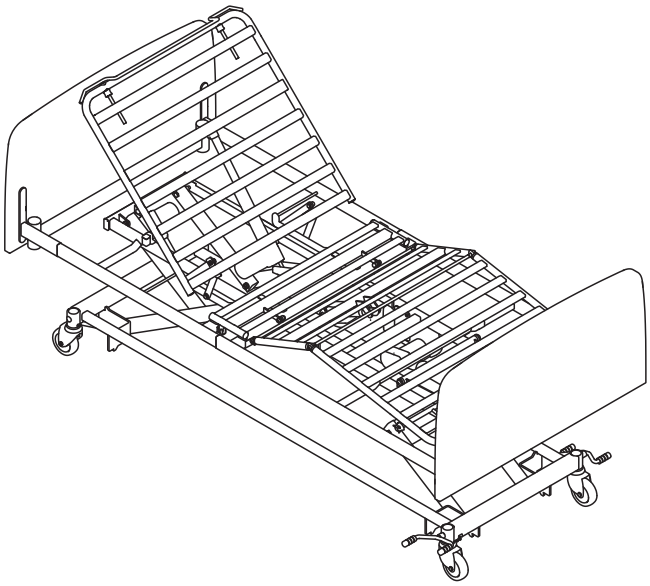


# Invacare® NordBed™

NordBed™ Ultra
NordBed™ Optimo
NordBed™ Optimo Wide

**en Bed**

**Service Manual**

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

Yes, you can.

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

# 1 General

## 1.1 Introduction

This document contains important information about assembly, adjustment and advanced maintenance of the product. To ensure safety when handling the product, read this document and the user manual carefully and follow the safety instructions.

Find the user manual on Invacare's website or contact your Invacare representative. See addresses at the end of this document.

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.

Previous product versions may not be described in this manual's current revision. If you require assistance, please contact Invacare.

For pre-sale and user information, see the user manual.

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

## 1.2 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. This document is printed in greyscale. For your information, the safety messages have the following colour coding according to ANSI Z535.6: Danger (Red), Warning (Orange), Caution (Yellow) and Notice (Blue). 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.

**NOTICE!**
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.

**Other Symbols**
(Not applicable for all manuals)



**Triman**
Indicates recycling and sorting rules (only relevant for France).

## 1.3 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
- Unauthorised modifications, combinations and/or use of unsuitable spare parts

# 2 Safety

## 2.1 General Safety Information

**WARNING!**
**Risk of injury or damage to property**
- The procedures in this manual must only be performed by a qualified technician.
- Use only original accessories and spare parts.
- Do not handle this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as user manuals, installation manuals or instruction sheets supplied with this product or optional equipment.
- After each assembly, check that all fittings are properly tightened and that all parts have the correct function.

**WARNING!**
**Risk of contamination**
- Clean and disinfect the product before servicing.

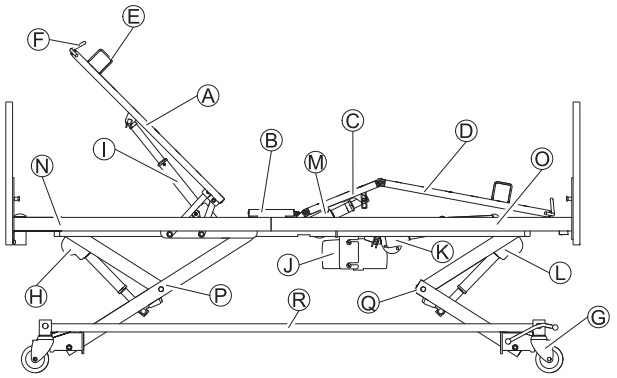
**NOTICE!**
Assembly of accessories might not be described in this service manual. Refer to the manual, delivered with the accessory.
- Additional manuals can be ordered from Invacare. See addresses at the end of this document.
- Due to regional differences, refer to your local Invacare catalog or website for available accessories or contact your local Invacare representative. See addresses at the end of this document.

**NOTICE!**
Some replacement parts are only available as a kit. Always use the complete new kit when replacing a part.
- Spare parts can be ordered from Invacare. Refer to your local Invacare website to access the electronic spare parts catalogue (ESPC).

**NOTICE!**
Refer to the user manual of this product for information on
- Technical data
- Product components
- Labels
- Additional safety instructions

The information contained in this document is subject to change without notice.

## 2.2 Main parts of bed




Parts of standard bed:

Ⓐ Back section
Ⓑ Seat section
Ⓒ Thigh section
Ⓓ Leg section
Ⓔ Mattress retainer
Ⓕ Mattress support extension
Ⓖ Castor with central brake pedal
Ⓗ Height adjustment actuator, upper half
Ⓘ Back section actuator
Ⓙ Control unit
Ⓚ Leg section actuator
Ⓛ Height adjustment actuator, lower half
Ⓜ Thigh section actuator
Ⓝ Mattress support platform, upper half
Ⓞ Mattress support platform, lower half
Ⓟ Lifting mechanism, upper half
Ⓠ Lifting mechanism, lower half
Ⓡ Base frame

# 3 Setup

## 3.1 General safety information

**WARNING!**
**Risk of injury or damage**
Damaged parts may affect the safety of the product.
- Check all parts for shipping damage before use.
- In case of damage, do not use the product and contact your Invacare provider for further instructions.

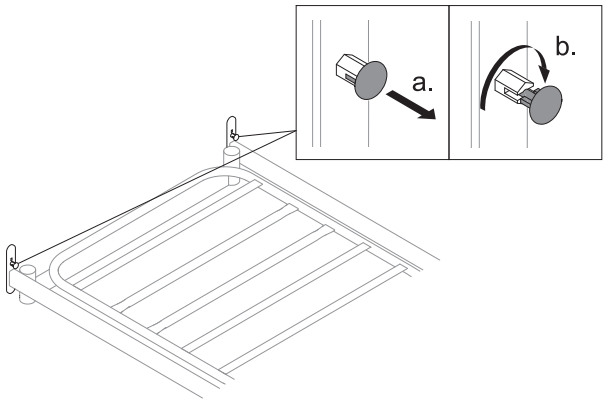
## 3.2 Installing Bed Ends

### 3.2.1 Bed ends for Sanne-bracket

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

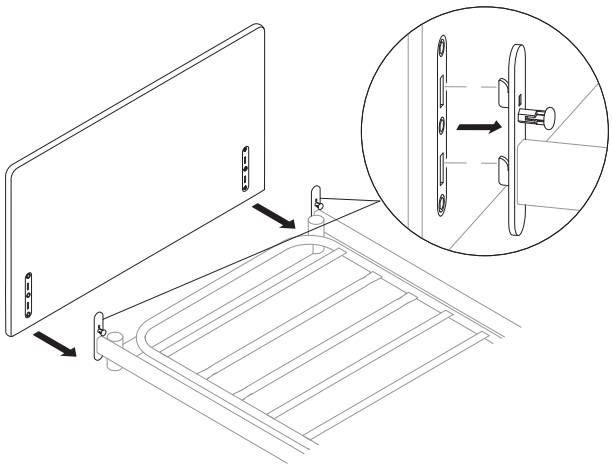
**Mounting**

1.




Pull out the locking pin and rotate by 90 degrees to disengage from the bed end on both sides.

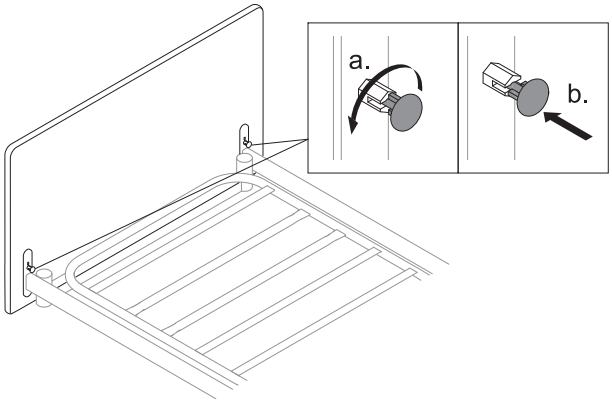
2.



Align the slots in the bed end with the tabs on the Sanne bracket and place the bed end onto the tabs.

3. Push down firmly and ensure that the bed end is fully seated in the tabs.

4.




Rotate the locking pin and allow it to engage with the bed end on both sides.

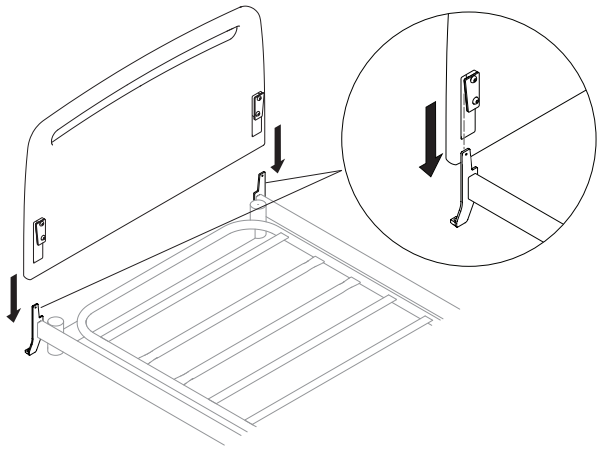
**Dismounting**

1. Pull out the locking pin and rotate by 90 degrees to disengage from the bed end on both sides.
2. Hold the bed end firmly on each side and pull up vertically on both sides at the same time.

### 3.2.2 Bed ends for Quick-bracket

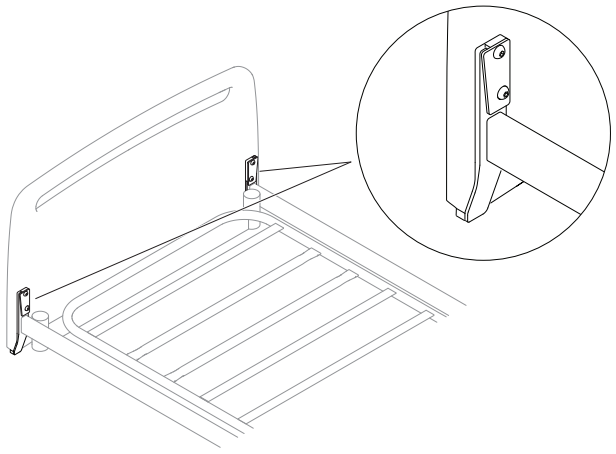
**Mounting**

1.



Align the slots on the bed end with the tabs on the Quick bracket and lower the bed end onto the brackets.

2.



Press down firmly and ensure the bed end is fully seated on the brackets.

