between side rail and the head end of the bed.

Labels on Torill side rails

	Indicates the allowed mounting positions and spaces between the side rails and the bed ends. Top: if only one side rail is mounted on the side of the bed. Bottom: if two side rails are mounted on the same side of the bed.
	Indicates the left version of the Torill long side rail, only to be mounted on the left side of the bed. *Torill long version only*
	Indicates the right version of the Torill long side rail, only to be mounted on the right side of the bed. *Torill long version only*

3 Operating the bed

3.1 General Safety Information

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

WARNING!
Risk of injury
If the bed is used by confused or restless users or users with spasms:
– either, when the bed is equipped with a lockable hand control, lock the hand control functions,
– or make sure that the hand control is out of reach for the user.

3.2 Setup

IMPORTANT!
– Unpacking and setup of the bed must be performed by a specialized dealer or technician as described in the service manual.
– Accessories, delivered with the bed, must be assembled by a specialized dealer or technician as described in the service manual or in the documentation, delivered with the accessory.

Scope of delivery

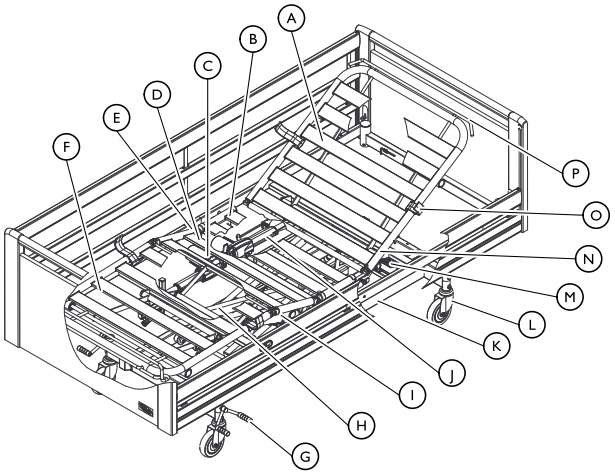
- Complete bed with castors, control box and mattress support

Accessories, like bed ends, side rails, lifting pole etc. are delivered apart.

Before taking the bed into use

1. Move the bed to its correct position.
2. Connect the bed to the mains.

3.3 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 brake	Ⓞ Mattress retainer
Ⓗ Shear arms	Ⓟ Mattress support extension

3.4 Operating side rails

WARNING!
Risk of entrapment or suffocation
There's a risk of entrapment or suffocation between mattress support, side rail and bed end.
– Always ensure correct fitting and tightening of the side rails.

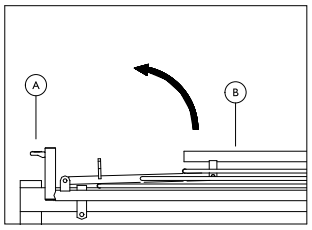
WARNING!
Risk of falling
– Never leave the user unattended in the bed with the side rail down.
– Make sure the side rail is in its highest position and properly locked while leaving the user unattended.

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

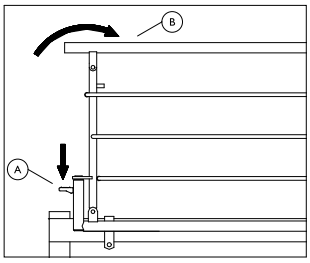
CAUTION!
Risk of Injury
There is a risk of entrapment or squeezing while operating the side rail.
– Pay attention to your fingers and body parts of the patient.
– Never force or drop the side rail while handling it.

3.4.1 Operating Scala 2 side rail

1.

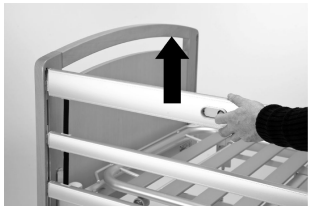


2.

