LOJER®

For easy care

Lojer Modux nursing bed

Instructions for use

Version 2.5 (en)
4/3/2022

Content

1 Lojer Modux nursing bed

This document contains instructions on the use of Lojer Modux nursing beds. The beds are available in width of 80 cm (model 480) and 90 cm (model 490). The Lojer Modux 480 and -490 models have electrical adjustment functions for height, back section, and thigh and leg section. The beds can also be adjusted to Anti-Trendelenburg -position.

⚠ *Read these instructions carefully before using the nursing bed.*

⚠ *Follow the instructions provided in the manual to ensure the bed is used safely and in a manner that complies with the warranty policy.*

1.1 User groups

The Owner or Holder is any natural or legal person who have ownership of the product. The owner is responsible for the safe use of the product and is responsible for ensuring that the product is always used safely including maintenance, cleaning and disposal. It is the responsibility of the holder to ensure that all users, including temporary staff, have received appropriate training in the use of the equipment and are familiar with the risks involved in using the equipment and the dangers of improper use.
The Intended User is a person who, by virtue of his education, experience or familiarization, is capable of operating the device, must be able to anticipate and identify risks associated with the use of the device and be able to assess the patient's clinical status, suitability to use the device and treatment risks. It is the user's responsibility to ensure that the treatment meets the requirements of all applicable local laws and regulations.
A Patient is a person who needs bed for treatment; is weak, ill, injured or needs the bed otherwise to compensate functional limitations, e.g. handicapped persons. In private home use environment, the patient can also be Holder and user.
Obligation for incident reporting: User and/or patient should report any serious incident that has occurred in relation to this device to the manufacturer (Lojer Oy) and the competent authority of the Member State in which the user and/or patient is established.

⚠ *Make sure that the bed is only used by trained and competent users!*

1.2 Intended use and use environment

Lojer Modux nursing beds are designed to be used in institutions, care homes, and in home care for patients with a minimum age of 12 years, a minimum height of 146 cm, a minimum weight of 40 kg, and a minimum body mass index (BMI) of 17 (in accordance with standard EN 60601-2-52: 2010, use environment categories 3 and 4). The bed is intended as a patient's sleeping and care platform for the duration of illness, treatment or observation or to compensate for physical disabilities.

Intended environments of use are, for example:

- nursing home, retirement home or similar care facility
- rehabilitation or geriatric facilities
- home care for private individuals, care provided in a domestic area

Body mass index (BMI) is calculated as follows: $BMI = \frac{\text{patient's weight (kg)}}{\text{patient's height (m)}^2}$

For example: $[BMI] = \frac{40\ kg}{1{,}5\ m \times 1{,}5m} = 17{,}78 \rightarrow BMI\ OK$

$[BMI] = \frac{36\ kg}{1{,}46\ m \times 1{,}46m} = 16{,}89 \rightarrow BMI\ NOT\ OK!$

$[BMI] = \frac{50\ kg}{1{,}72\ m \times 1{,}72m} = 16{,}90 \rightarrow BMI\ NOT\ OK!$

⚠ *If patient height, weight or BMI is below given figures risk of entrapment between siderail and/or bed structures increases.*

