



Yes, you can.<sup>®</sup>

*Invacare*<sup>®</sup> **Octave**<sup>™</sup>

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*User Manual (EN)*



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## I. General information

This manual must be given to the user of the product. Before using this product, read this manual and save for future reference.

Please note that there may be sections in this User Manual, which are not relevant for your bed.

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

Metal side rails and U-profile bed ends may be disassembled without the use of any tools.

### I.1 Intended use

- The bed is designed for use especially for home care.
- The bed is designed for patients over the age of 12 years. 150 cm and longer.
- The bed is a nursing bed with modular structure.
- Max patient weight: 350 kg (provided the equipment - bed ends, side rails, support handles, lifting pole and mattress have a total weight of max 35 kg).
- Safe Working Load: Max 385 kg (Patient + accessories).
- The Octave™ bed is defined to be used according to;  
**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.

In order to optimise the patient's comfort *Invacare*® recommends using a 15 cm mattress. (see order numbers in section 6 "Part numbers for accessories").



### I.2 Certification

- **Octave™** is marked in accordance with directive 93/42/EEC concerning Medical Devices.
- **Octave™** is tested and approved in accordance with EN 60601-2-52 of TÜV Product Service in Germany.
- **Octave™** has undergone a risk analysis according to EN 14971.
- The motors and control unit of the bed are approved according to IEC 60601-1:2005 3:rd edition.

The hand control, control unit and motors are protected according to IPX6 or IPX4.

A lock cam must be used on the control unit - if not, *Invacare*® can not guarantee the IP protection.

All service work described in chapter 7 may only be performed by personnel who have been trained or instructed by *Invacare*® service course.

If the functions of the bed change, please send the bed for a check-up according to the maintenance chart in chapter 7.

*Invacare*® is certified according to EN ISO 9001 and ISO 13485 and ensures compliance by 3:rd party. Throughout the entire production process our materials/products are quality controlled by the operators. Additionally, a final test is carried out prior to packaging and shipping.

The operator carrying out the final test, which includes a check of all moveable parts, motors and castors, issues a QA number on the product thereby confirming its quality.

QA XXX

If the product does not correspond to the quality demands of *Invacare*®, it will be discarded.

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

## 1.3 Labels and symbols

### Symbols in this user manual:



#### **WARNING**

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



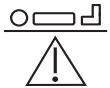
#### **INFORMATION**

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.

### Labels / symbols on the product:



Maximum user weight



Safe working load (SWL) (Patient + mattress + side rails + lifting pole + other equipment).



#### **INSTRUCTION**

Reference to the user manual.

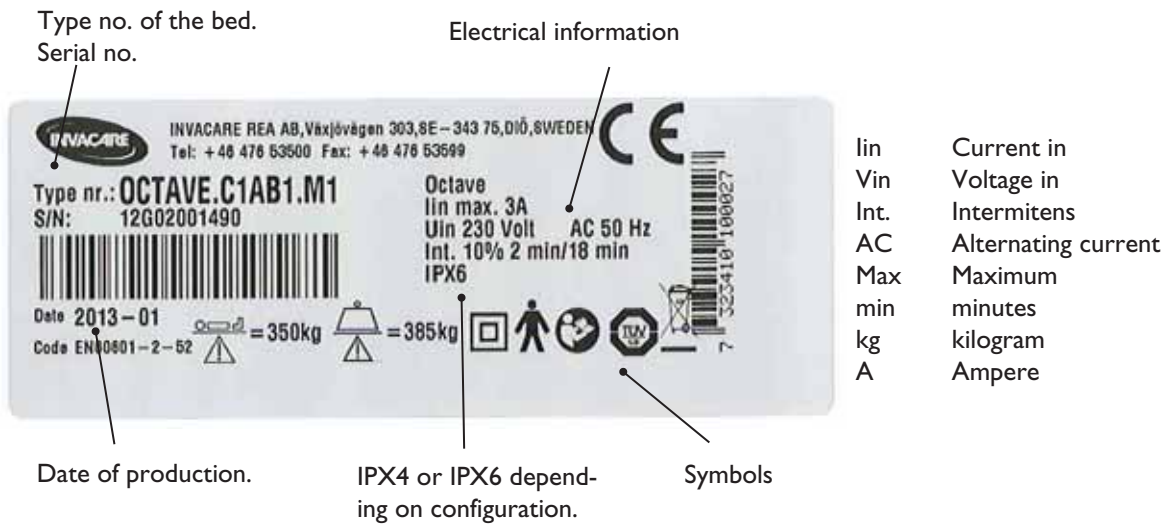


Applied Part, Type B, complying with the specified requirements for protection against electrical shock according to IEC60601-1. (An applied part is a part of the medical equipment which is designed to, or are likely to, come into physical contact with the patient.