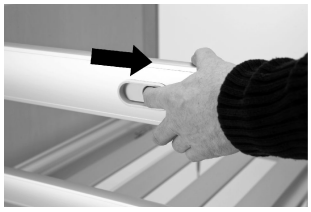


1. **Up:** Lift and pull the top bar Ⓑ of the side rail towards the end with the locking mechanism (release button) Ⓐ . Ensure, it is locked in place.
2. **Down:** Press the release button Ⓐ and push the top bar Ⓑ of the side rail away from the locking mechanism.

3.4.2 Britt V and Line side rails



Lock / Upper position
Pull up the top wooden side rail bar, until the locking pin locks with an audible click



Release
Lift the top wooden side rail bar and press the two locking rings together.

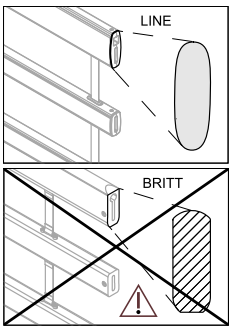
Down / Lower position
Lower the side rail.

Using a side rail height extender

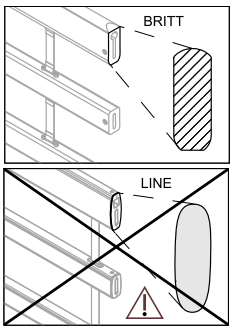
Line and Britt V side rails can be supplemented by a height extender. A side rail height extender increases the allowed mattress thickness by 15 cm.

WARNING!
Risk of injury or death
A misapplied side rail height extender could fall off. There's an increased risk for the user to fall out of the bed.
- Make sure that the side rail height extender is properly attached to the side rail. Refer to the user manual of the side rail height extender.
- Make sure to use the correct height extender for your side rail (the shape must match to the shape of the side rail. A label on the height extender determines to which side rail it belongs. See image below.

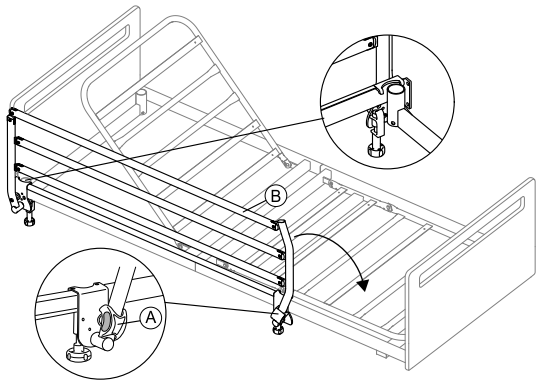
Height extender for LINE side rail:



Height extender for BRITT V side rail:



3.4.3 Verso II side rails



Folding down to open the side rail

1. Hold the top bar Ⓑ with one hand and pull the locking button Ⓐ with the other hand.
2. Pull the top bar sidewards and release the locking button.
3. Fold the side rail down to its lowest position.

Folding up to close the side rail

1. Pull the top bar Ⓑ and raise the side rail until it is properly engaged in the locking system.

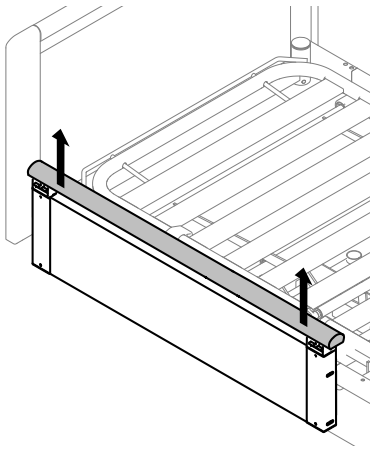
3.4.4 Operating the Torill side rail

WARNING!
Risk of falling
The middle position of the side rail does not provide protection against falling out of the bed.
- Only the highest position is intended to reduce the risk for the end-user of unintentionally falling out of the bed.
- The middle position must only be used to provide support when the end-user is moving in or out of the bed.