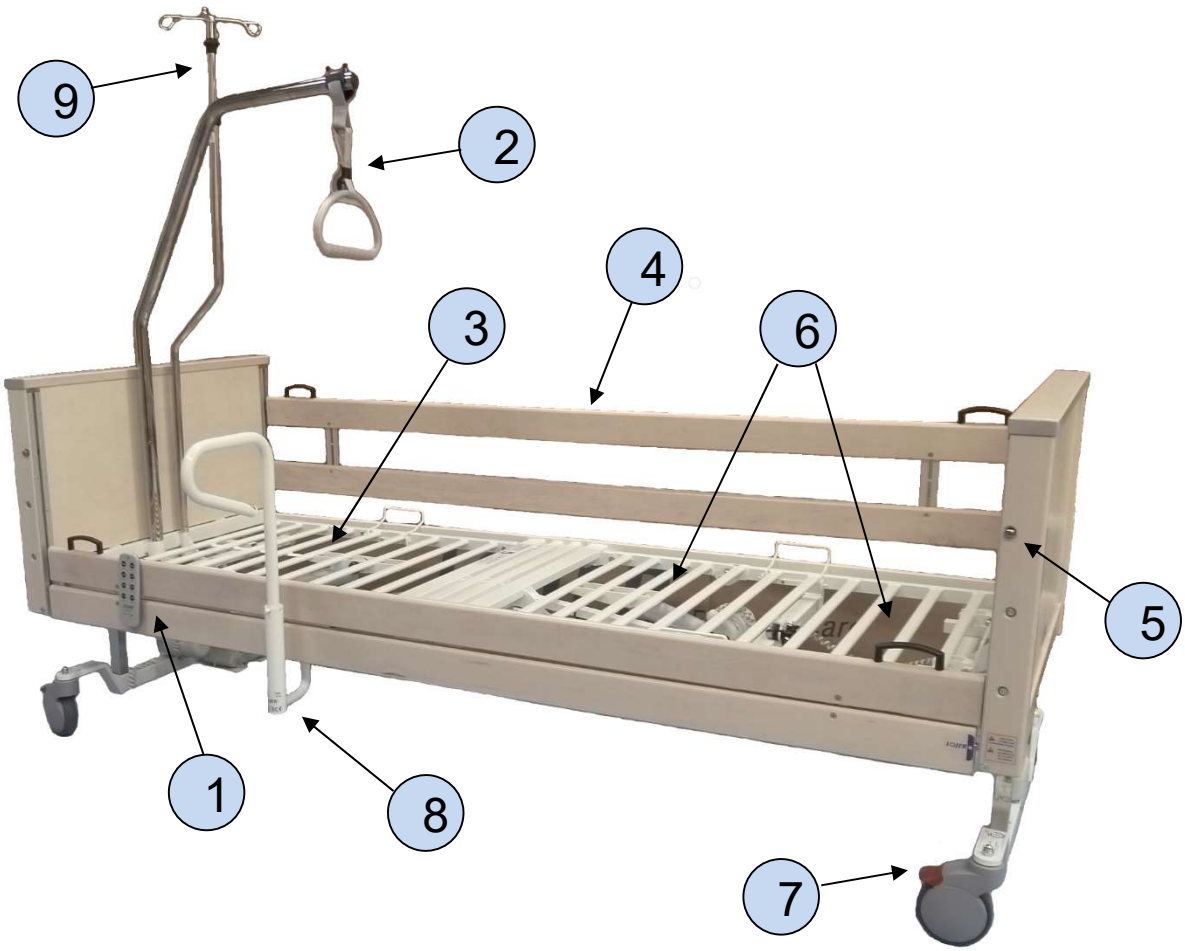
⚠ *With patients' taller than 185 cm and/or psychically restless or confused, risk of falling, trapping and suffocation increases.*

⚠ *Lying on the bed may cause pressure ulcers. If necessary, use counteractive procedures to prevent pressure ulcers.*

⚠ *When the nursing bed is used for home care, the user must ensure its safe use and assess the patient's condition and the possible need for additional safety equipment.*

⚠ *It is forbidden to transfer or carry patients in the MODUX nursing bed.*

2 Lojer Modux nursing bed components



1 Hand control unit
2 Lifting pole (accessory)
3 Back section
4 Side rail
5 Side rail release button
6 Adjustable thigh and foot section
7 Brake pedal
8 Lift support (accessory)
9 IV-pole (accessory)

Image 1. Lojer Modux nursing bed

2.1 Accessories

The following optional, separately supplied accessories may be added to the Lojer Modux nursing bed:

- Lifting pole (101912)
- IV pole (60121 or 60122)
- Lift support (71100KP)
- Mattress
- Cushioned rail guard (101182PRO)
- Raised side rail (71025KP)
- Dining tray (102588, 102589)
- Dual locking system for wheels (see Chapter 6.5.2)

⚠ *Only manufacturer-approved accessories intended for the bed type in question should be used with the beds.*

3 Acceptance inspection and storage

Check the packaging for damage to ensure the product has not sustained any damage during transport. Remove all packaging materials, including any supporting pieces used during transport.
The shipment must include all the items listed on the packing slip. If you notice any defects or missing items, contact the product's supplier immediately.