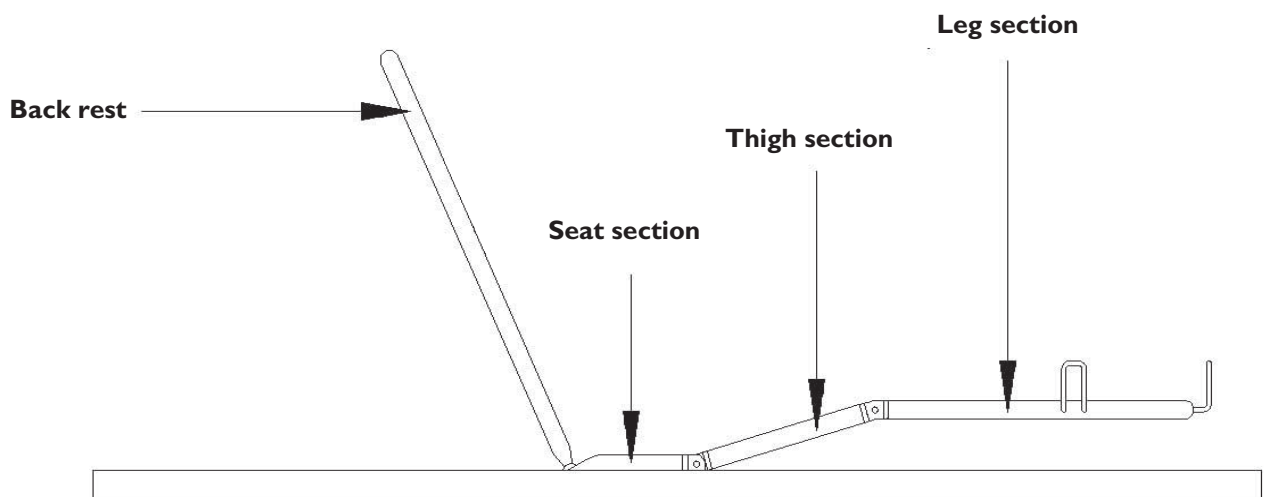


The product should be reused where possible

To identify the product please look at the product label:



#### I.4 Description of the main parts in the mattress support:



## 1.5 Safety and warnings



The bed fulfils all requirements regarding maximum distances. However, if the bed is used for the care of patients with a small body dimensions, it must be especially noted that there is a risk of such a patient slipping through the openings between the side rails or through the opening between the side rail and the mattress support.



The bed must not be used by patients under 12 years of age, or by patients with body size equivalent to an average 12-year-old or smaller.



The bed, in combination with side rails, must not be used for persons under 45 kg or under 150 cm's height, or for persons that are restless (spasms) or confused, unless a professional risk assessment has taken place and been accepted, or a correctly installed safety cover on the side rails are used.



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



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 the blood vessels (intravascularly), provided that following are respected:

- The medical bed should be equipped with means for potential equalization connection (See the symbol in chapter "Electrical data").
- The medical electrical equipment should not be fixed on the bed's metallic accessories such as side rails, lifting pole, drip rod, bed ends ect.

In addition, the medical electrical equipment power supply cord should be kept clear of the accessories or any other moving part of the bed.



*Invacare*® accepts no liability for any use, change or assembly of the product other than as stated in this User Manual. If the bed shows any signs of damage upon delivery, please see the terms of delivery. Accessories not mentioned in this manual must not be used.



When using side rails and the according safety cover, it is essential to ensure correct fitting - **otherwise there is danger of entrapment / suffocation between mattress support, side rail and bed end!**



Do not place any objects underneath bed.

If the functions of the bed change, send the bed immediately for a check-up according to the maintenance chart..

## 1.6 Warranty

The warranty covers all material and production defects for 2 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 damage or damaged caused by improper use of the bed.

## 1.7 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.

## 2. Operating the Octave™



Disconnect the plug from the mains before moving the bed. The cable must be kept clear of the floor and the castors during transport. Make sure that the mains cable cannot be jammed or in any other way damaged when the bed is used.



Always leave the bed in the lowest position. Otherwise there is a risk of entrapment due to accidental lowering of the mattress support. A person can be seriously injured under the bed during height adjustment.



There is a risk of entrapment of fingers on assembly and operation of the metal side rail.



The bed's castors must be locked whilst nursing a patient in bed or when using any positioning function. The bed must be locked when the patient moving in and out of the bed.