Raising the side rail

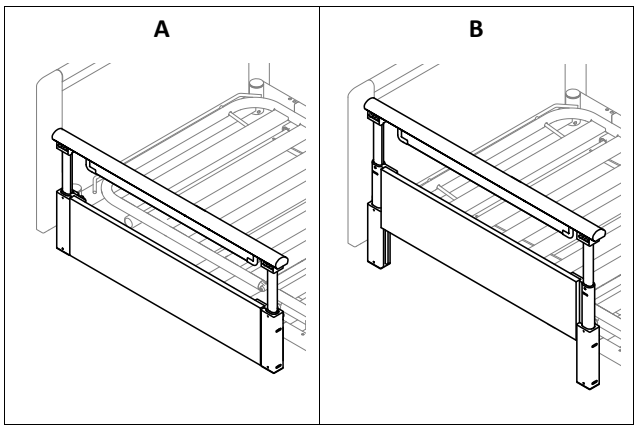
IMPORTANT!
Do not push the release buttons when moving the side rail up.

1.



Pull the top bar upwards with both hands near the left and right end.

2.



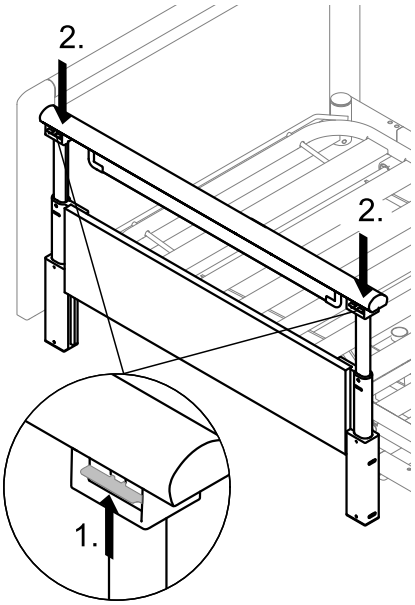
To raise the side rail to the middle position (A), stop pulling upwards after a first audible click.
To raise the side rail to the high position (B), pull upwards to the upper stop.

3. Push the top bar downwards to ensure it is properly locked.

If the side rail does not lock properly, perform the following steps to restore proper function.

- Pull up the top bar upwards to its stop, without pushing the release buttons.
- Lower the side rail to its lowest position as described below.

Lowering the side rail



1. Push up and hold the two release buttons.
2. To lower the side rail to the middle position, push the top bar downwards and let go the two release buttons after passing the upper locking position.
   To lower the side rail to the lowest position, push the top bar downwards to the lower stop, without releasing the two release buttons.

3.5 Hand control HB85 / HL85

Hand control HB85 / HL85 is equipped with five buttons to operate the electrical functions of the bed. The buttons on hand control HL85 can be locked.

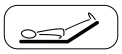
Sitting position

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

Backrest section

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

Leg section

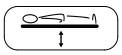


1. Up: press left side of the button (▲).
2. Down: press right side of the button (▼).

Thigh section

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

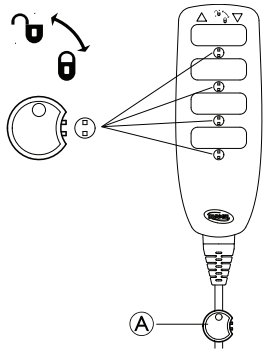
Height adjustment



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

3.5.1 Locking function

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



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

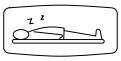
3.6 Soft Control

Function buttons

Press up to raise the bed.

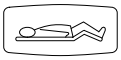
Press down to lower the bed.

Sitting position



Horizontal mattress support

”Out of bed” button (Raises the backrest and brings the thigh section to horizontal)



Thigh section

Leg section

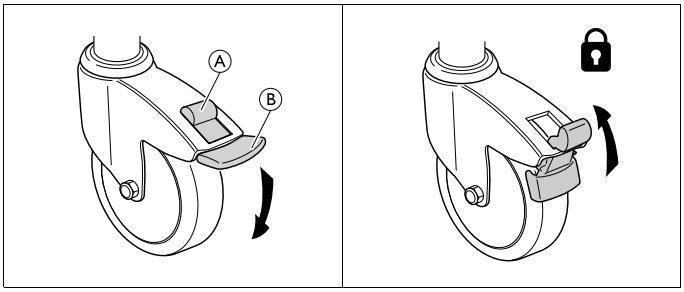
3.7 Castors and brakes

CAUTION!
Risk of trapping/squeezing
All brakes are foot-operated.
– Do not release the brake with the fingers.