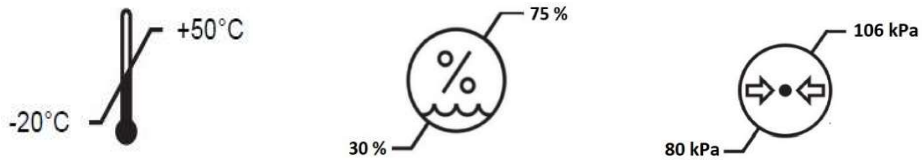


Image 2. Symbols and limit values for transport and storage temperature, humidity and atmospheric pressure.

⚠ *The bed must be stored or transported at temperatures between -20 and +50 °C, with relative humidity between 30 and 75 % and atmospheric pressure 80 kPa to 106 kPa.*

4 Safety instructions

Observe the following safety instructions.

 *Estimate patients' clinical state and risks of using the nursing bed (Danger of falling, trapping and suffocation)*

 *With very restless or anxious patient, using side rails may cause danger of trapping, falling or suffocation. Consider using alternative protective measures.*

 *If the patient is allowed to use the adjustment functions of the bed without supervision, the patient's capacity to understand the functions must be ascertained and they must be fully instructed in the safe use of the functions.*

 *Only manufacturer-approved accessories intended for the bed type in question are allowed to be used with the beds.*

 *The rescue sheet should be attached to the bed in such a way that it does not prevent the movements of the platform's mechanisms. The rescue sheet should not be attached to the bed frame or through parts of the frame, as this may prevent the adjustment of the platform.*

 *Only one user or patient at a time may be on the sleeping surface.*

 *The nursing bed should always be left in its lowest position to minimise the risk of falling or crushing and increase user safety.*

 *Before adjusting the bed or the side rails or before preparing the bed for transport or use, make sure that nothing or nobody is under them or between their mechanisms (risk of crushing).*

 *If there is a danger of the patient falling out of the bed, the side rails must always be left in the raised position when the patient is unattended (risk of falling).*

 *If an operational fault is detected in the bed or any of its accessories, it must immediately be removed from use and taken for servicing.*

 *Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the Modux, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.*

If patients' family member, visitor or other layperson is allowed to use the functions of the bed, their capability to use the bed safely must be ascertained and they must be fully instructed in the safe use of the functions. If necessary, lock the movements of the bed from the hand control unit.

If safety precautions are applied to ensure the safety of patient, e.g., side rails must always be in raised position, make sure that family member, visitor or other layperson does not remove these safety precautions from use. Instruct family member, visitor, or other layperson about safety precautions and if necessary, supervise that the instructions are followed.

4.1 Safe use of the power cord

Observe the following safety instructions when handling the power cord.

Never tie the power cord to the bed because a lifting movement may cut it. Mains plug is considered as disconnecting device. Make sure that you can quickly disconnect the power cord in case of emergency.

Check that the power cord travels away from the head of the bed and that the cord does not get wedged into the mechanism during raising. The socket should always be located at the same end where the power cord attaches to the bed, max. 2 m away from the head of the bed.

Always disconnect the power cord before moving the bed. Make sure that the cord is not crushed between the bed's structures or castors.

If the power cord is cut or damaged, disconnect it immediately. Risk of electric shock.

Make sure that there is enough space between the socket and the bed and that raising the bed will not damage the socket, the plug or the cord.