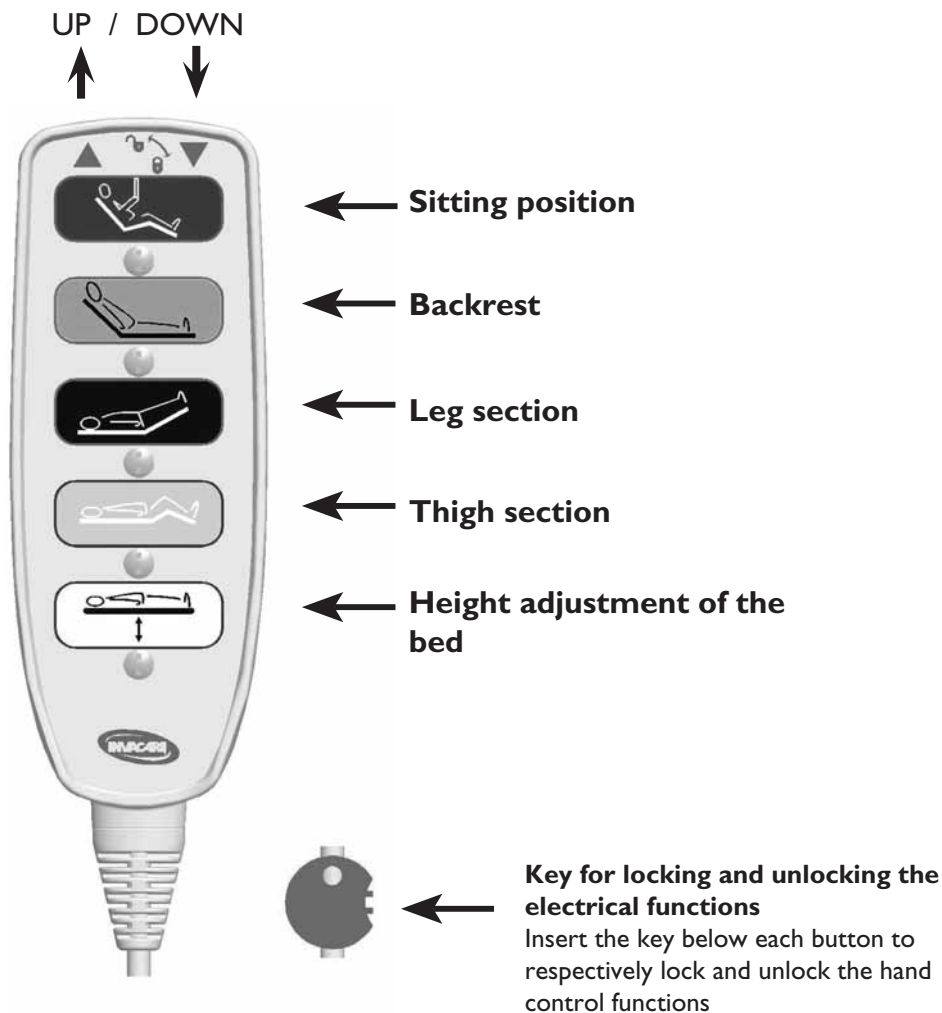


The bed's electrical equipment must not be dismantled or combined with other electrical equipment.

## 2.1 Operating the *Invacare*<sup>®</sup> *Octave*<sup>™</sup> with the hand control

To operate the mattress support, the bed is equipped with one of the following types of hand controls:

- HB 80 or
- HL 80 with integrated ACP function (key)



There is a risk of entrapment whilst operating the bed.



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



## 2.2 Using the central brake

**Braking the bed:** If the brake is in neutral, step on the red pedal.

**Releasing the brake:** Step on the green pedal, until the brake is in the neutral position.



The bed's castors must be locked whilst nursing a patient in bed or when using any positioning function. The bed must be locked when the patient moving in and out of the bed. The bed must not be transported when occupied.

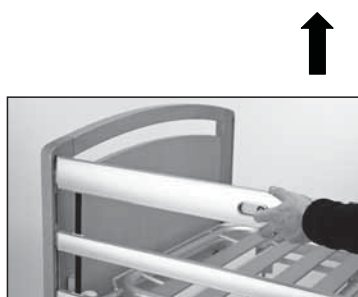
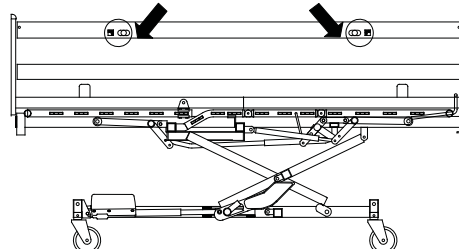
The castors might under special conditions be difficult to manoeuvre due to the floor covering being untreated or in poor condition. In matters of doubt, *Invacare*<sup>®</sup> recommends the placement of a suitable type of protection between the castors and the floor.

## 2.3 Operation of the BRITT V wooden side rail/Line Alu

**UP:** Pull up the top wooden bar, until the locking pin locks with an audible click.

**DOWN:** Lift the top wooden bar and press the two locking pins together. Lower the side rail.

Locking pins



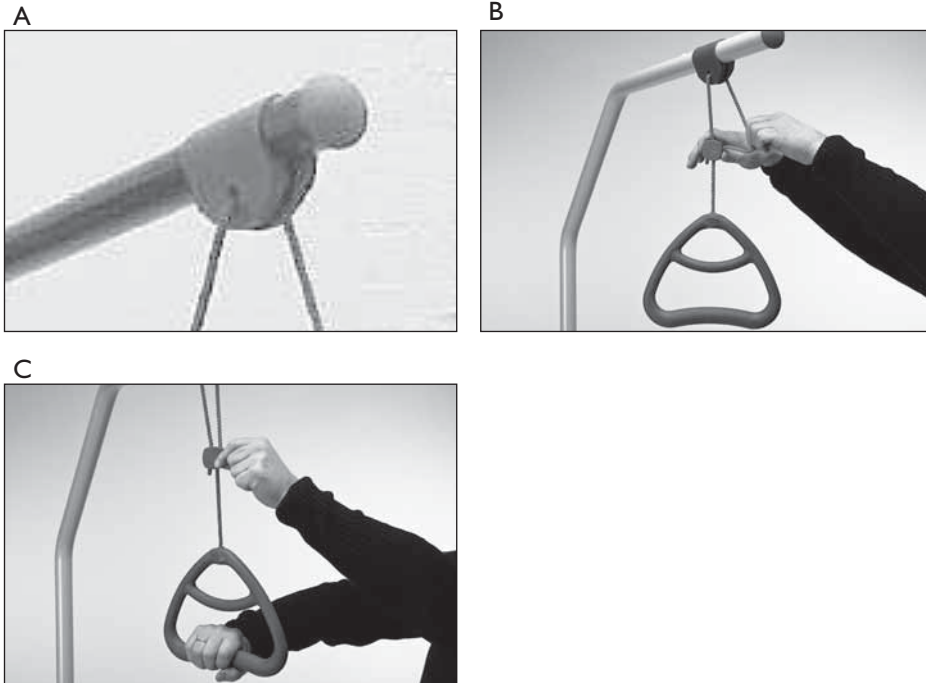
There is a risk of entrapment on assembly and operation of the side rails.



Britt V wooden side rails//Line Alu conforms to the European standard EN60601-2-52. For those however, with a small body size, there will be a risk of entrapment.

## 2.4 Adjusting the height of the lifting pole

Loosen the cord as shown in fig. A. The lifting handle can now be adjusted to the desired height. Press the cord together as shown in fig. B and check that the cord is locked in the cord lock by pulling the handle as shown in figure C.