CAUTION!
Risk of injury
User can fall, while entering or exiting the bed, if brakes are not locked.
– Always lock the brakes before the user is moving in or out of bed or when attending to the user.
– At least one castor at the head end and one castor in the foot end must be locked.

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

3.7.1 Castor brake

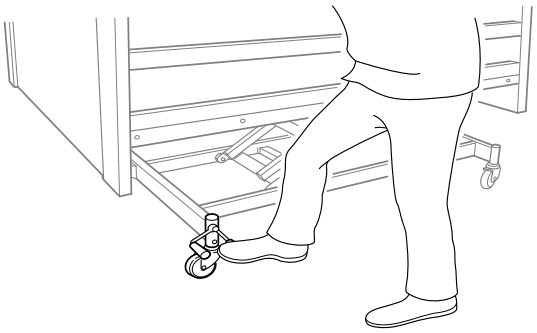


Locking the brake - Step on the outer pedal Ⓑ

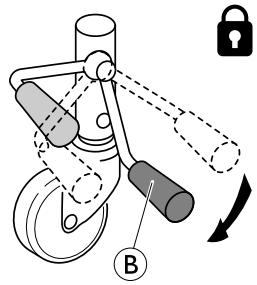
Unlocking the brake - Push up the release button Ⓐ

3.7.2 Central brake system

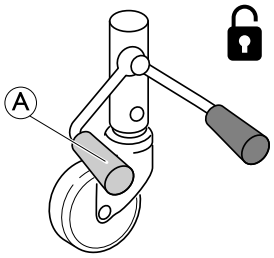
All the wheels are locked by locking one of the pedals.



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



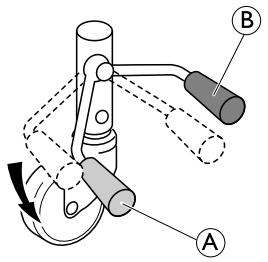
1. Lock the brakes:
   Step on the red pedalⒷ.



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

Steerable castor (optional)

The bed with central braking system may be equipped with a steerable castor operated with the central braking pedal.



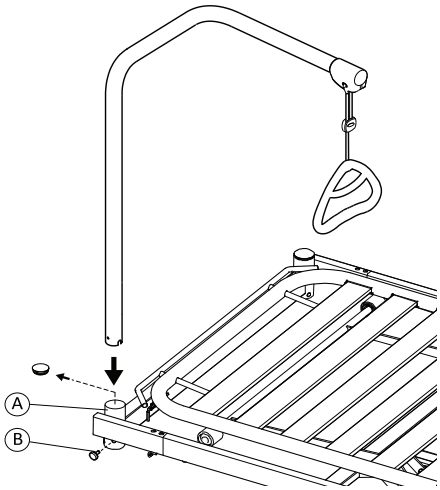
1. Activating the steering: When the brake is in neutral position, step on the green pedal Ⓐ .
2. Deactivating the steering: When steering is activated; step on the red pedal Ⓑ , until the brake is in neutral position.

3.8 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.

3.8.1 Place the lifting pole

The lifting pole can be placed either on the left or the right side of the head end of the bed.



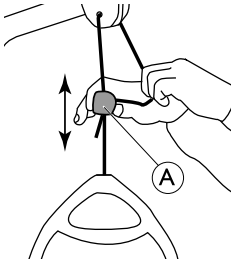
1. Remove the plastic plug from the lifting pole tube Ⓐ at the head end of the bed.
2. Insert the lifting pole into the lifting pole tube and fix it with the finger screw Ⓑ .

The swivel lifting pole must not be fixed with a finger screw, so that it can swing away to the side of the bed.

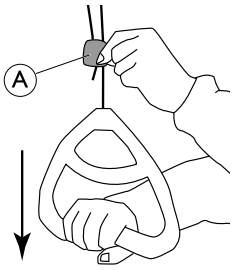
3.8.2 Adjusting the handle height

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

1.