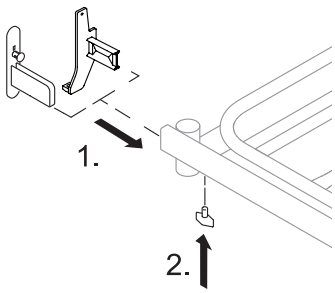
**Dismounting**

1. Hold the bed end firmly on each side and pull up vertically on both sides at the same time.

### 3.2.3 Bed end brackets

Depending on the bed end to be mounted, it might be required to pre-mount or change the bed end brackets.

**Mounting**




1. Insert the bed end brackets into the side tubes of the mattress support platform.
2. Fix the bed end brackets on the side tubes with the screws from below and tighten firmly.

**Dismounting**

1. Remove the screws and pull the bed end brackets out of the side tubes.

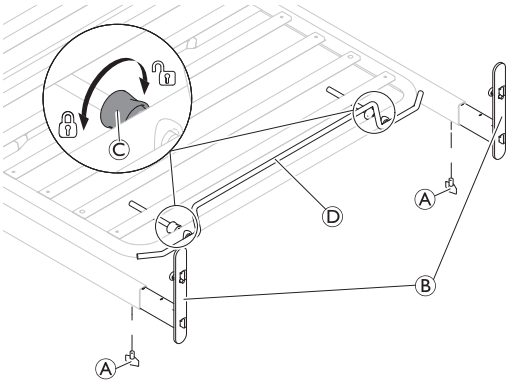
## 3.3 Mattress support extension

For patients, taller than 185 - 190 cm it is recommended to extend the mattress support of the bed.

**WARNING!**
**Risk of injury**
The user can get trapped or suffocated.
- Always extend the mattress when extending bed.
- There must be a distance of more than 2,5 cm, between the bed end and the mattress bow, to avoid entrapment of fingers.
- Always make sure to tighten the screws for the mattress support extension.

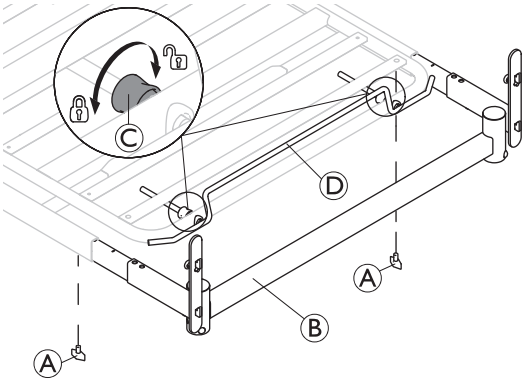
The bed can be extended 5 or 10 cm in both ends of the bed – to a maximum extension of 20 cm.

1. If applicable, dismount the side rails, bed ends and lifting pole.
2. To extend the bed in the foot end:




   a. Loosen the screws Ⓐ underneath the side tubes.
   b. Pull out the bed end brackets Ⓑ by 5 or 10 cm, and re-tighten both screws Ⓐ.
   c. Loosen the screws Ⓒ on the mattress bow Ⓓ and pull it out to match the extension.
   d. Make sure there is at least 2,5 cm between the mattress bow Ⓓ and the bed end and re-tighten both screws Ⓒ.

3. To extend the bed in the head end:




   a. Loosen the screws Ⓐ underneath the side tubes.
   b. Pull out the cross tube Ⓑ by 5 or 10 cm, and re-tighten both screws Ⓐ.
   c. Loosen the screws Ⓒ on the mattress bow Ⓓ and pull it out to match the extension.
   d. Make sure there is at least 2,5 cm between the mattress bow Ⓓ and the cross tube Ⓑ and re-tighten both screws Ⓒ .

4. Replace the mattress or put in a fitting mattress piece.
5. If applicable, mount the side rails, bed ends and lifting pole.

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

# 4 Options

## 4.1 Side Rails

### 4.1.1 Installing side rails

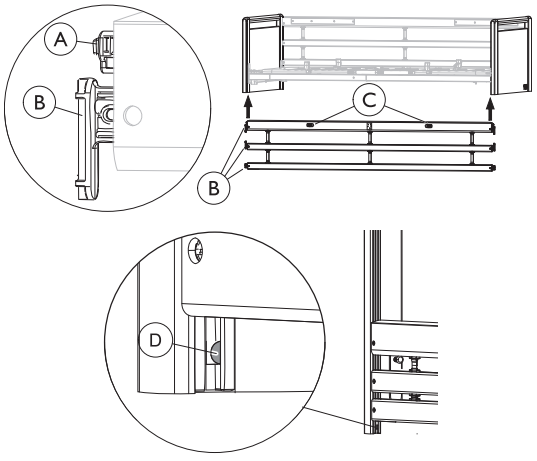
**WARNING!**
**Risk of personal damage**
There is a risk of entrapment or squeezing, while assembling or disassembling the side rail.
- Pay attention to your fingers.
- Follow instructions carefully.
- After each assembly, check that all fittings are properly tightened and that the side rail has the correct function.

**Removable 3/4 length side rails**

**WARNING!**
**Risk of entrapment**
There's a risk of entrapment or suffocation between mattress support, side rail and bed end.
- When using removable side rails, always make sure that the distance between the bed end and the side rail's handle upper edge is less than 6 cm in the head end and more than 32 cm in the foot end of the bed.

### 4.1.2 Installing the Freya / Embla side rail

**WARNING!**
**Risk of entrapment / suffocation**
The user can get trapped or fall out of the bed if the side rail is not correctly mounted or damaged.
- Make sure that all gliding shoes are correctly guided into the bed end guideways.
- Make sure that all side rail bars are above the locking pin and properly locked.
- Make sure that the straps between the bars are not damaged or loose.




**Mounting**

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

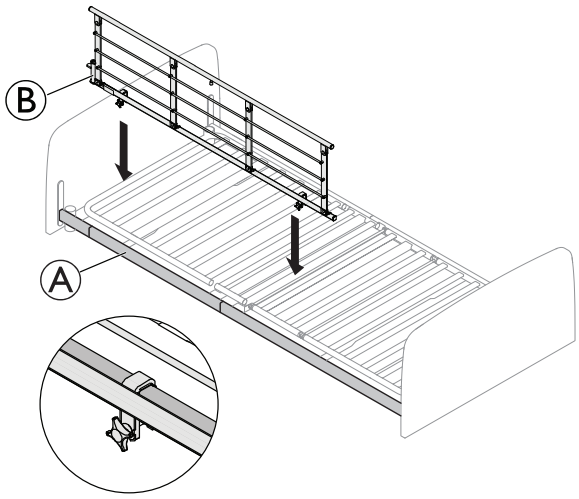
**Dismounting**

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

### 4.1.3 Installing the Ane side rail

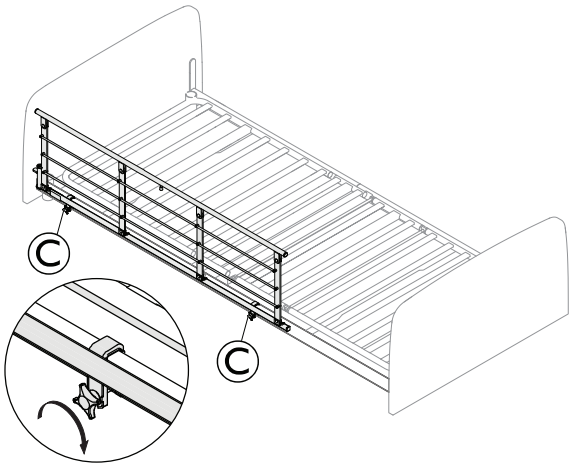
**Mounting**

1.




Place the mounting clamps of the side rail over the square tube Ⓐ , with the release system Ⓑ at the head end of the bed.

2.




Tighten the finger screws Ⓒ to attach the side rail on the square tube Ⓐ and make sure it is steady and fastened.

**Dismounting**

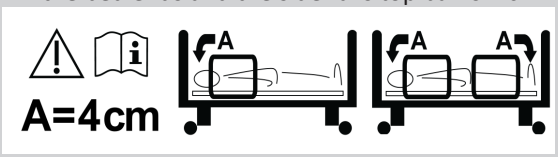
1. Loosen the finger screws Ⓒ and remove the side rail.

### 4.1.4 Installing the Liv side rail

The Liv side rail is only compatible with the Nordbed Ultra.

**WARNING!**
**Risk of entrapment / suffocation**
There's a risk of entrapment or suffocation between side rail and bed end.
**Standard Bed Length:**
One side rail per side of bed:
- Always make sure that the side rail is mounted close to the head end of the bed and the distance between the bed end and the side rails top bar is 4 cm.

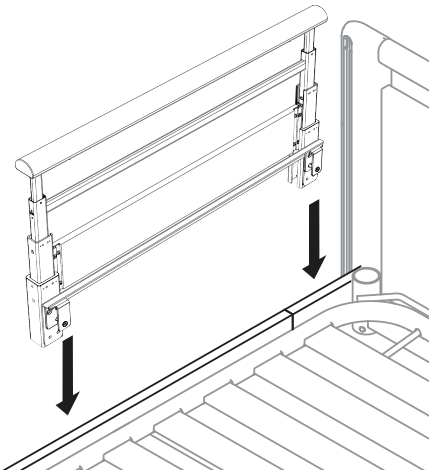
Two side rails per side of bed:
- Always make sure that one side rail is mounted close to the head end and the other close to the foot end of the bed.
- Always make sure that the distance between the bed ends and the side rails top bar is 4 cm.

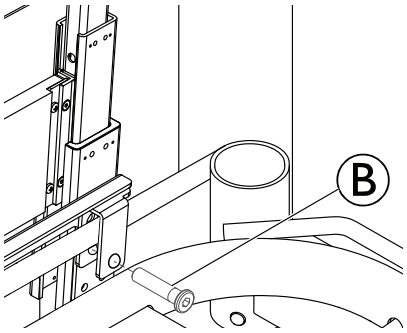



**Extended Bed Length**
Liv side rails are not compatible with the 10 cm head extension.
For all other bed extension configurations, either:
- an extra panel must be installed at the foot end of the bed to close the gap, or
- only one side rail must be used on each side of the bed.

**Mounting**

Depending on the individual need of the end-user only one or two side rails can be mounted on each side of the bed.

1. Raise the side rail to its high position and remove the two bolts on the brackets.
2. 

   Place both brackets of the side rail on the side tube of the mattress support platform.
3. Position the side rail with a distance of 4 cm between the top bar and the bed end.
4. 


   Insert the bolt Ⓑ underneath the side tube of the mattress support platform and firmly tighten with a 5 mm Allen key on both brackets of the side rail.
5. Repeat the procedure at the head end on the other side of the bed or at the foot end on the same side of the bed, depending on the, desired configuration and availability of additional side rails.