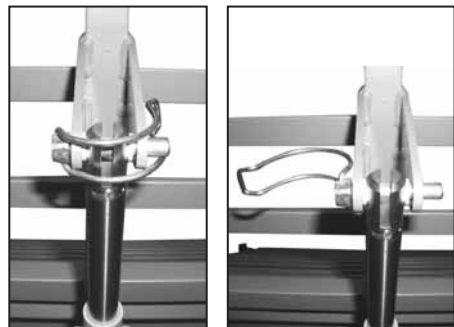


## 2.5 Emergency release of the mattress support parts

An emergency release of the mattress support is necessary in the case of e.g. a power or motor failure.

An emergency release of the height adjustment is **NOT** possible!

- Remove the plug from the mains before the emergency release of the mattress support.
- In an emergency case the mattress sections are released by pulling out the cotter pin from the motor in question.



A minimum of 2 people are required to release a mattress section. Both people should hold the mattress section in locked position. One person pulls out the cotter pin. Both slowly lower the mattress section until it is completely down.



If the mattress support is removed, the mattress will not follow the bed's movements when adjusting the head/leg sections. It is also possible that the mattress slips sideways which could cause the user to fall to the ground or get trapped in the bed.

### 3. Receiving *Invacare*<sup>®</sup> *Octave*<sup>™</sup>



Due to condensation, the bed may not be used until it has reached room temperature (10-50° C).



Check whether the bed shows any signs of damage. If the bed is damaged, see terms of delivery.



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

The bed's - mattress support and base frame - will be delivered assembled on a trolley.

By ordering a standard bed the following parts will be delivered:

- Assembled bed on trolley.
- Fitting (2 pcs.) incl. mounting screws (8 pcs.).
- Wooden-bed ends (2 pcs.).

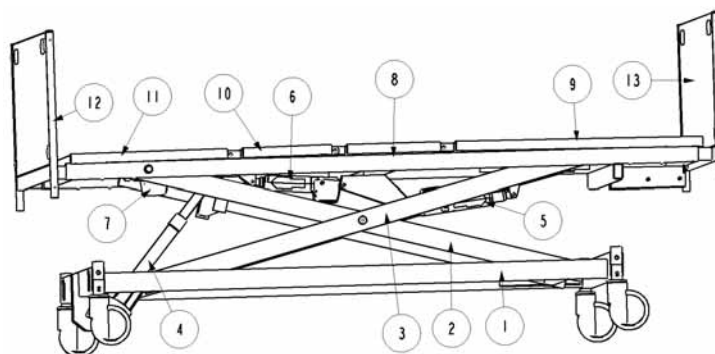


The following can be delivered as an option: (see chapter 8 for order no.).

- BRITT wooden side rails/Line Alu (a pair), only for L=200 cm (standard in the UK).
- Wooden bar (4 pcs.) incl. mounting screws (8 pcs.).
- Support handle.
- Lifting pole incl. mounting screws (2 pcs.).
- Mattress support extension 10 cm. Can be used in head- and bed end.

#### 3.1 Parts of a standard bed

1. Base with central braking system.
2. Inner shear arm.
3. Outer shear arm.
4. Motor, hi/low.
5. Motor for back rest.
6. Motor - thigh section (with control unit).
7. Motor - leg section
8. Top frame incl. seat section.
9. Back rest.
10. Thigh section
11. Leg section
12. Fitting
13. Wooden - bed ends.



### 3.2 Mounting the *Invacare*® *Octave*™

#### Receiving the bed on the trolley: (2 persons required)

- a) Apply all 4 braked castors on the trolley.
- b) Apply all 4 braked castors on the bed.
- c) Remove the delivered equipment from the trolley.
- d) Lower the bed and the trolley, into horizontal position standing on the bed castors.
- e) Dismount the trolley from the bed.



When lowering the bed into horizontal position, 2 persons are required.

Connect *Invacare*® *Octave*™ to the mains.



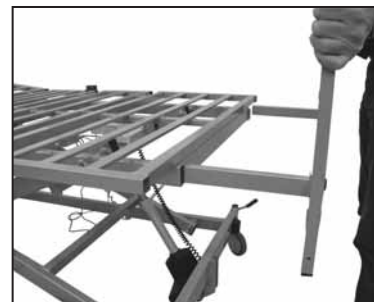
The connection to the socket outlet must always be accessible in case an electric error should occur

#### For ergonomic working position:

Raise the bed (hi/low) to approx. 60 cm above floor level.  
(See section 2 “Operation of the *Invacare*® *Octave*™”).

#### 1. Assembling the fittings

- a) Push bed end through the pipes on the top frame.  
(Visible insert pipe is about 4.5 cm).
- b) Tighten the bed end with enclosed screws.



#### 2. Mounting the wooden bed end

- a) Slide the wooden bed end into the U-profile.



