

Invacare® Octave®



en Bed
User Manual



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



Yes, you can.®

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1 General

1.1 Introduction

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

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

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

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

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

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

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

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

1.1.1 Symbols in this Document

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



WARNING

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



CAUTION

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



IMPORTANT

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



Tips and Recommendations

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

1.2 Service Life

The expected service life of this product is seven years when used daily and in accordance with the safety instructions,

maintenance intervals and correct use, stated in this manual. The effective service life can vary according to frequency and intensity of use.

1.3 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.

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

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

We only use REACH compliant materials and components.

We comply with the current environmental legislations WEEE and RoHS.

1.4.1 Product-specific standards

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

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

1.5 Warranty Information

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

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

1.6 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
- Unauthorised modifications and/or use of unsuitable spare parts

2 Safety

2.1 General safety information

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



WARNING!

Risk of injury or damage

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



WARNING!

Risk of entrapment / suffocation

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

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



WARNING!

Risk of slipping through the openings

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

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



WARNING!

Risk of injury or damage

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



WARNING!

Risk of tripping, entanglement or strangulation

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



WARNING!

Risk of injury or damage

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



WARNING!

Risk of injury or damage

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



CAUTION!

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



CAUTION!

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

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

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

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

**CAUTION!**

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

- Pay attention to your fingers.

**IMPORTANT!**

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

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

**IMPORTANT!**

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

- Keep the product clean.

2.2 Mattresses

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

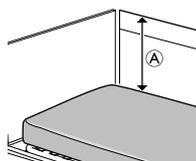
To get the highest possible safety level, when using side rails on the bed, the minimum and maximum measures for mattresses, must be respected.

- For correct mattress measures see mattress table in chapter 8 *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 8 *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 \textcircled{A} between the top of the mattress and the edge of the side rail/bed end, is too short. See image above.

- Always keep a minimum distance \textcircled{A} of 22 cm.

- Follow the maximum mattress height in combination with the side rail as stated in the mattress table in chapter 8 *Technical Data*, page 16.

2.3 Safety information on electromagnetic interference

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

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

- Only use original cables, accessories and spare parts, to not increase electromagnetic emission or reduce electromagnetic immunity of this product.
- Do not use portable radio frequency (RF) communications equipment closer than 30 cm to any part of this product (including cables).
- Do not use this product near active high-frequency surgical equipment and the RF shielded room of a system for magnetic resonance imaging, where the intensity of electromagnetic disturbances is high.
- If disturbances occur, increase the distance between this product and the other equipment or switch it off.
- Refer to the detailed information and follow the guidance in chapter 9 *Electromagnetic compatibility (EMC)*, page 17.

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

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

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

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

2.4 Labels and symbols on the product

2.4.1 Identification Label

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

SN	Serial number
REF	Reference number
	Manufacturer
	Date of manufacture
MD	Medical device
	Max. user weight
	Max. safe working load
	CLASS II equipment
	Type B applied part
	WEEE conform
CE	European Conformity

Abbreviations for technical data:

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

For more information about technical data, refer to 8 *Technical Data*, page 16.

2.4.2 Other Labels

Read the user manual before using this product and follow all instructions for safety and use.	
	Definition of min. weight, min. height and min. body mass index of an adult user. See 3.1 <i>Intended Use</i> , page 8 .
	Refer to user documentation for the correct mattress measures. See 8 <i>Technical Data</i> , page 16.
	Total weight of the product with the maximum safe working load applied
	Temperature limit
	Humidity limitation
	Atmospheric pressure limitation
	Transport and storage conditions
	Operation conditions

3 Product Overview

3.1 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.

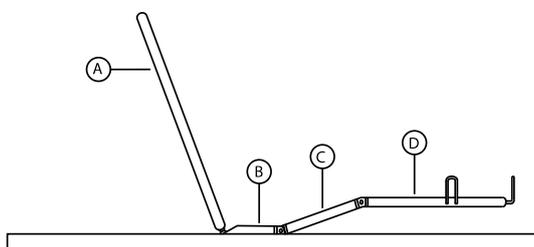
Invacare accepts no liability for any use, change or assembly of the product, other than stated in this user manual.

3.1.1 Intended Operator

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

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

3.2 Main parts of bed



Ⓐ	Backrest
Ⓑ	Seat section
Ⓒ	Thigh section
Ⓓ	Leg section

3.3 Accessories



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

Side rails

Side rails are intended to be operated by a person standing beside the bed and to reduce the risk for the user of unintentionally falling out of the bed, when locked in their uppermost position.