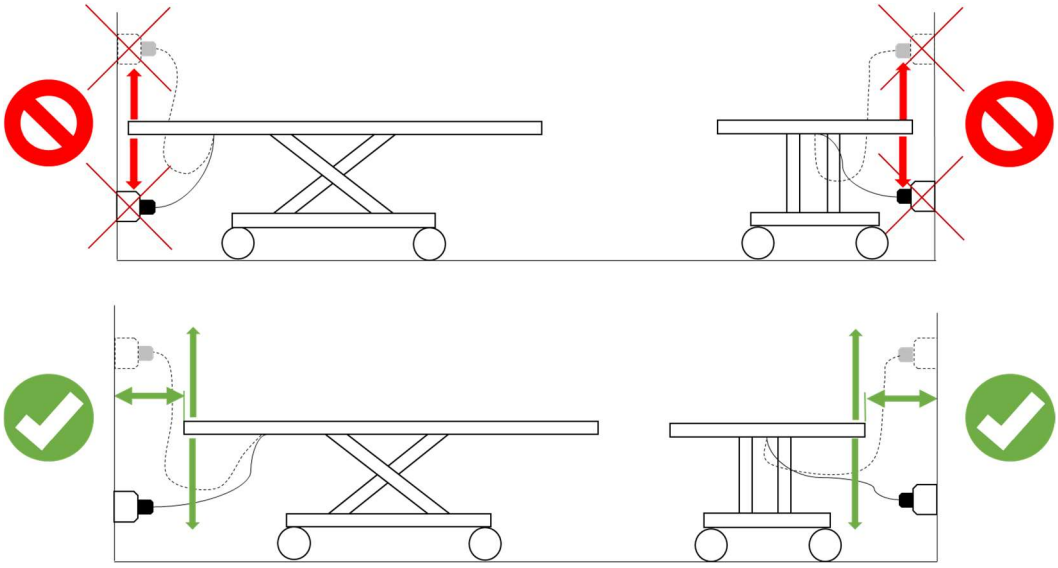


Image 3. Place the device on a safe distance from the power socket

4.2 Symbols

Following table contains explanations for symbols used in the Lojer Modux nursing beds' markings, packaging and in this user instructions.

Read the instructions	CE-marking	This product is a medical device
Warning	Danger of squeezing	Serial number
Manufacturer	Manufacturing date	Model number

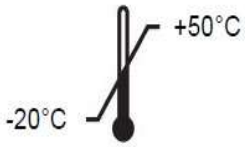
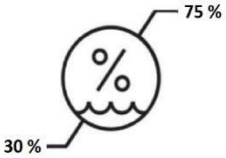
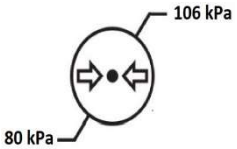
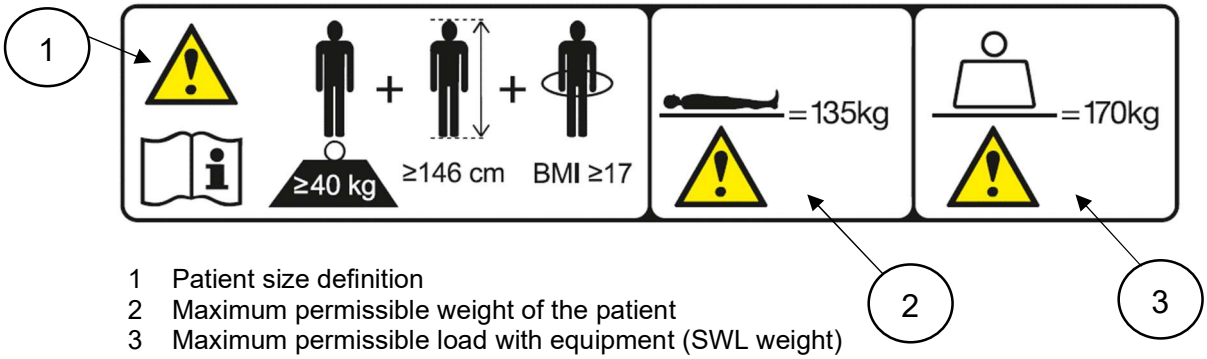
 Electrical protection class II	 Type BF Applied Part	 Indoor use only
IP X4 *) IP protection class according to EN 60529 (Note: marking in electric component is not considering whole device. See chapter 13.1).	 Weight of the device	 Product marked with this symbol shall not be processed as household waste. See Recycling -Chapter.
 Symbol of temperature limits for transportation, storage or operating (Check values!)	 Symbol for humidity limits; transportation, storage or operating (Check values!)	 Symbol for atmospheric pressure limits; transportation, storage or operating (Check values!)
 This side up (packaging label)	 Fragile, handle with care (packaging label)	 Store in a dry place (packaging label)