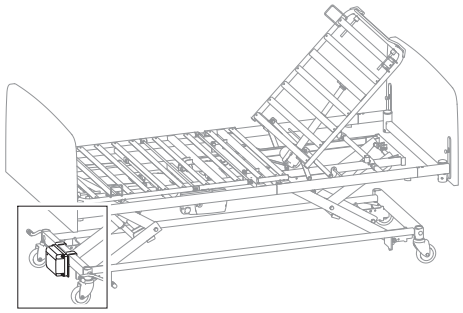
**Dismount**

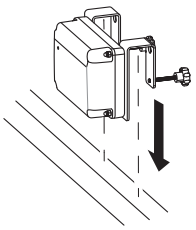
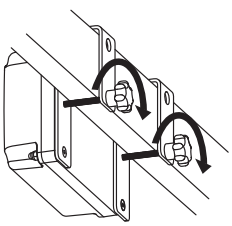
1. Untighten the bolts and remove on both side rail brackets.
2. Lift the side rail of the side tube.

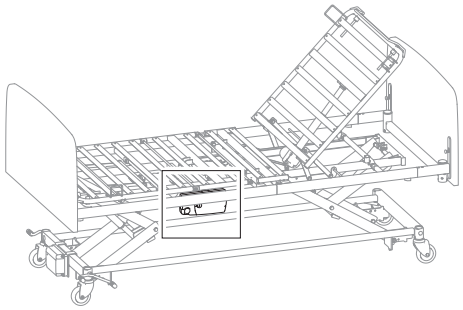
## 4.2 Backup battery

The bed can be equipped with a backup battery. The backup ensures that the bed can be adjusted during a power failure or transport.

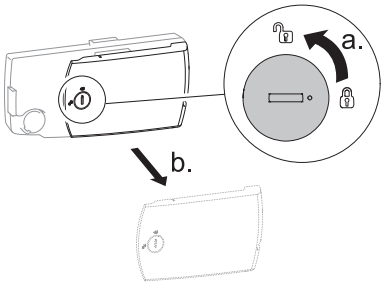
**Mounting the backup battery**



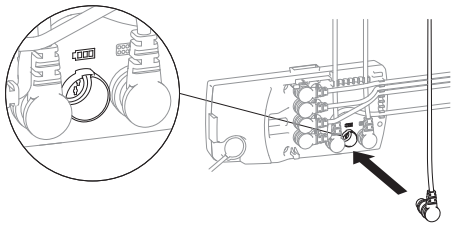
1. 
2. 



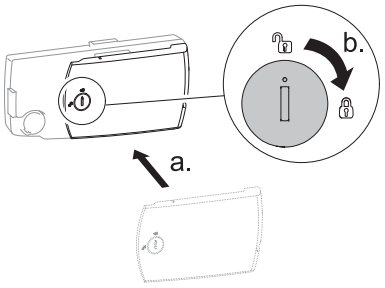
3.




4.



5.




1. Place the mounting brackets of the backup battery over the square tube at the foot end of the base frame.
2. Fix the backup battery by tightening the two finger screws.
3. On the control unit turn the lock 90 degrees counter-clockwise to open the lid and remove it.
4. Connect the cable from the backup battery to the control unit in the socket labeled with the battery symbol.
5. Put the lid back on the control unit and close it by turning the lock 90 degrees clockwise.

**Charging the batteries**

**WARNING!**
**Risk of explosion**
Old or faulty batteries may generate an explosive gas mixture during charging.
— The battery box is provided with vents to ensure adequate ventilation of the box. Do not block or cover the vents, as this may result in pressure built-up and the risk of explosion.

1. Connect the control unit to the mains.

- The control unit must be connected to the mains for 24 hours prior to first use.
- Batteries must be charged, at least, every 6 months for maintenance purposes.

**Preventive maintenance**

Frequent, sudden discharges reduce the lifetime of the battery.

We recommend the batteries to be tested at least once a year.

Batteries are not damaged by continuous connection to the mains.

**Exchanging the batteries**

**WARNING!**
**Environmental Hazard**
Disposal of batteries.
This product may contain substances that could be harmful to the environment if disposed of in places (landfills) that are not appropriate according to legislation.
— DO NOT dispose of batteries in normal household waste.
— Batteries MUST be taken to a proper disposal site. The return is required by law and free of charge.
— Do only dispose discharged batteries.
— Cover terminals of lithium batteries prior to disposal.
— For information on the battery type see battery label or technical data.

- Batteries have to be exchanged after 4 years. Depending on how the back up is used the exchange may have to take place earlier.
- Batteries must be exchanged as sets.
- Batteries must be replaced with batteries of the same type or mechanically and electrically compatible batteries. See technical data.
- Batteries, in a set, must have identical production codes.

Prior to insertion make sure that the battery set is correctly connected according to the drawing (in the battery box), and that none of the connections are loose.

**Technical data**

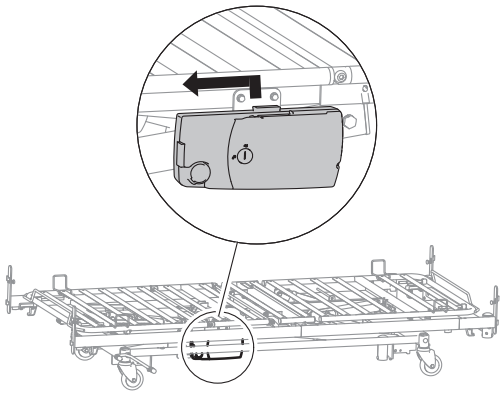
- Battery type: Lead-acid
- Capacity: 1.2 Ah
- Input voltage: 29–45 V DC
- Output voltage: 24 V DC, 1.2 A

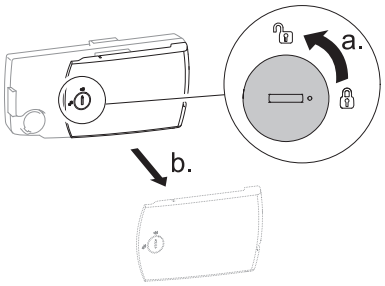
# 5 Transportation and Storage

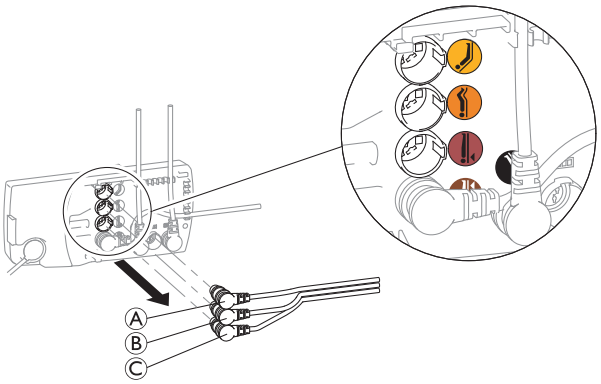
## 5.1 Dismounting the Mattress Support Platform

1. Lock the brakes.
2. Remove bed ends, side rails and other accessories while the bed is in a suitable working height.
3. Lower the bed to the lowest height.

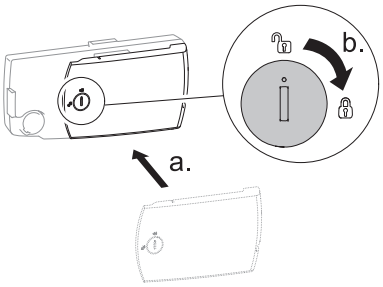
   To disassemble a low configuration Optimo bed (mattress support to floor height equal to 28 cm): Raise the bed 2 cm from its lowest position.

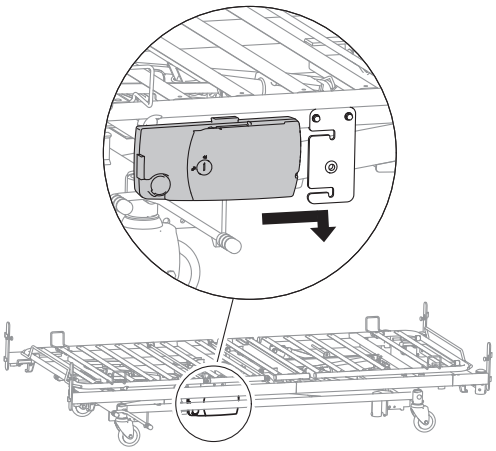
4. Disconnect the main power cable from the main power socket.
5. 

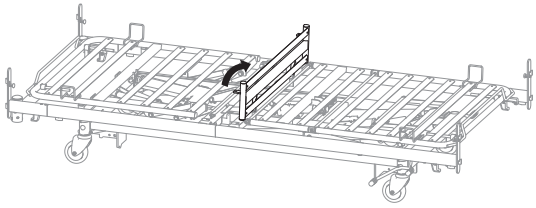
   Detach the control unit by pushing it up and sliding it towards the foot end of the bed.
6. 


   On the control unit turn the lock 90 degrees counter-clockwise to open the lid and remove it.
7. 


   Disconnect the actuator cables Ⓐ, Ⓑ and Ⓒ from the control unit.

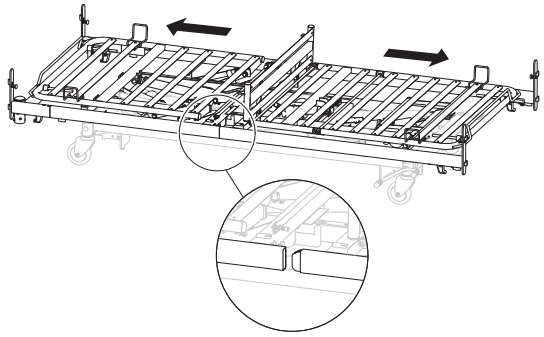
   Three cables remain plugged in the control unit. The hand control cable and the two actuator cables marked in black and brown.
8. 


   Put the lid back on the control unit and close it by turning the lock 90 degrees clockwise.
9. 

   Attach the control unit by sliding it onto the bracket and pushing it down to lock it in place.
10. 

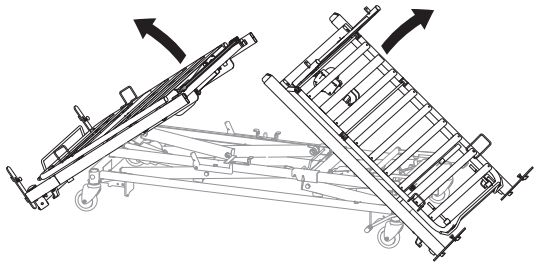
    Fold up the seat section to disconnect the two halves of the mattress support platform.

11.