- Britt V – Collapsible full length wood side rail (standard, 10 cm extended or 20 cm extended)
- Line – Collapsible full length aluminum side rail (standard or extendable)
- Height extenders for full length side rails – 15 cm height increase (for Britt or for Line)

For more details on side rails see *8 Technical Data, page 16*

Bed ends & side panels

Bed ends are intended to provide an esthetic and physical barrier at the head end and the foot end of the bed. Bed ends with guideways are required to mount full length side rails.

- Irene – bed ends with guideways for full length side rails

For more details on bed ends see *8 Technical Data, page 16*

Repositioning aids

Repositioning aids are intended to provide support to the user when getting in or out of the bed (support handles) or when changing position inside the bed (support handles and lifting pole).

- Fixed support handle – fixed handle to be mounted on the side tube of the backrest or leg section (40 x 30 cm)
- Lifting pole – to be mounted in the middle of the head end of the bed (fixed or swivelling)

Other

- Transport Trolley – to transporting and storing the assembled bed
- Mattress support extension – 10 cm extension to be mounted on the foot end of the bed

4 Operating the bed

4.1 General Safety Information



WARNING!

Risk of personal injury and damage to property.

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



WARNING!

Risk of injury

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

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

4.1.1 Mattress retainers



WARNING!

Risk of injury

Without properly installed mattress retainers, the mattress can slip sideways and cause the user to fall out of the bed.

- Never use the bed without mattress retainers.
- Always make sure the mattress retainers are properly installed and facing upwards.
- Only use the original mattress retainers.

4.2 Setup



IMPORTANT!

- Unpacking and setup of the bed must be performed by a qualified technician as described in the service manual.
- Accessories, delivered with the bed, must be assembled by a qualified 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.

4.3 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



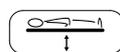
1. Up: press left side of the button (▲).
2. Down: press right side of the button (▼).

Thigh section



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

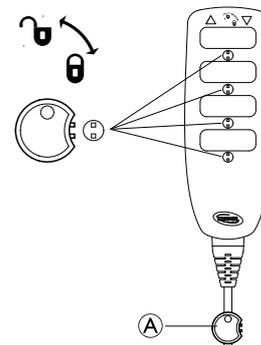
Height adjustment



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

4.3.1 Locking function

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



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

4.4 Operating 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

If it has been decided that the user needs side rails:

- 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!
Risk of Injury

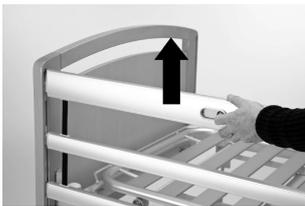
If the side rail is not locked properly it can fall down.
– Pull/push the top bar of the side rail to ensure that the locking system is properly engaged.



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.

4.4.1 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

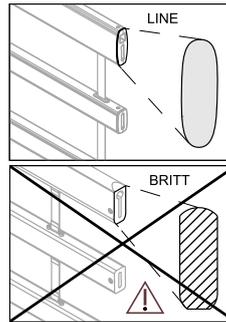
Line and Britt V side rails can be supplemented by a height extender. A side rail height extender increases the allowed mattress thickness by 15 cm.



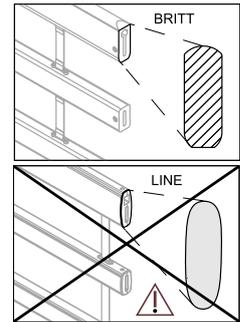
WARNING!
Risk of injury or death

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:



4.5 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.



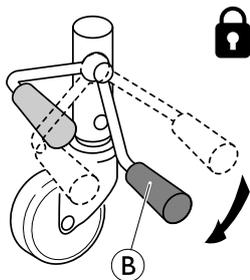
Castors might make marks on different types of absorbing floor surfaces - such as untreated or badly treated floors. To prevent marks, *Invacare®* recommends to place a suitable kind of protection between the castors and the floor.

4.5.1 Central brake system

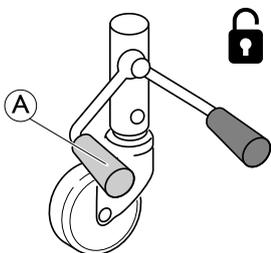
All the wheels are locked by locking one of the pedals.