### 3.3 Mounting wooden adapters and wooden side rail (accessories)

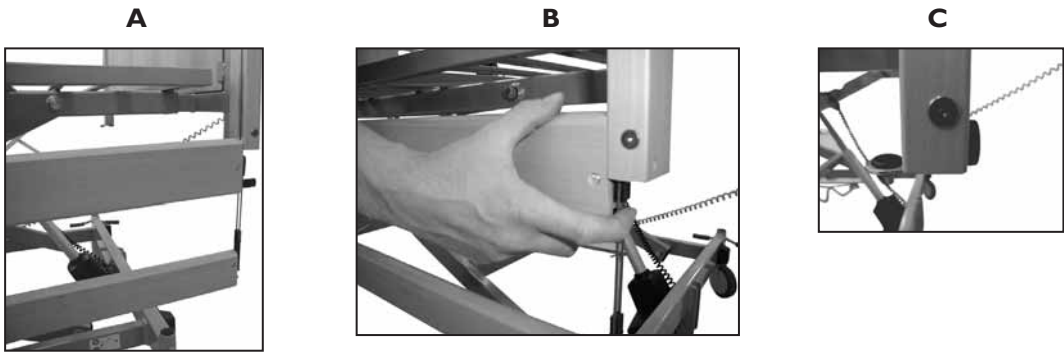
#### Mounting wooden trim

- a) Remove the exposure on the bed end.
- b) Mount the wooden trim with the enclosed mounting screws.
- c) Make sure that all 4 wooden trims have been correctly mounted/tightened.



### 3.4 Mounting the Britt wooden side rail/Line Alu (accessories)

1. Raise the bed about one third.
2. Mount one end at a time. Lift the upper bar and guide the slide bracket to the bed end rail (A).
3. Press the locking pin of the side rail with a finger (B).
4. Guide the side rail to the upper position. There will be an audible click when it locks.
5. Mount the end stop brackets (C).



### 3.5 Mounting support handle (accessories)


- a) Mount the support handles on the tube of either the back or leg sections.

**Note!** Do not mount the support handle on the seat or thigh section.



- b) Tighten the finger screws.

**Note!** The distance between 2 support handles or support handle and bed end **must** be more than 32 cm.



Placing support handles in wrong positions can cause serious damage or suffocation, if body parts are trapped between support handles or between a support handle and bed end.

### 3.6 Mounting the lifting pole (accessories)

- a) Push the lifting pole bottom piece in the fitting under the back rest.
- b) Mount the enclosed screws and nuts and tighten them.



### 3.7 Mounting the mattress support extension (10 cm)

**Note!** It is not possible to use the wooden side rail in combination with the mattress support extension. Therefore dismount the wooden side rails first.

The mattress support extension can be mounted in either the head- or foot end or in both ends.

- a) Loosen screws from the bed end.
- b) Remove the bed end.
- c) Remove the ferrules in the tube ends for the mattress support and mount the extension.
- d) Tighten up with the enclosed screws.
- e) Mount the bed end in the outer position (4 screws per fitting). (Visible insert pipe is about 14.5 cm).



## 4. Disassembly of parts

### 4.1 Dismounting mattress support - from the base

The mattress support can be disassembled from the base. To disassemble the mattress support from the base relevant tools and 2 persons are required.

- a) Dismount all accessories incl. bed end.
- b) Lower the bed into the lowest position.
- c) Dismount the height adjustment motor cable from the control unit.
- d) Raise the back section to the highest position.
- e) Loosen and remove the screws/nuts between mattress support and shear arms.
- f) Lift the mattress support free from the guideway.
- g) Lower the back section to the lowest position.
- h) Remove the power plug from the bed and lift the mattress support off the shear arm.

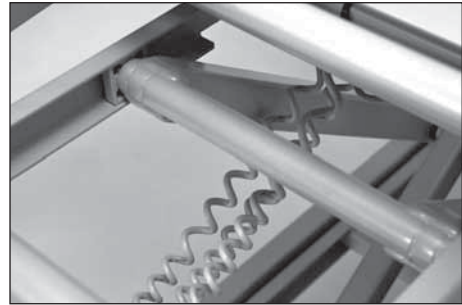
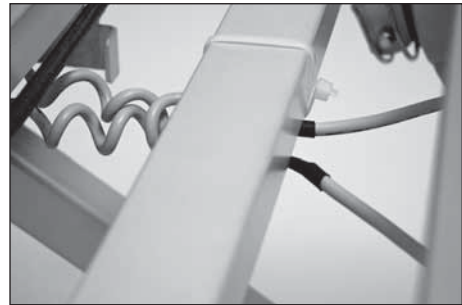
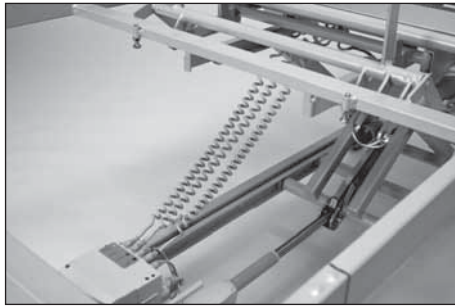


### 4.2 Dismounting the BRITT V/Line Alu side rail

- a) Raise the bed about one third.
- b) Place the side rail in the highest position.
- c) Dismount the end stop brackets. (4 pcs.).
- d) Lower the side rail, (see section "Operation of the BRITT wooden/Line Alu side rail") until it is completely below the bed end rail.



## 5. Wiring



Check the cabling by operating the motors of the bed to their outer positions. When all wires have been correctly installed, there is no squeezing risk of the cables.

It is normal for cables to loosen slightly after short usage.



- The cables are equipped with plugs at both sections, hence, they can be replaced independently (except for the height motor).
- The cables are attached to the top frame with cable clips.
- The hand control, control unit and motors are protected according to IPX4 or IPX6.



- It can be dangerous to roll over the mains cable.
- Do not bring mains cable into moving parts.
- Disconnect the plug from the mains before moving the bed.
- The cables must be mounted in such a way that they are kept clear of the floor and do not block the castors.
- A lock cam must be used on the control unit - if not, Invacare® cannot guarantee the IP protection.