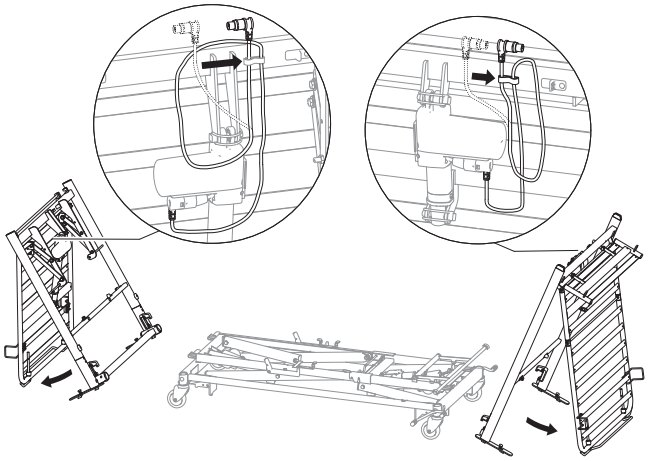
One after another, pull the halves slightly away from the center of the bed, so the side tubes become disconnected but they are still resting in their brackets on the base.

12.



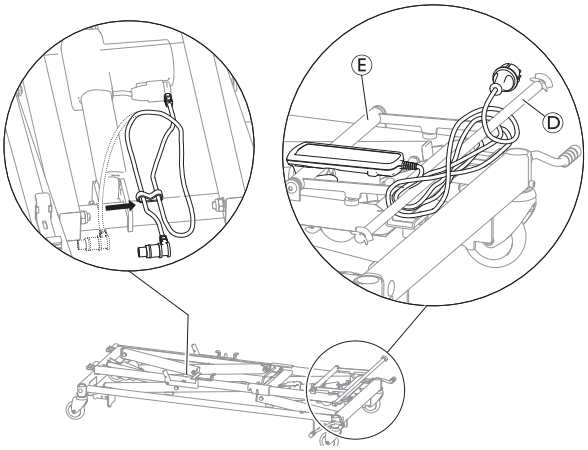
One after another, tip the two halves gently onto the floor and to an upright position onto the bed end brackets.

13.



Place the actuator cables in the clips and fold out the back section / leg section until the mattress support halves are in balance and let them stand aside.

14.

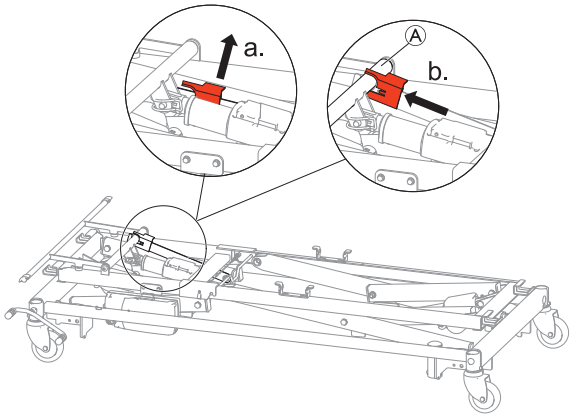



Place the actuator cable in the clip and wind the power and hand control cable around the ends of tube Ⓓ and attach the hand control to tube Ⓔ.

## 5.2 Dismounting the base

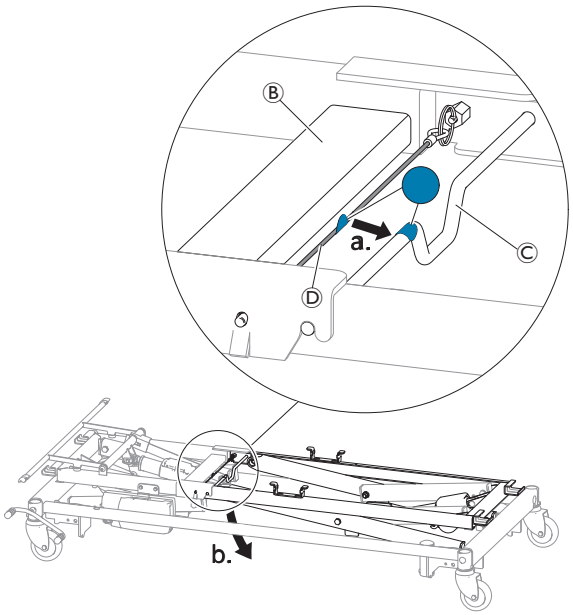
NordBed Optimo and NordBed Optimo Wide 105 cm only.

1.



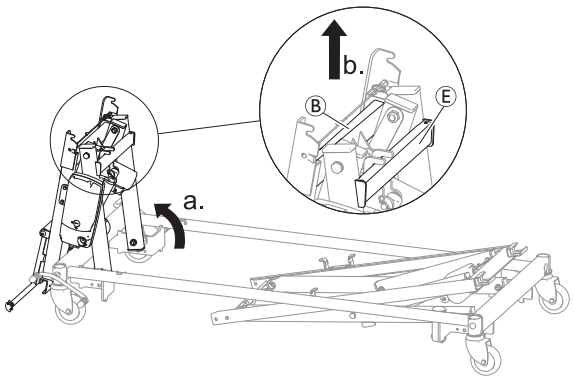

Lock the short lifting mechanism by pulling up the lever with the red locking cam and pushing the locking cam firmly over the tube Ⓐ.

2.



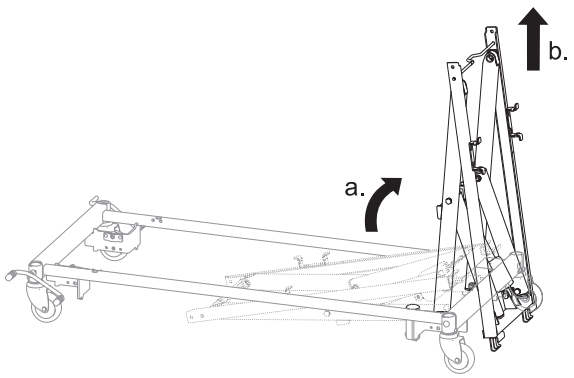

Grab the square tube Ⓑ with one hand and the tube Ⓒ with the other hand. Release the lock on the subframe by pulling the blue marked string Ⓓ towards the blue marked tube Ⓒ with one hand. When the lock has been released hold the short lifting mechanism in a horizontal position and lower the long lifting mechanism onto the floor.

3.




Pivot the short lifting mechanism up to a vertical position and lift it off by holding on the two square tubes Ⓐ and Ⓔ.

4.

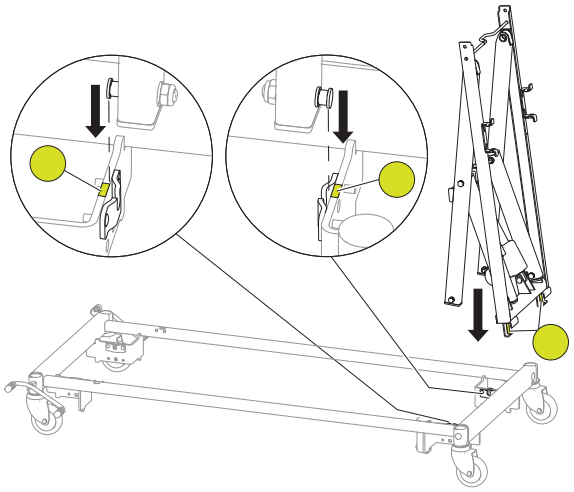



Pivot the long lifting mechanism up to a vertical position and lift it off.

## 5.3 Mounting the Base

NordBed Optimo and NordBed Optimo Wide 105 cm only.

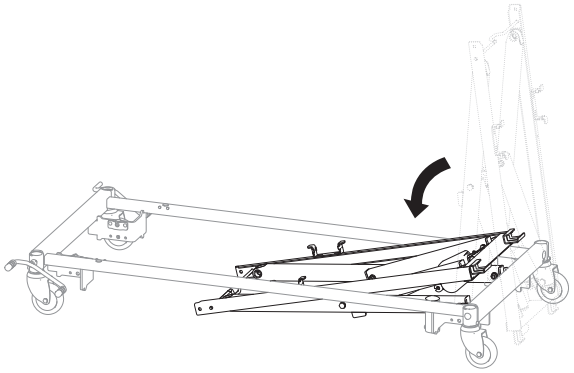
1.



Mount the long lifting mechanism by fitting the axles in the yellow marked cut-outs on the corner brackets of the base frame.

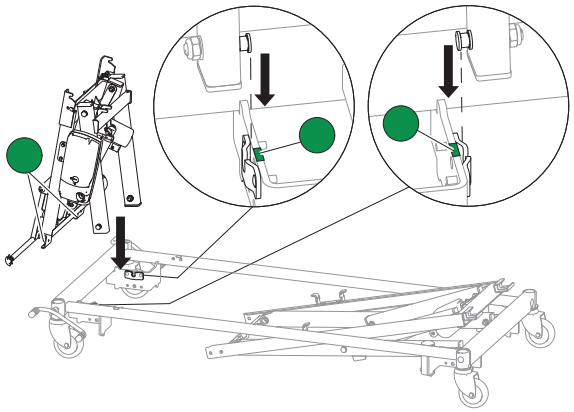
The lifting mechanism should be lowered almost vertical only leaning slightly towards the center of the bed.

2.



Pivot the lifting mechanism down and let it rest on the floor.

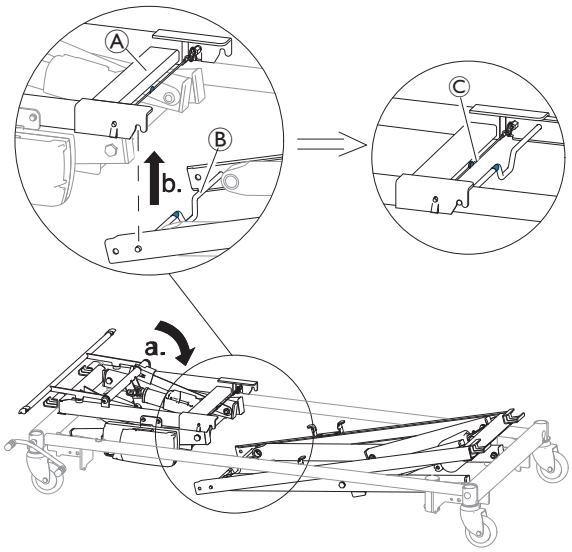
3.



Mount the short lifting mechanism by fitting the axles in the green marked cut-outs of the corner brackets on the base frame.