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



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



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

4.6 Lifting pole



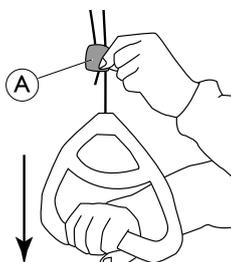
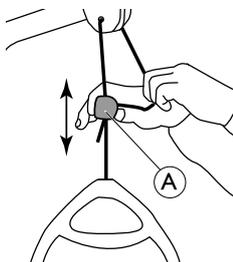
WARNING! Risk of injury

- Do not exceed the maximum load of the lifting pole; 85 kg.

4.6.1 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 **A** upwards or downwards until the handle reaches the preferred height.
2. Lock the handle by pressing back the cord in the lock **A** and pull the handle downwards.



IMPORTANT!

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

4.7 Emergency positions

In case of a medical emergency, it might be required to bring all or certain mattress support sections into a flattened position - e.g. a flattened back section for cardiopulmonary resuscitation (CPR).

To bring a mattress support section into a flattened position,

- use the corresponding function on the hand control
- OR
- in case of power failure or urgent need for action, use the manual emergency release and lower the mattress support section.

4.7.1 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

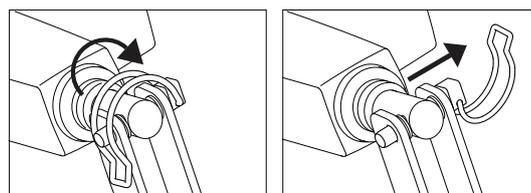
- A minimum of two persons is required for an emergency release of a mattress support section.
- When releasing a mattress support section, it might lower fast. Do not reach under the mattress support while lowering it.



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.

5 Maintenance

5.1 General maintenance information



CAUTION!

Risk of injury or damage

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

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

Further maintenance and inspection procedures, to be performed by a qualified technician, are described in the service manual of this product. Service manuals can be obtained from Invacare.

5.1.1 Service interval

We strongly recommend a full service to be performed at least every second year and a yearly check of the actuators.

Contact your Invacare provider or in-house service department for service.

5.2 Daily inspections



WARNING!

Risk of injury or damage

- Damaged or worn parts can affect the safety of the product.
- The product should be checked each time it is used.
 - Do not use the product if damage is found or you question the safety of any part of the product. Contact your Invacare provider immediately and ensure the product is not used until repairs are made.

Daily Inspection Checklist

- Visually inspect the bed. Check all parts for external damage or wear.
- Check all hardware, attachment points, stressed parts and any pivot points for signs of wear, cracking, fraying, deformation or deterioration.
- Check the hand control and all actuators for smooth operation.

5.3 Cleaning and Disinfection

5.3.1 General safety information



CAUTION!

Risk of contamination

- Take precautions for yourself and use appropriate protective equipment.



CAUTION!

Risk of electric shock and product damage

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



IMPORTANT!

Wrong fluids or methods can harm or damage the product.

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



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

5.3.2 Cleaning Intervals



IMPORTANT!

Regular cleaning and disinfection enhances smooth operation, increases the service life and prevents contamination.

- Clean and disinfect the product
- regularly while it is in use,
 - before and after any service procedure,
 - when it has been in contact with any body fluids,
 - before using it for a new user.

5.3.3 Cleaning Instructions



IMPORTANT!

- The product does not tolerate cleaning in automatic washing systems, with high-pressure cleaning equipment or steam.

Electrical components

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

Metal components

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

 Metal components may also be cleaned with pressurized water, but not high pressure or steam.

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

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

Textiles (including upholstery and mattresses)

- See attached label on each product.

5.3.4 Disinfection Instructions

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

In Domestic Care

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

Disinfectant: Ordinary household disinfectant.

Drying: Allow the product to air-dry.

In Clinical and Long Term Care

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

6 After Use

6.1 Disposal

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

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

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

6.2 Reconditioning

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

- Inspection
- Cleaning and disinfection

For detailed information, see *5 Maintenance, page 12* and the service manual for this product.