2.



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

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

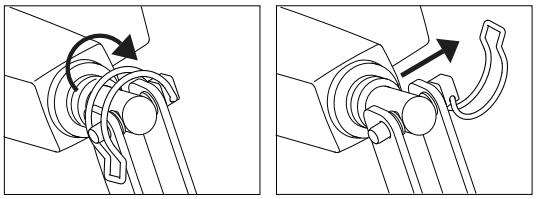
3.9 Emergency release of a mattress support section

In case of a power- or motor failure, an emergency release of the back, thigh or leg section could be necessary . An emergency release of the height adjustment is NOT possible.

CAUTION!
Risk of injury
– A minimum of two persons is required for an emergency release of a mattress support section.
– When releasing a mattress support section, it might lower fast. Do not reach under the mattress support while lowering it.

IMPORTANT!
– Before an emergency release of the mattress support, remove the plug from the mains socket.

1. Both persons hold the mattress section.
2. One of them locates the motor in question and pulls out the safety pin.



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

4 Maintenance

4.1 Cleaning and disinfection

IMPORTANT!
Wrong fluids or methods can harm or damage your 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.

4.1.1 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.

Cleaning methods

Electrical components

IMPORTANT!
Non-washable electronics can not withstand high temperatures.
– Do not wash or dry in higher temperatures than 40 °C.

Method: Wipe off with a wet cloth or soft brush.

Max. temperature: 40 °C

Solvent/chemicals: Water

Metal components

Method: Wipe off with a wet cloth or soft brush. Water may be pressurized, but not high pressure or steam.

Max. temperature: 40 °C

Solvent/chemicals: Household detergent or soap and water, 6-8 pH

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

Method: Wipe off with a wet cloth or soft brush.

Max. temperature: 40 °C

Solvent/chemicals: Household detergent or soap and water, 6-8 pH

Textiles (including upholstery and mattresses)

See attached label on each product.

4.1.2 Washable components

Washable components can be cleaned according to instructions in the section Washable components in the Bed Service Manual.

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.

IMPORTANT!
Accumulator back-up
– Old accumulators must be returned to *Invacare®* or recycled as car batteries

5.2 Reconditioning

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

- Inspection according to service plan
- Cleaning and disinfection

For detailed information about inspection, cleaning and disinfection, consult the Service manual for this product.

6 Troubleshooting

6.1 Troubleshooting

Symptom	Possible cause	Remedy
Bed section does not move	End of stroke reached	Operate opposite button
Full bed: No electric function does work	Bed not plugged in	Plug in mains cable
	Hand control not connected	Ensure hand control correctly connected to control unit.
	Hand control defective	Call dealer / technician to replace hand control
	Control unit defective	Call dealer / technician to replace control unit
	Cables entangled or pinched	Call dealer / technician to replace cables
Side rail does not open or close	Locking mechanism defective	Call dealer / technician to repair side rail

7 Technical data

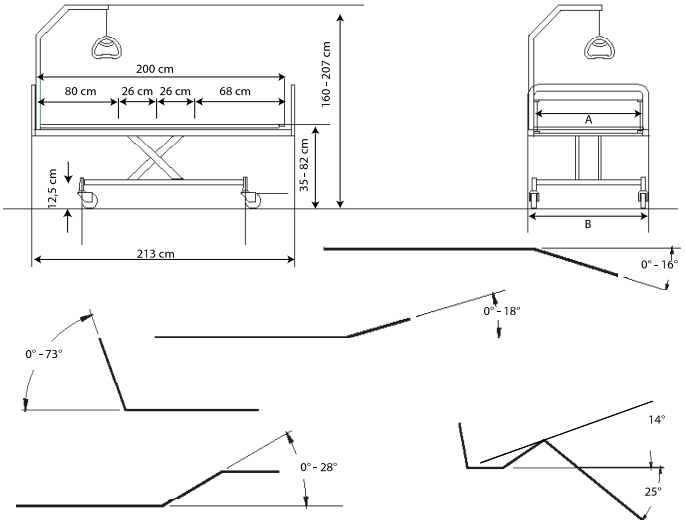
7.1 Dimensions bed

- All measurements are stated in cm.
- All angles are stated in degrees.
- All measurements and angles are stated without tolerances.