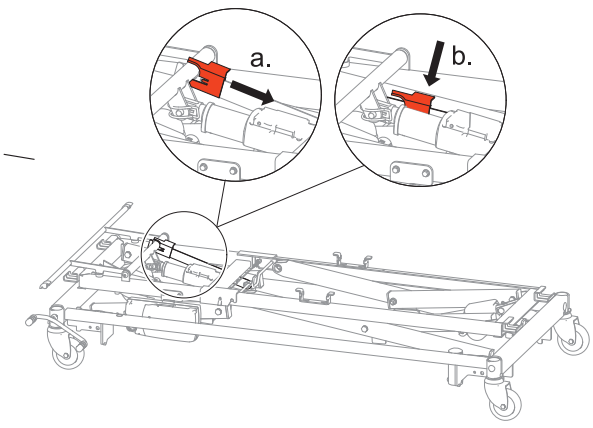
The lifting mechanism should be lowered almost vertical only leaning slightly towards the center of the bed.

4.




Pivot the short lifting mechanism down into a horizontal position and hold it in place on square tube Ⓐ. Lift up the long lifting mechanism at blue marked tube Ⓑ until it engages with an audible click and ensure there is tension on the blue marked string Ⓒ.

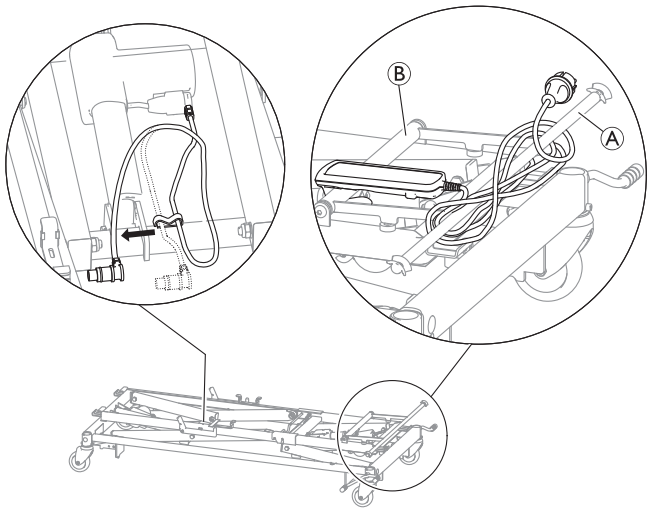
5.




Unlock the short lifting mechanism by pulling the red locking cam away from the tube and lowering the lever to its rest position.

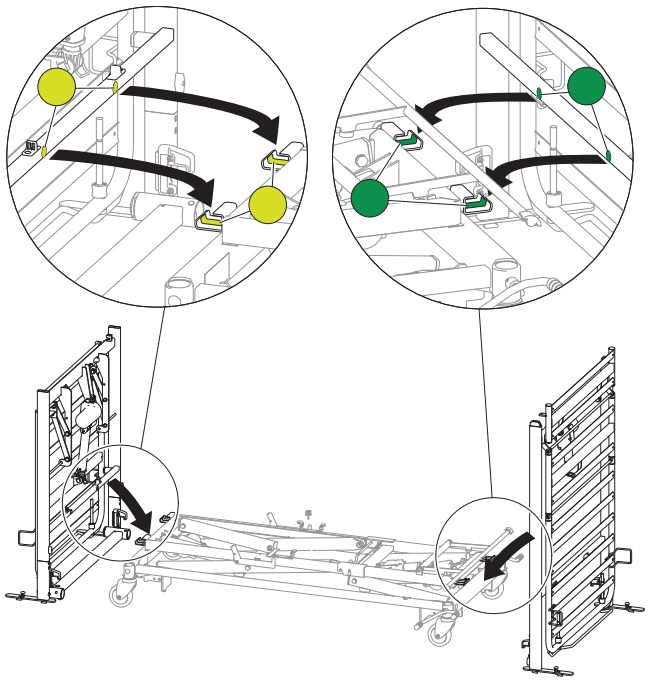
## 5.4 Mounting the Mattress Support Platform

1.



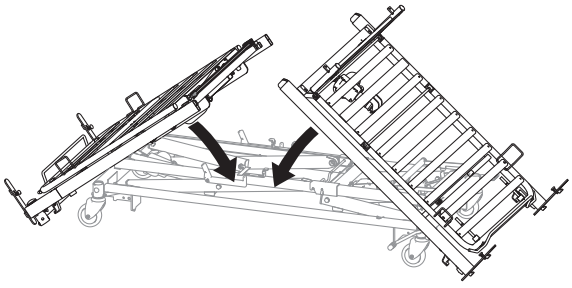

Unwind the cables from tube Ⓐ, remove the hand control from tube Ⓑ and release the free end of the actuator cable from the clip.

2.



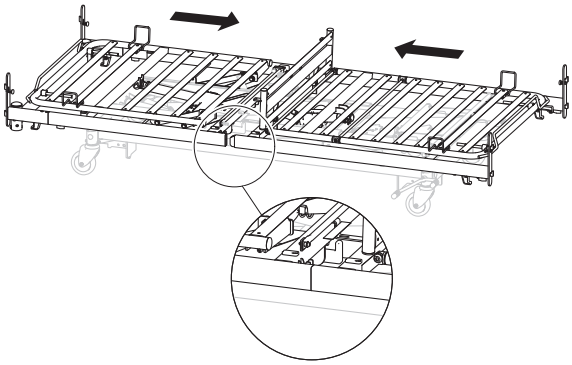
Place each half of the mattress support platform in the respective brackets by tilting the color marked square tubes into the brackets marked with the same color – yellow marked square tube into yellow marked brackets and green marked square tube into green marked brackets.

3.



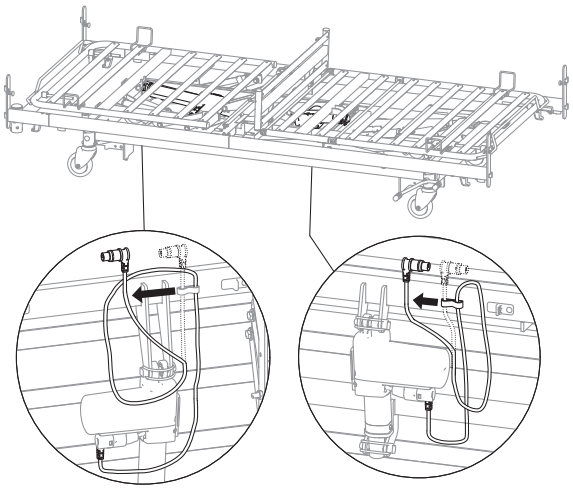
Pivot the two halves down onto the base.

4.



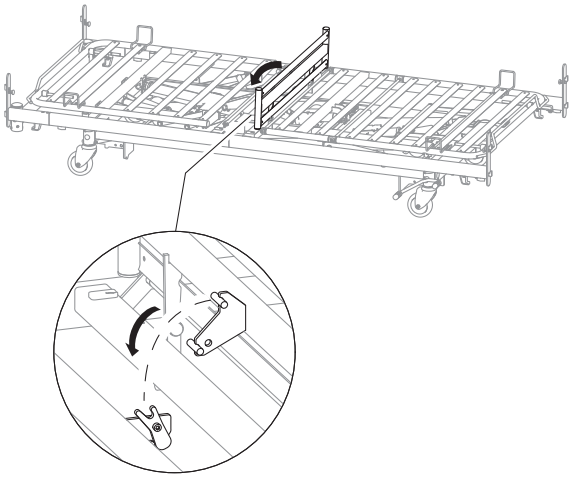
One after the other, push the two halves to the center of the bed and ensure the side tubes are properly aligned and connected.

5.



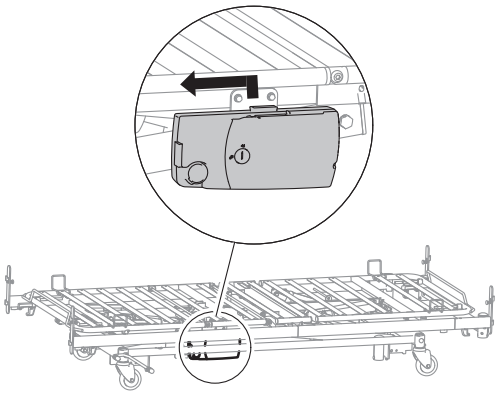
Release the free ends of the actuator cables from the clips.

6.



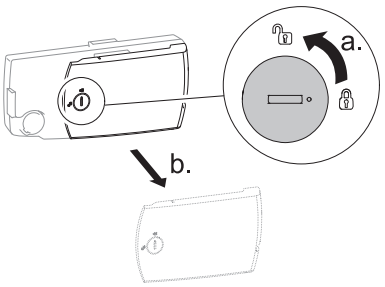
Fold the seat section down to lock the two halves of the mattress support platform together.

7.



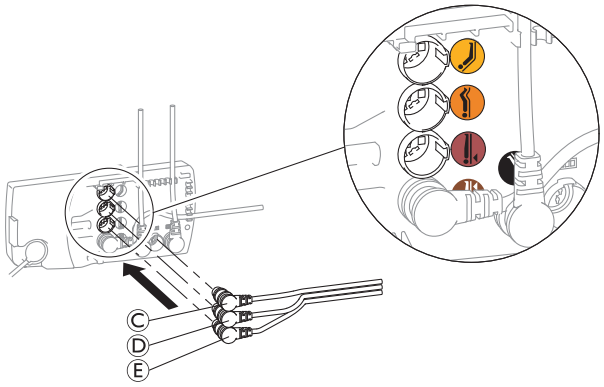
Detach the control unit by pushing it up and sliding it towards the foot end of the bed.

8.



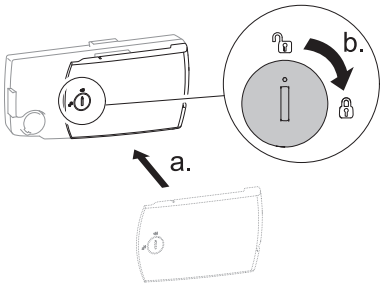

On the control unit turn the lock 90 degrees counter-clockwise to open the lid and remove it.

9.



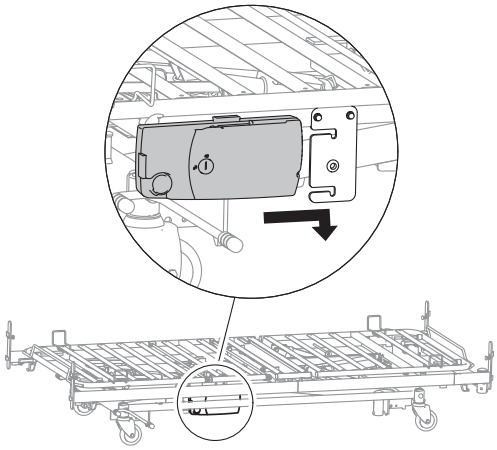

Connect the actuator cables Ⓒ, Ⓓ and Ⓔ to the control unit, according to the color coding and symbols.