## 6. Part numbers for accessories

Article	Dimensions	Order no.
Line side rail (beech, complete) . . . . .		1522786-0125
Line side rail, extendable (beech, complete) . . . . .		1522787-0125
BRITT V wooden siderail, 2 pcs. . . . .		1538458-XXXX
Wooden trim for Line and Britt V side rail) . . . . .		1544208-0101
Side rail height extender for Line, extendable, beech, 1 piece . . . . .		1538345-0125
Side rail height extender for Britt IV and V. 1 piece . . . . .		1538420-0125
Support handle (1 psc.) . . . . .		1446353-0152
Lifting pole. . . . .		50.57700.M0
Mattress support extension 10 cm . . . . .		1446498-0152
Mattress max. load 200 kg . . . . .	116x205x15	1484429
Mattress max. load 350 kg . . . . .	116x205x15	1451259
Mattress max. load 200 kg (extension) . . . . .	116x10x15	1484640
Mattress max. load 350 kg (extension) . . . . .	116x10x15	1451260
Cover for side rail height extender, padded (covering both the normal side rail and the height extender), 1 piece. . . . .		1558095
Cover for Line and Britt V side rail, padded, piece . . . . .		1449588
Cover for Line and Britt V side rail, extra padded, piece . . . . .		1449589
Cover for Line extended side rail, + 10 cm, padded, piece . . . . .		1449591
Cover for Line extended side rail, + 20 cm, padded, piece . . . . .		1449592
Cover for Line and Britt V side rail, net piece. . . . .		1449590
Cover for Line extended side rail, + 10 cm, net, piece . . . . .		1449593
Cover for Line extended side rail, + 20 cm, net, piece . . . . .		1449594

### Scala Basic 2 and 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.

### Line Standard

Full length side rail (206 cm x 40 cm) in aluminum or wood finish, mounted on the bed end rail. Two centered release buttons for folding of the gate.

### Line Extendable

Full length side rail with telescopic extension (206-226 cm x 40 cm) in aluminum or wood finish, mounted on the bed end rail. Two centered release buttons for folding of the gate.

### Britt V

Full length side rail (205 cm x 40 cm) in wood, mounted on the bed end rail. Two centered release buttons for folding of the gate.

### 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.



## 7. Cleaning and maintenance



The base frame 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.
- With normal daily use, service must be carried out according to the service schedule after 2 years use and thereafter every second year.
- For beds with electrical equipment a safety test comprising control of the motors' performance and mechanical state is recommended once a year.
- When reconditioning the bed, service must be carried out according to the service schedule.

### 7.1 Cleaning

The bed does not tolerate cleaning in automatic washing plants or the use of water-jet based cleaning equipment.

1. Please make sure the power plug is removed from the wall socket outlet before cleaning.
2. The bed should be washed down using a wet sponge, cloth or brush.
3. Use ordinary household cleaning agents. Never use acids, alkalines or solvents such as acetone or cellulose thinner.
4. The backrest and the leg/thigh sections can be lifted from the mattress support, which facilitates cleaning and access to the control unit.
5. The hand control, motors and control unit may be washed with brush and water.

**Important details for cleaning IPX6 and IPX4 hand controls, control unit and motors:**

Water may be pressurised, but never use high-pressure cleaning or steam cleaning directly on the electrical parts.

6. Dry the bed after cleaning.



Make sure that all electric plugs are in place during washing.

## 7.2 Maintenance

A service contract can be made in the countries, where *Invacare*<sup>®</sup> has its own sales company. In certain countries *Invacare*<sup>®</sup> offers courses in service and maintenance of the **Octave**<sup>™</sup>. Spare parts lists and additional user manuals are available from the *Invacare*<sup>®</sup> homepage.

### 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 3 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.

- **Motors, hand control and control unit:**

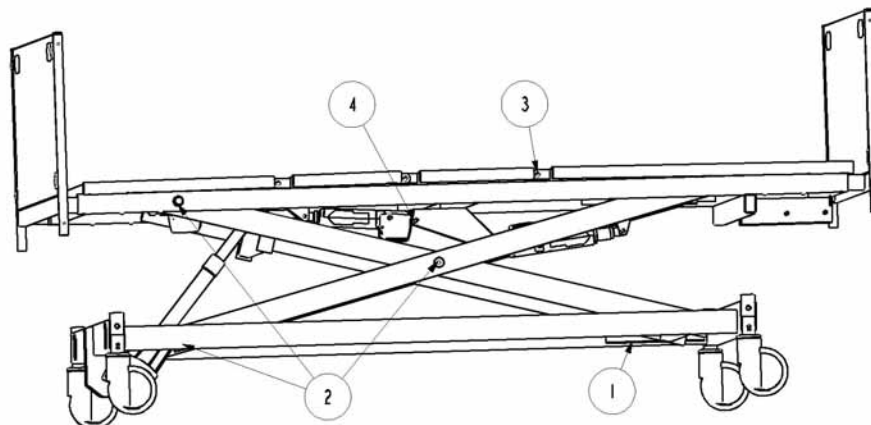
These parts are serviced by exchanging the faulty part.

### - Every second year

Service should be performed after the maintenance chart. See chapter 7.4 - Maintenance chart.

When reconditioning the bed, service must be carried out according to the service schedule.

## 7.3 Lubrication plan



We recommend to lubricate the *Invacare*<sup>®</sup> **Octave**<sup>™</sup> according to the following instructions:

- |  |                         |
|--|-------------------------|
| 1. Guideways                               | - lubricate with grease |
| 2. Swivel on shear arms                    | - lubricate with oil    |
| 3. Swivel on mattress support -accessories | - lubricate with oil    |
| 4. Swivel on motor                         | - lubricate with oil    |

Lubricate with medically clean oil, e.g. KEW-WO 50, order no.: 813239 and grease, order no: 1497607.