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

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

7 Troubleshooting

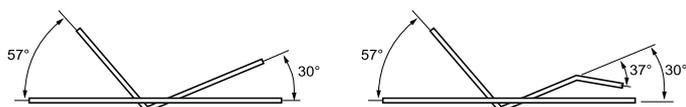
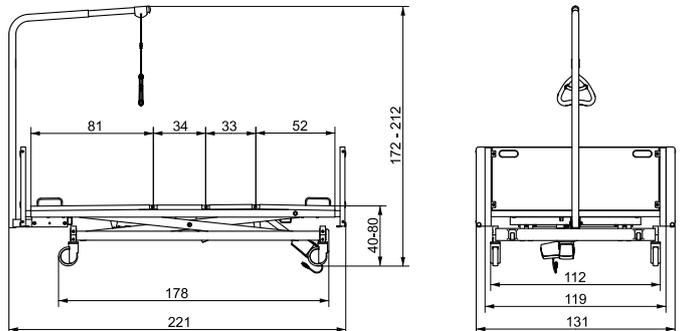
7.1 Troubleshooting

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

8 Technical Data

8.1 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.



8.2 Weights

Max. User Weight (provided that the weight of the mattress + accessories do not exceed 35 kg)	350 kg
Safe Working Load (weight including mattress + accessories)	385 kg

Mattress support	72 kg
Base incl. shear arm	71 kg
Bed end fitting	5 kg/pc
Wooden bed end	8.5 kg/pc
Complete bed without accessories	170 kg
Wooden trims (2 pcs)	2 kg
Wooden side rail Britt V	7.5 kg/pc
Lifting pole	10 kg
Support handle	2 kg
Mattress (approximately)	8 kg

8.3 Allowed mattress sizes

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

Bed side rails	Allowed mattress sizes		
	Min height	Max height	Min length
Line/Line Extendable	15 cm	21 cm	200 cm
Britt V	15 cm	21 cm	200 cm

Allowed mattress width (for all side rails)

Bed width	Allowed mattress width
130 cm	116 – 120 cm

8.4 Environmental conditions

	Storage and Transportation	Operation
Temperature	-10°C to +50°C	+5°C to +40°C
Relative humidity	20% to 90% at 30°C - not condensing	
Atmospheric pressure	800 hPa to 1060 hPa	

- i** Allow the product to reach operation temperature before usage:
- Warming up from minimum storage temperature might take up to 24 hours.
 - Cooling down from maximum storage temperature might take up to 24 hours.

8.5 Electrical system

Voltage supply	Uin 230 Voltage, AC, 50 Hz (AC = Alternating current)
Maximum current input	Iin max.3 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	48 dB (A)
Degree of protection	The control unit, external power supply, motors and hand controls are protected according to IPx4 or IPx6 (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).

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

9 Electromagnetic compatibility (EMC)

9.1 General EMC information

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

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

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

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

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

9.2 Electromagnetic emission

Guidance and manufacturer's declaration

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

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

9.3 Electromagnetic Immunity

Guidance and manufacturer's declaration

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

Immunity test	Test / Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines; 100 kHz repetition frequency ± 1 kV for input / output lines; 100 kHz repetition frequency	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line to line ± 2 kV line to earth	Mains power quality should be that of a typical commercial or hospital environment.

Immunity test	Test / Compliance level	Electromagnetic environment – guidance
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 0% U_T for 0,5 cycle at 45° steps 0% U_T for 1 cycles 70% U_T for 25 / 30 cycles < 5% U_T for 250 / 300 cycles	Mains power quality should be that of a typical commercial or hospital environment. If the user of this product requires continued operation during power mains interruptions, it is recommended that the product is powered from an un-interruptible power supply or a battery. U_T is the a. c. mains voltage prior to application of the test level.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Conducted RF IEC 61000-4-6	3 V 150 kHz to 80 Mhz 6 V in ISM & amateur radio bands	Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which this product is used exceeds the applicable RF compliance level above, this product should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating this product. Interference may occur in the vicinity of equipment marked with the following symbol: 
Radiated RF IEC 61000-4-3	10 V/m 80 Mhz to 2,7 GHz 385 MHz - 5785 MHz test specifications for immunity to RF wireless communication equipment refer to table 9 of IEC 60601-1-2:2014	Portable and mobile RF communications equipment should be used no closer than 30 cm to any part of this product including cables.

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

9.4 Test specifications for immunity to RF wireless communications equipment

IEC 60601-1-2:2014 — Table 9

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

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

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

^{a)} For some services, only the uplink frequencies are included.

^{b)} The carrier shall be modulated using a 50 % duty cycle square wave signal.

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

Invacare Distributors

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



Invacare Rea AB
Växjövägen 303
SE-343 71 Diö
Sweden