10.




Put the lid back on the control unit and close it by turning the lock 90 degrees clockwise.

11.



Attach the control unit by sliding it onto the bracket and pushing it down to lock it in place.

> **NOTICE!**
> — If actuators have been reconnected or newly connected to the control unit, the system must be reset to ensure proper function.

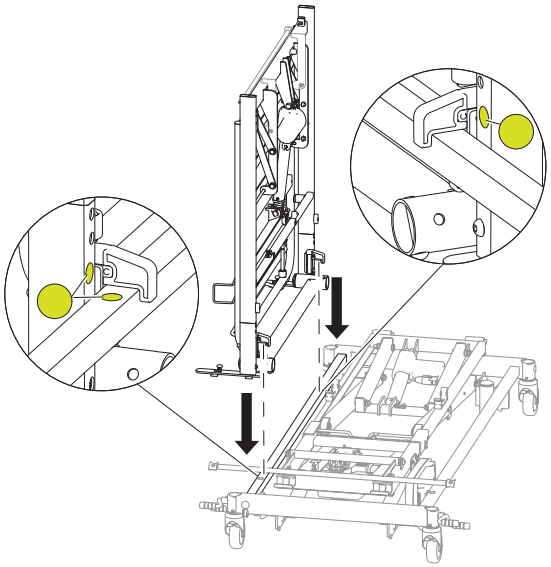
12. Reset the system. Depending on the hand control used, see *7.6 Service functions on standard hand control, page 23* or *7.7 Service functions on hand control with LCD, page 23*.

## 5.5 Transport Position

NordBed Optimo and NordBed Optimo Wide only.

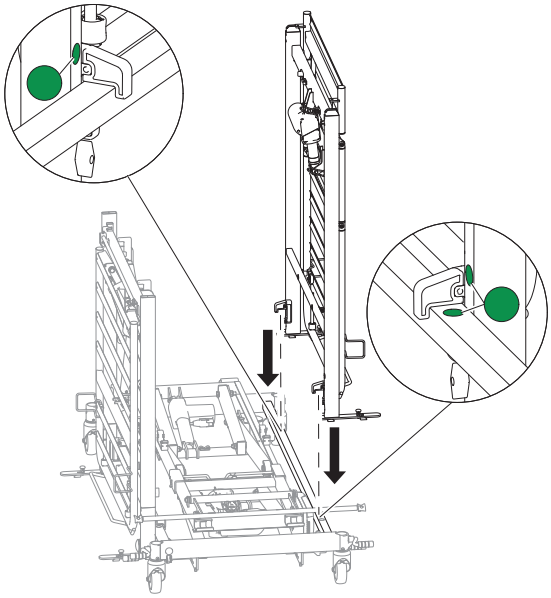
**Bed to transport position**

1. Disassemble the mattress platform. See *5.1 Dismounting the Mattress Support Platform, page 10*.
2. 



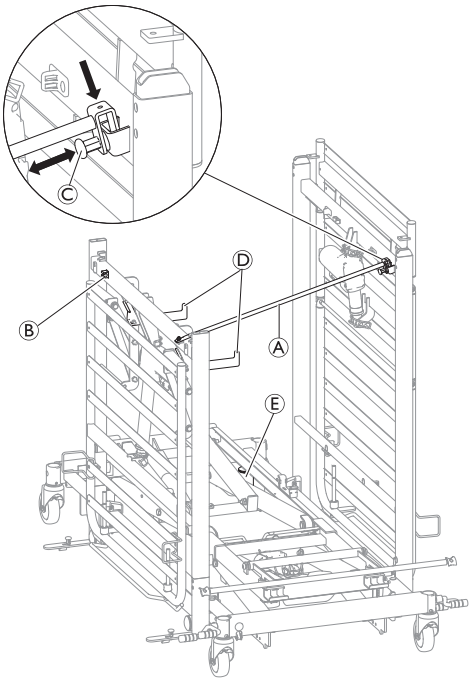
Place the two hooks of yellow marked half (upper half of the mattress support platform) on the yellow marked side tube of the base.

3. 



Place the two hooks of the green marked half (lower half of the mattress support platform) on the green marked side tube of the base frame.

4.




Pull the distance stick Ⓐ out of its fixation clip Ⓑ and swing it over to the opposite side.

5. Pull out the cotter pin Ⓒ and push the distance stick into the bracket from above. Let go of the cotter pin Ⓒ and make sure that the spring is fully engaged and the distance stick is properly fixed.
6. Fold down both transport hooks Ⓓ.
7. Place the bed ends and side rails on the hooks Ⓓ.
8. Place the mattress between the sections.
9. Place the lifting pole in the tube Ⓔ on the base frame.

**Transport position to bed**

1. Remove lifting pole, mattress, side rails and bed ends.
2. Fold up transport hooks .
3. Pull out the cotter pin Ⓒ and pull the distance stick upwards and out of the bracket.
4. Swing the distance stick Ⓐ over to the opposite side and attach it to its fixation clip Ⓑ.
5. Lift the two halves of the mattress support platform of the base frame.
6. Assemble the mattress platform. See *5.4 Mounting the Mattress Support Platform, page 13*.

# 6 Mattress retainers

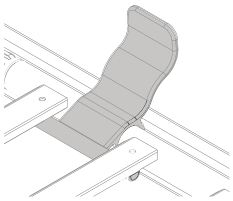
Mattress retainers keep the mattress in place when the user is moving in the bed or in/out of bed. They also enable the mattress to follow the movement when the bed is profiled using the hand control.

**WARNING!**
**Risk of injury**
if the mattress retainers are removed, the mattress can slide sideways and cause the user to fall out of the bed or get trapped in the bed.
- Always use mattress retainers and be careful to put them back after any adjustments.
- Always use the right configuration depending on the bed width.
- Always place the retainers at the correct place according to instruction.

The mattress retainers must be placed in different positions depending on the width of the bed.

**Mounting mattress retainers**

1.



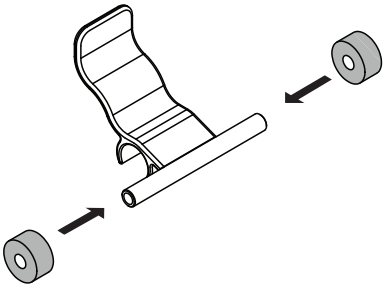
Clip the mattress retainer down, over the mattress frame.

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

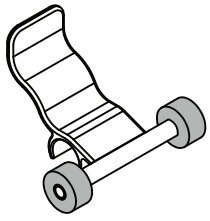
Use the retainer with rubber cylinder when using a 83/85 cm wide mattress.

**Mounting the rubber cylinder**

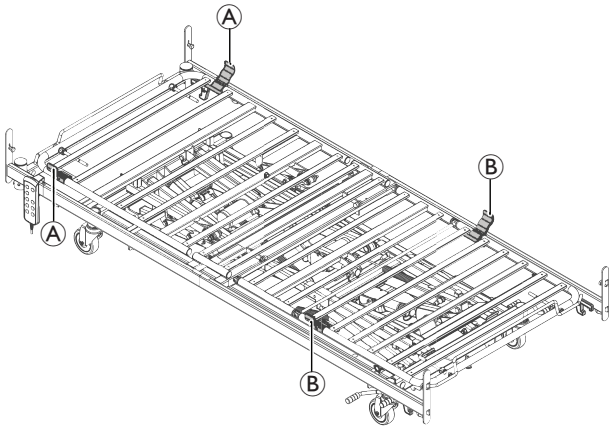
1.



2.



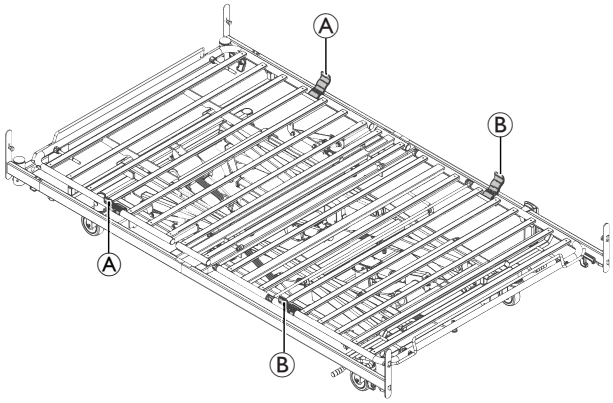
**For bed widths 90 —105 cm**




From head end of the bed - Place the mattress retainers Ⓐ between lath 1 and 2.

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

**For bed width 120 cm**




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

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

# 7 Servicing

## 7.1 General servicing information

**CAUTION!**
**Risk of injury or damage**
— Do not perform any maintenance or service procedures while the product is in use.

**NOTICE!**
— The mattress support must be supported during service inspections, to prevent accidental lowering.
— Only personnel who have received the necessary instructions or training may perform service and maintenance of the bed.
— After reconditioning the bed, or if bed functions change, service must be carried out according to the check list.

A service contract can be made in the countries, where Invacare has its own sales company. In certain countries Invacare offers courses in service and maintenance of the bed. Spare parts lists and additional user manuals are available from Invacare.

**Before Use**

- Ensure that all manual and electrical parts functions correctly and are in a secure state.
- Check, by raising and lowering the bed, that the shear arms run smoothly in the guideways.

**After three months**

- Ensure that all manual and electrical parts are functioning, and tighten bolts, screws, nuts, etc.

**Every year**

- We recommend a safety test comprising the actuators' performance and mechanical state.

**Every second year**

- We strongly recommend a service according to the below checklist after two years of normal use and then every second year.

Actuators, hand control and control unit are serviced by exchanging the faulty part.

### 7.1.1 Checklist - Maintenance

**Checkpoints**

☐ Circlips, cotter pins and plastic fixing ring - properly locked and intact.
☐ Screws - tightened.
☐ Weldings - intact.
☐ Check the guideways - no bending.
☐ Side rail locking and moving system - properly locking and running smoothly.
☐ Castor fittings - tightened.
☐ Castor brakes - locking properly.
☐ Height adjustment actuators - running properly.
☐ Mattress support section actuators - running properly.
☐ Cables - correctly wired and undamaged.
☐ Electric plugs - undamaged.
☐ Cable insulation and actuator housings – no cracks or damages.
☐ Damaged coating - repaired.
☐ Full length side rails - straps not frayed or cracked.
☐ Accessories - correctly assembled and correct function.

## 7.2 Inspection after relocation - Prepare for new user

**NOTICE!**
When the bed has been relocated; before given to a new user it has to be thoroughly inspected.
— Inspection must be done by a trained professional.
— For regular maintenance see maintenance chart.