## 7.4 Maintenance chart

<p><b>Service and maintenance of the Invacare® Octave™ must only be performed by personnel who have received the necessary instruction or training.</b></p> <p><b>S/N (located on the mattress support):</b> _____</p>						
Date:	Initials.:					
Circlips and cotter pins checked.						
Screws tightened.						
Weldings checked.						
Side rail locking and moving system tested.						
Castor fittings tightened.						
Castor brakes checked.						
Height adjustment motor checked.						
Back rest motor checked.						
Thigh section motor checked.						
Leg section motor checked.						
Wiring correct and undamaged. Plugs undamaged.						
Damaged paintwork repaired.						
Lubrication according to the lubrication plan (chapter 12). The wooden side rails' gliding system must not be lubricated with oil - otherwise the wooden bars will move sluggishly.						
Accessories checked.						

**Measurements can be done at internal threads after removal of finger screws.**

## 7.5 Motors, control unit and hand control

These parts are not serviceable, they must be replaced.

A safety test comprising control of the motors' performance and mechanical state is recommended once a year.

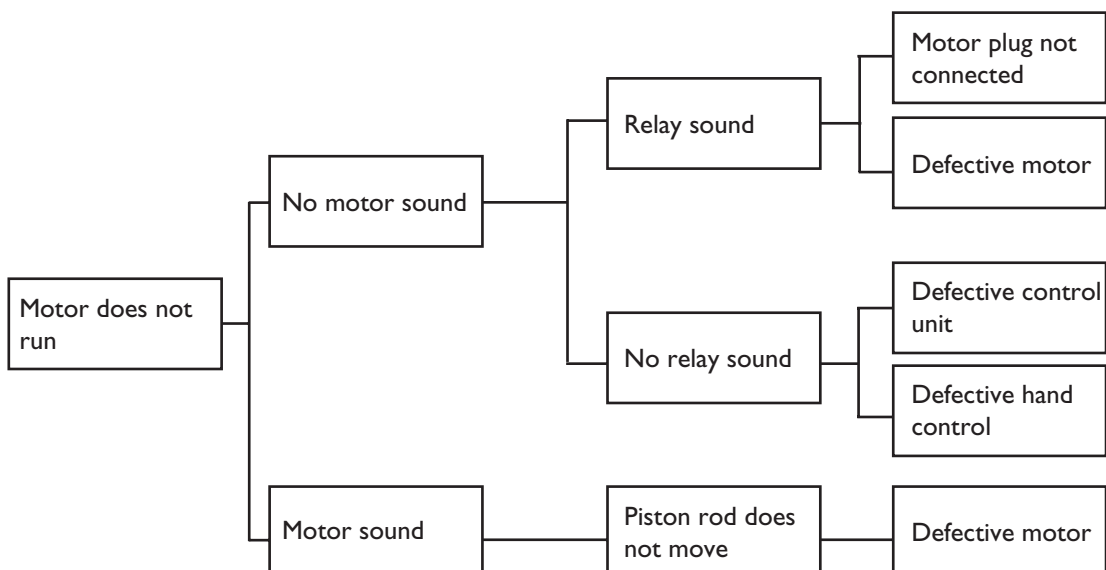
Motors, control unit and hand control must be regularly cleaned from dust and dirt and they must be inspected for mechanical damage or breakage.

Inspect anchor points, cables, piston rod, casing and plugs and check the correct functioning of the motors.

## 8. Trouble-shooting the electrical system

**Note!** Make sure that the mains are connected.

Symptom	Possible cause	Remedy
Mains indicator does not light up.	1) Mains not connected. 2) Fuse in the control unit is blown. 3) Control unit defective.	1) Connect mains. 2) Replace the control unit. 3) Replace the control unit.
Mains indicator lights up, but the motor is not running. The relays in the control unit makes a clicking noise.	1) Motor plug not pushed fully into the control unit. 2) Motor is defective. 3) Motor cable is damaged. 4) Control unit defective.	1) Insert the motor plug properly into the control unit. 2) Replace the motor. 3) Replace the motor. 4) Replace the control unit.
Mains indicator lights up, but the motor is not running. No relay sound is heard from the control unit.	1) Hand control defective. 2) Control unit defective.	1) Replace the hand control. 2) Replace the control unit.
Control unit is in order except one direction on one channel.	1) Hand control defective. 2) Control unit defective.	1) Replace the hand control. 2) Replace the control unit.
Motor is running, but the piston rod does not move.	Motor damaged.	Replace the motor.
The motor cannot lift full load.		
Motor noise, but no movement of piston rod.		
Piston rod operates inwards but not outwards.		



## 9. Electrical data

Voltage supply:	230 Voltage AC/50 Hz.
Max. current input:	3 A.
Intermittent (Duty cycle of motors):	Int. 10% 2 min/18 min.
Degree of protection:	IPX6 * or IPX4 **
Sound level:	48 dB (A)

Double insulated, class II



Alternating current:



Applied Part, Type B, complying with the specified requirements for protection against electrical shock according to IEC60601-1. (An applied part is a part of the medical equipment which is designed to, or are likely to, come into physical contact with the patient.)



Potential equalization.



The control unit has no contact breaker, hence, disconnecting the mains plug is the only means of disconnecting the power supply.

\* The IPX6 classification means that the electrical system is protected against water projected in powerful jets from any direction

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

The hand controls have different IP-classes (see label on back), the IP-classification of the hand control decides the overall classification of the bed.