Length measures are stated for an non-extended bed. The bed can be extended respectively 5 and 10 cm´s in both ends.

Height measures are stated for a bed with castors of 10 cm diameter. With smaller or bigger castors, the heights differ accordingly.

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	95 / 100 / 115 / 130 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 ll	3/4 length collapsible steel side rail	156 cm x 40 cm	Mounted on the side tube. Release button in the foot section.
Torill short	Split side rail	76 cm x 56 cm	Mounted on the bed frame. Release buttons in both ends.
Torill long	Split side rail	98 cm x 56 cm	Mounted on the bed frame. Release buttons in both ends.

7.3 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 ll	18	10	200
Torill	16	12	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

7.4 Environmental conditions

	Storage and Transportation	Operation
Temperature	-10°C to +50°C	+5°C to +40°C
Relative humidity	**Non-washable version**: 20% to 75%	
	Washable version: 20% to 90% at 30°C – not condensing	
Atmospheric pressure	**Non-washable version**: 800 hPa to 1060 hPa	
	Washable version: 700 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.

7.5 Electrical system

	Non-washable version	Washable version
Voltage supply	Uin 230 Voltage, AC, 50–60 Hz (AC = Alternating current)	Uin 100–240 Voltage, AC, 50–60 Hz (AC = Alternating current)
Maximum current input	Iin max. 1,5 Ampere	Iin max. 2.5 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	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. **IPx4** - The system is protected against water splashed from any direction. **IPx6** - The system is protected against water projected from any direction (not high pressure). **IPx6w** - The system is protected against high pressurized water and steam projected from any direction.	

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

7.6 Electromagnetic compliance (EMC)

Guidance and manufacturer´s declaration – electromagnetic emission

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

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

Guidance and manufacturer´s declaration – electromagnetic immunity

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

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment — guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	± 1 kV differential mode ± 2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5% U_T (>95% dip in U_T) for 0,5 cycle 40% U_T (60% dip in U_T)for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (>95% dip in U_T) for 5 sec	< 5% U_T (>95% dip in U_T) for 0,5 cycle 40% U_T (60% dip in U_T)for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (>95% dip in U_T) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the medical bed requires continued operation during power mains interruptions, it is recommended that the medical bed be powered from an un-interruptible power supply or a battery. U_T is the a. c. mains voltage prior to application of the test level.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3 V 3 V/m	3 V 3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the medical bed including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance: $d = [\frac{3,5}{V_1}]\sqrt{P}$ $d = [\frac{3,5}{E_1}]\sqrt{P}$ 80 MHz to 800 MHz $d = [\frac{7}{E_1}]\sqrt{P}$ 800 MHz to 2,5 GHz 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] 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] Interference may occur in the vicinity of equipment marked with the following symbol:

[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 $d = [\frac{3,5}{V_1}]\sqrt{P}$	**80 MHz to 800 MHz** $d = [\frac{3,5}{E_1}]\sqrt{P}$	**800 MHz to 2,5 GHz** $d = [\frac{7}{E_1}]\sqrt{P}$
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.

Notes

Notes

Invacare Sales Companies

Ireland:
Invacare Ireland Ltd,
Unit 5 Seatown Business Campus
Seatown Road, Swords, County Dublin
Tel : (353) 1 810 7084
Fax: (353) 1 810 7085
ireland@invacare.com
www.invacare.ie

United Kingdom:
Invacare Limited
Pencoed Technology Park,
Pencoed
Bridgend CF35 5AQ
Tel: (44) (0) 1656 776 222
Fax: (44) (0) 1656 776 220
uk@invacare.com
www.invacare.co.uk

Manufacturer:

Invacare Rea AB
Växjövägen 303
SE-343 71 Diö
Sweden

1567446-F 2017-05-08

Making Life's Experiences Possible®

Yes, you can.