### 7.2.1 Checklist - After relocation

**Checkpoints**

☐ Check that the lifting mechanism is properly engaged in the lower pivoting points and guideways on the base.
☐ Check that the subframe latches, locking both lifting mechanisms together, are properly engaged and there is tension on blue marked string (only Optimo and Optimo Wide 105).
☐ Check that the side tubes of the mattress support platform are fully inserted, aligned and locked.
☐ Check the locking of the actuators (pipe pins correctly mounted).
☐ Check the electronic wiring for the actuators (cables not squeezed).
☐ Check that the enclosing of the actuators are intact (no cracks that enables fluids to pierce).
☐ Check that all actuators have been properly reset and have their full range.
☐ Check that all cables are properly mounted on the control unit.
☐ Check the sections of the mattress support by using the hand control to activate all functions of the moving parts.
☐ Check the function of the brakes.
☐ Check that the bed ends are properly locked (pins all the way in for Sanne brackets or fully seated for the Quick brackets).
☐ Check the locking function(s) of the side rails.
☐ Check that all bed slats are intact.

## 7.3 Cleaning and Disinfection

### 7.3.1 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.

**NOTICE!**
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.

### 7.3.2 Cleaning Intervals

**NOTICE!**
Regular cleaning and disinfection enhance smooth operation, increases the service life and prevents contamination.
Clean and disinfect the product:
- regularly while 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.

### 7.3.3 Cleaning Instructions

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

### 7.3.4 Cleaning in automatic washing systems

**NOTICE!**
Only certain components of the product tolerate cleaning in automatic washing systems or with high pressure cleaning equipment.
- The washability of the components must be determined by authorized personnel.
- If the components cannot tolerate cleaning in automatic washing systems, with high pressure cleaning equipment or if it is unclear, they must be cleaned by hand.

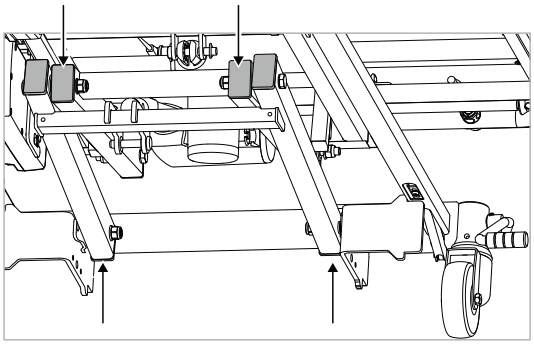
The IP classification determines the washability of a electrical component. The IP classification of each electrical component is stated on its serial label.

- Electronics classified IPx4 and/or IPx6 may NOT be washed with high-pressure cleaning equipment or in an automatic washing system.
- Electronics classified IPx6w can be washed with high-pressure cleaning equipment or in an automatic washing system.

**Preparation**

Before washing with high-pressure cleaning equipment or in automatic washing systems, perform the following:

- ☐ Remove all electronics not classified as IPx6w.
- ☐ Remove power plug from mains.
- ☐ Remove all textiles (including mattress and upholstery).
- ☐ Remove all wooden parts.
- ☐ Remove aluminium side rails.
- ☐ Make sure all plugs on the bed are placed in their sockets during washing.
- ☐ Protected all disconnected (loose) plugs with plastic covers and all empty sockets e.g. with blind plugs.
- ☐ Place the bed in one of the following ways:
  – Placed on its castors
  – Placed on the side on a trolley
- ☐ Remove plastic caps from the lower part of the scissors on both sides of the bed.



- ☐ If the bed is placed on its castors: Run the Hi-Lo actuators all the way up/out. Run all the other actuators down/in.
- ☐ If the bed is placed on the side on trolley: Run the Hi-Lo actuators all the way down/in. Run all the other actuators down/in.

**Washing**

- Max temp: 70 °C
- Solvent/ chemicals: Cleaning solution with pH 5 - 8
- Max. Duration: 2 min
- Max pressure: 8 Bar, with a nozzle distance of 30 cm from part

**Rinsing/ flushing**

- Max temp: 85 °C
- Solvent/ chemicals: Rinsing solution with pH 5 - 8
- Max. Duration: 20 sec
- Max pressure: 8 Bar, with a nozzle distance of 30 cm from part

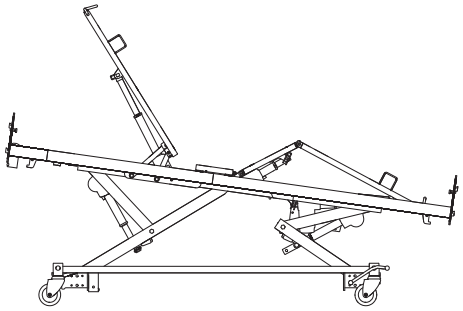
**Drying**

- Method: In washing system or drying cabinet
- Max temp: 50 °C
- Max. Duration: 10 min

Alternatively, let the bed dry in room temperature.

Depending on the placement of the bed, perform one of the following procedures, to allow the water to run out of the tubes:

- Bed placed on its castors



1. Bring the bed into sitting position (raised back section and thigh section with tilted mattress support platform) using the ErgoMove™ function on the hand control. After it Use Anti-Trend function to increase the inclination of the bed. Left in this position for 5 minutes.
2. Shake the bed to remove the water drops.

- Bed placed on trolley
  1. Place the bed on its castors, remove the trolley and make the 2 steps from the “Bed placed on castors”.

### 7.3.5 After washing

Necessary precautions before taking the bed into use again.

1. Inspect carefully for remaining water and wipe off with a dry cloth. Especially check the guideways.
2. Test all electric functions.
3. Recondition the bed according to section *7.2 Inspection after relocation - Prepare for new user, page 18*.

### 7.3.6 Disinfection Instruction

**In Domestic Care**

- Disinfectant: We recommend using an alcohol-based surface disinfectant (with 70-90% alcohol).

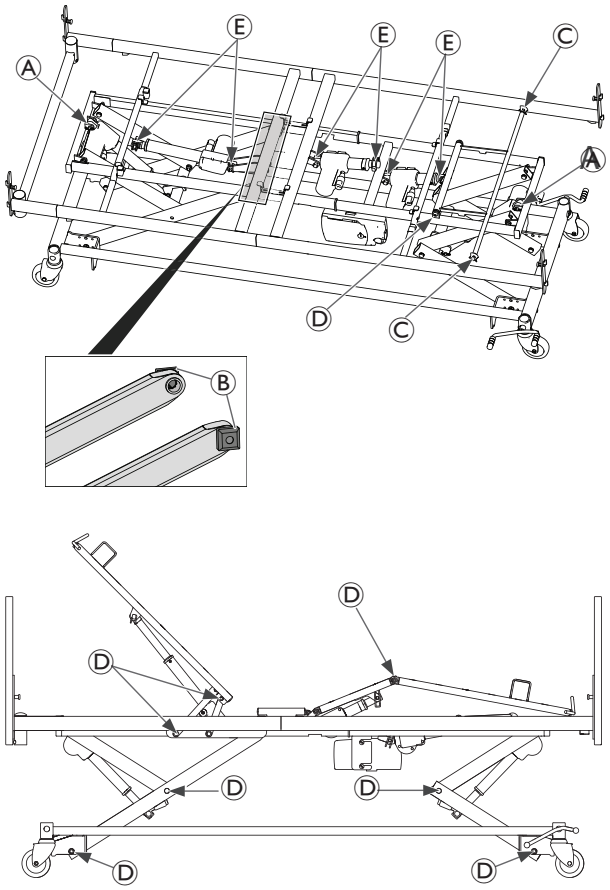
  Read the instructions on the label of your disinfectant. It provides information on the activity spectrum (bacteria, fungi and/or viruses), material compatibility and the correct exposure time.

1. Ensure the surfaces are cleaned before disinfection.
2. Moisten a soft cloth and wipe-disinfect all accessible surfaces and keep them moistened for the exposure time stated on the label of the disinfectant.
3. Allow the product to air-dry.

**In Institutional Care**

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

### 7.3.7 Lubrication




We recommend lubricating the bed according to the following table:

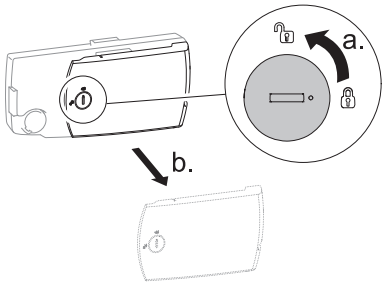
| Part of bed | | Lubrication method |
|---|---|---|
| Ⓐ | Hi-Lo actuator (rear attachment) | Grease |
| Ⓑ | Gliding shoes | Grease |
| Ⓒ | Lifting arm roll | Grease |
| Ⓓ | Bearings and rotation points | Oil (medically clean) |
| Ⓔ | Motor suspension | Oil (medically clean) |

For ordering of correct oil and grease, please contact your Invacare dealer.

## 7.4 Control Unit

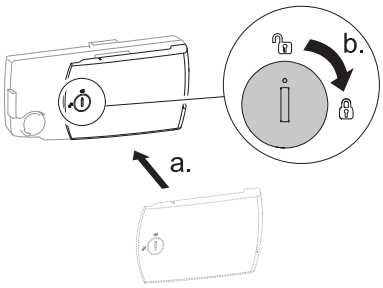
The control unit is placed underneath the mattress support platform near the foot end of the bed.

1.

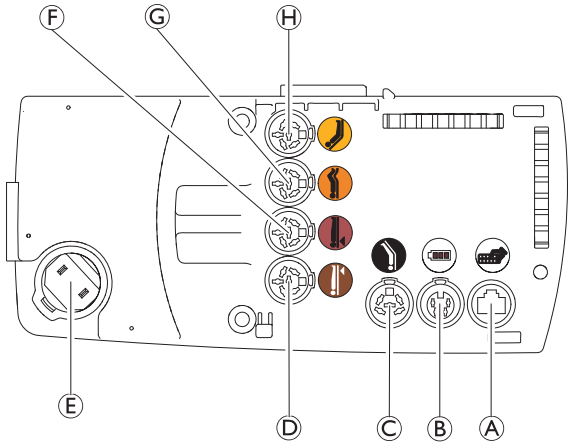



To open the control unit:Press in the two latches Ⓐ on the control unit with a pointed object (e.g. screwdriver) and open the lid.

2.




To close the control unit, place the lid and turn the lock 90 degrees clockwise.




The sockets inside the control unit are labeled with symbols, indicating where to connect the respective plugs. Additionally, the sockets for the actuators are labeled with colors matching the color coding on the actuator cables.