## 9.1 Guidance and manufacturer's declaration - electromagnetic emission

Guidance and manufacturer's declaration – electromagnetic emission		
The Octave Bed is intended for use in the electromagnetic environment specified below. The customer or the user of the Octave Bed should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The Octave 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. The Octave 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.
RF emissions CISPR 11	Class B	
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 Octave Bed is intended for use in the electromagnetic environment specified below. The customer or the user of the Octave 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 Octave Bed requires continued operation during power mains interruptions, it is recommended that the Octave Bed be powered from an uninterruptible power supply or a battery.
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.
NOTE $U_T$ is the a. c. mains voltage prior to application of the test level.			

**Recommended separation distances between portable and mobile RF communications equipment and the Octave Bed**

The Octave Bed is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Octave Bed can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Octave 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	0,12	0,23
0,1	0,37	0,37	0,74
1	1,17	1,17	2,33
10	3,69	3,69	7,38
100	11,67	11,67	23,33

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

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 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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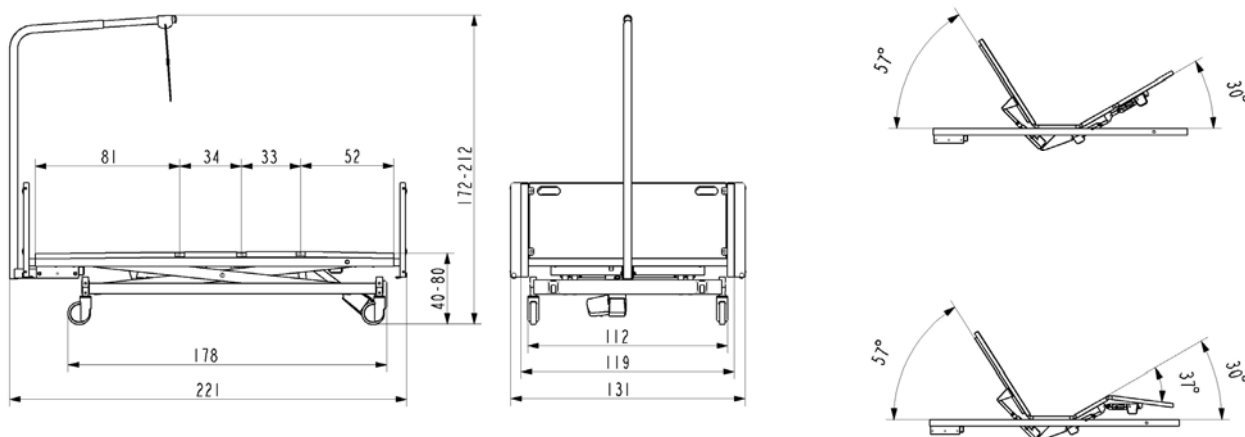
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NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.



## 10. Technical specifications



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

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

Max patient weight: 350 kg (provided the equipment - bed ends, side rails, support handles, lifting pole and mattress have a total weight of max 35 kg). Safe Working Load: Max 385 kg (Patient + accessories).

### 10.1 Environmental conditions

	Storage and Transportation	Operation
Temperature	-10°C — +50°C	+5°C — +40°C
Relative humidity	10% — 80% RH	
Atmospheric pressure	800 hPa — 1100 hPa	

## 10.1 Mattress dimensions



Safety aspects regarding combination of side rails and mattresses:

- In order to obtain the highest possible safety level, when using the bed in combination with side rails, it is important to respect the minimum and maximum measures for mattresses stated in the table.
- To prevent the possibility of the user crawling over the top of the side rail (with the risk of severe injury due to e.g. falling) a minimum vertical distance of 22 cm between the top of the mattress and the top of the side rail is to be respected. The maximum mattress height in combination with a given side rail is stated in the table.
- To prevent head entrapment between the inside surface of the side rail and the mattress (with the risk of e.g. suffocation) a safety maximum space has to be respected. It is especially important to focus on this risk, when using very thick or soft mattresses (low density) or a combination of both. The minimum width (and length) of mattresses in combination with a given side rail is stated in the table.

	Max Height Mattress	Min. Height Mattress	Min. Width Mattress	Min. Length Mattress
Line/ Line extendable side rail	21 cm	15 cm	116-120 cm	200 cm
Britt V side rail	21 cm	15 cm	116-200 cm	200 cm

Density:

Dacapo heavy user Max 350 kg

5 cm Visco-elastic foam 50 kg/m<sup>3</sup>

5 cm Cold foam 50 kg/ m<sup>3</sup>

5 cm Cold foam 50 kg/m<sup>3</sup>

Dacapo heavy user Max 250 kg

5 cm Visco-elastic foam 50 kg/m<sup>3</sup>

5 cm Cold foam 38 kg/ m<sup>3</sup>

5 cm Cold foam 50 kg/m<sup>3</sup>

## 11. Weight

Mattress support. . . . .	72,0 kg
Base incl. shear arm . . . . .	71,0 kg
Bed end fitting. . . . .	5,0 kg/pcs.
Wooden bed end . . . . .	8,5 kg/pcs.
Complete bed, excluding accessories . . . . .	170,0 kg
Wooden trims 2 pcs. . . . .	2,0 kg
Wooden side rail (BRITT V) . . . . .	7,5 kg/pcs.
Lifting pole. . . . .	10,0 kg
Support handle . . . . .	2,0 kg
Mattress approx. . . . .	8,0 kg

## 12. Disposal

This product has been supplied from an environmentally aware manufacturer that complies with the Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/CE.

This product may contain substances that could be harmful to the environment if disposed of in places (land fills) that are not appropriate according to legislation.



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

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



**Yes, you can.®**

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**Version: 06**

**Date: 02.2013**

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