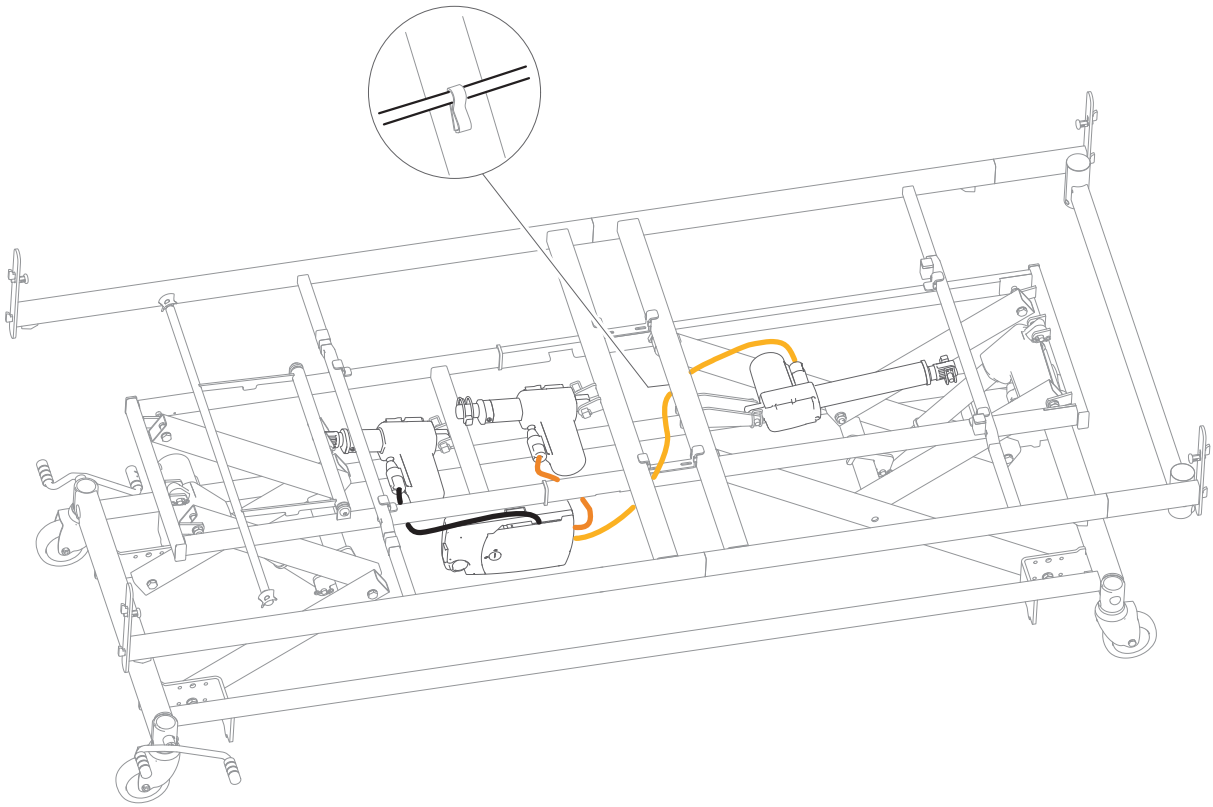
- Ⓐ Hand control
- Ⓑ Backup battery (optional)
- Ⓒ Leg section actuator (not available on all configurations)
- Ⓓ Height adjustment actuator, lower half
- Ⓔ Mains power cable
- Ⓕ Height adjustment actuator, upper half
- Ⓖ Tight section actuator
- Ⓗ Back section actuator

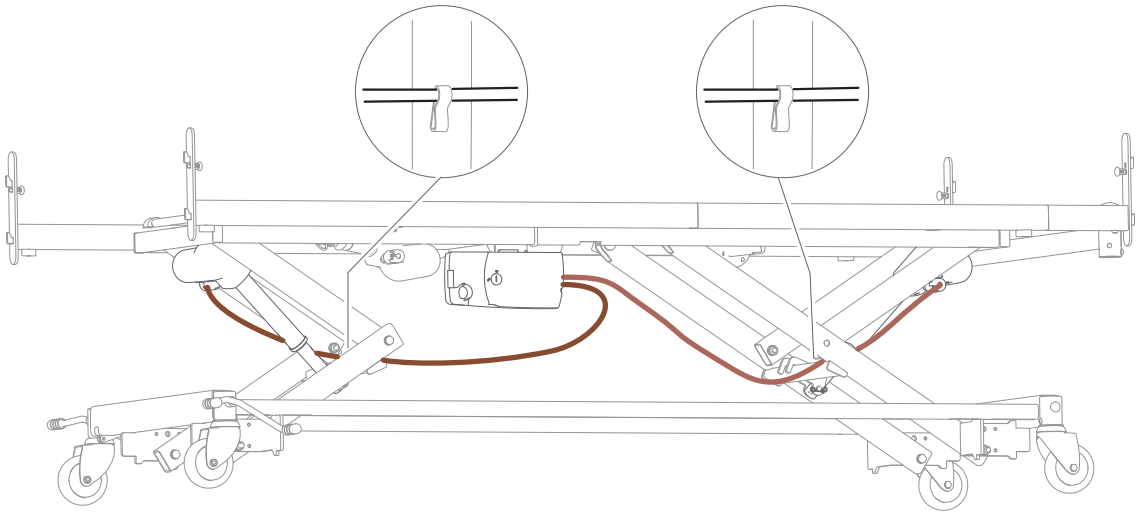
! **NOTICE!**
ALWAYS power off the control unit before replacing the hand control with a different model.

## 7.5 Wiring

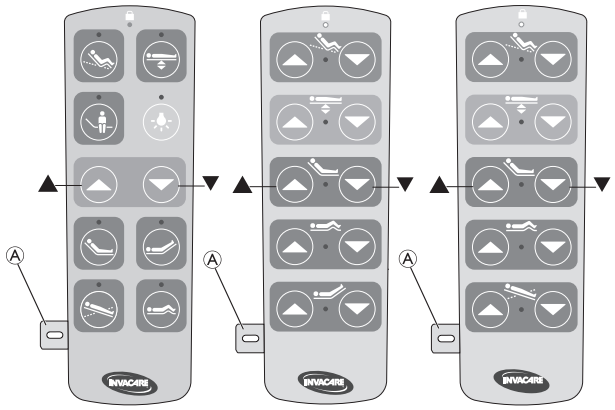
**NOTICE!**
Ensure the cables are mounted and routed correctly
- Make sure cables do not touch the floor and cannot block the castors.
- Make sure cables cannot get squeezed by moving parts during operation.

For the correct routing of the cables between the actuators and the control unit see the following pictures.





## 7.6 Service functions on standard hand control

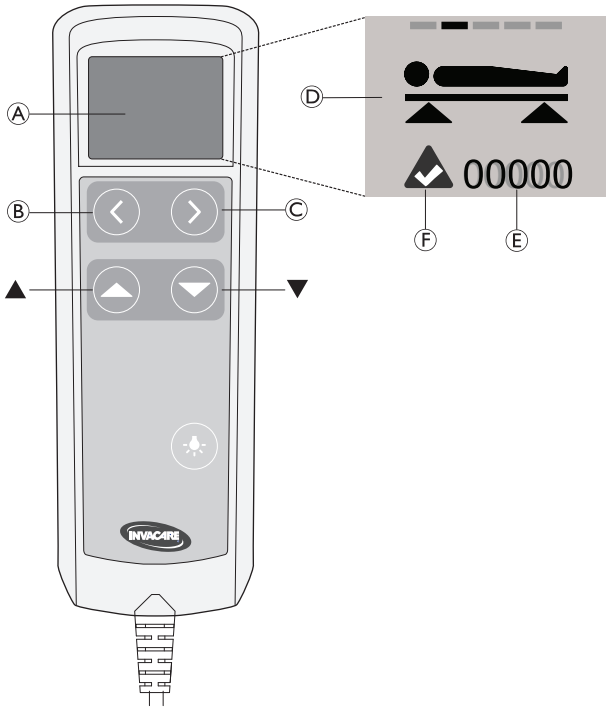


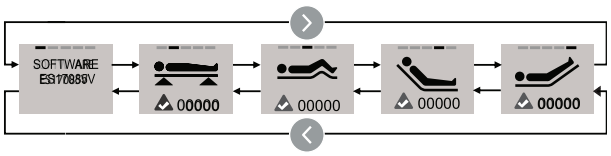

**NOTICE!**
Bed can get damaged during this procedure in case of malfunction of one height adjustment actuator.
- Keep attention on the height adjustment actuators movement. If only one is moving, and the bed starts to tilt immediately interrupt the reset.
- Inspect the cables for misconnection or damage, and consider replacing the actuator.

**Resetting the system**

1. Insert the magnetic key Ⓐ in the slot on the side of the hand control.
2. Press and hold button ▲ and ▼ for 3 seconds to initiate the system reset and hold the buttons pressed until the following sequence is complete:
   a. The height adjustment actuators move to their maximum position (bed in highest position).
   b. All actuators of the mattress support sections move to their minimum position (mattress support completely flat)
   c. The height adjustment actuators move to their minimum position (bed in lowest position).

## 7.7 Service functions on hand control with LCD




**Service mode**

To enter or exit the service mode:

1. Press buttons Ⓑ, Ⓒ, ▲ and ▼ at the same time for 3 seconds.

   In service mode the display Ⓐ shows a symbol Ⓓ, a movement counter Ⓔ and a status indicator Ⓕ of the selected actuator and additional functions are available.

**Resetting the movement counter**

While in service mode:

1. Press button Ⓑ or Ⓒ until the symbol for the desired actuator is displayed.
2. Press buttons Ⓑ and Ⓒ at the same time for 3 seconds to zero the movement counter of the selected actuator.

### Resetting the system

> **NOTICE!**
> Bed can get damaged during this procedure in case of malfunction of one height adjustment actuator.
> — Keep attention on the height adjustment actuators movement. If only one is moving, and the bed starts to tilt immediately interrupt the reset.
> — Inspect the cables for misconnection or damage, and consider replacing the actuator.

While in service mode:

1. Press and hold button ▲ and ▼ for 3 seconds to initiate the system reset and hold the buttons pressed until the following sequence is complete:
    a. The height adjustment actuators move to their maximum position (bed in highest position).
    b. All actuators of the mattress support sections move to their minimum position (mattress support completely flat).
    c. The height adjustment actuators move to their minimum position (bed in lowest position).

### Status indicator

If the status indicator Ⓕ displays an error:

1. Reset the system (as described before) and check if the error persist.
2. When the error persist the actuator must be replaced.

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Yes, you can.