Table 1. Explanations of used symbols

*) IP = ingress protection. The IP rating is an international rating system for electrical equipment and enclosures. For example, IPX4, the first letter X (or number) after IP, means protecting the device from the ingress of dust or particles. X indicates that the requirement does not exist or has not been tested. The second marking after IP indicates protection against water or water droplets, e.g. the number 4 indicates protection against splashing water.

4.3 Warning stickers used on the nursing bed

Observe the following instructions and warnings attached to the bed frame when using the nursing bed.



1 Patient size definition
2 Maximum permissible weight of the patient
3 Maximum permissible load with equipment (SWL weight)

Image 4. Patient size, maximum patient weight and safe working load

Check the weight limits provided for in standard EN 60601-2-52 from the technical information in section 13.

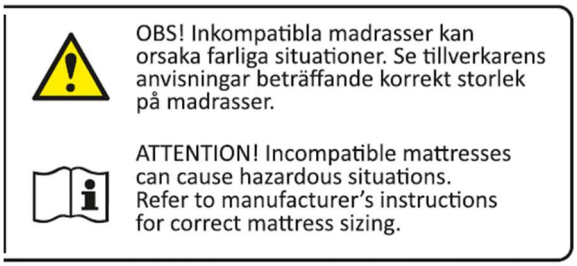


Image 5. Using a mattress

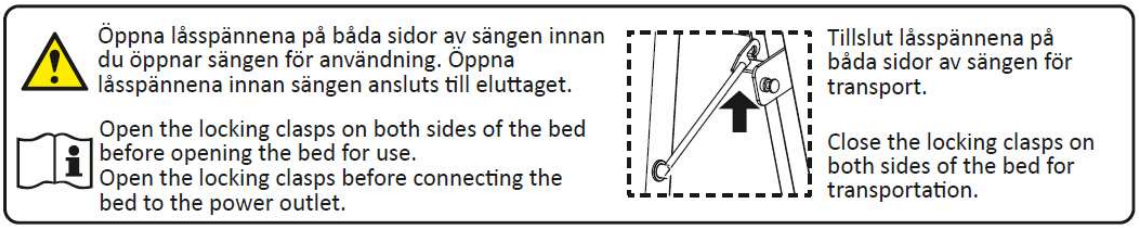


Image 6. Preparing the bed for use and use of the locking hooks

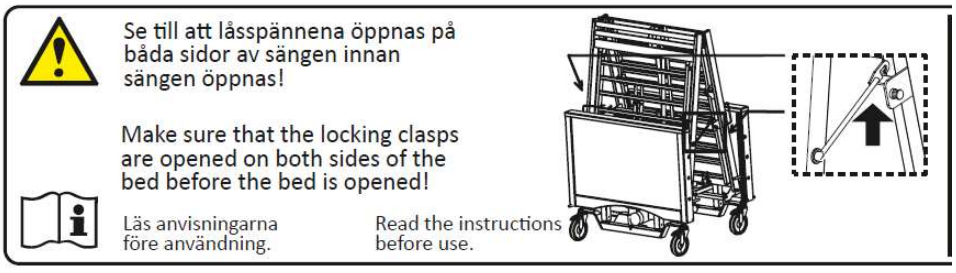


Image 7. Preparing the bed for use and use of the locking hooks

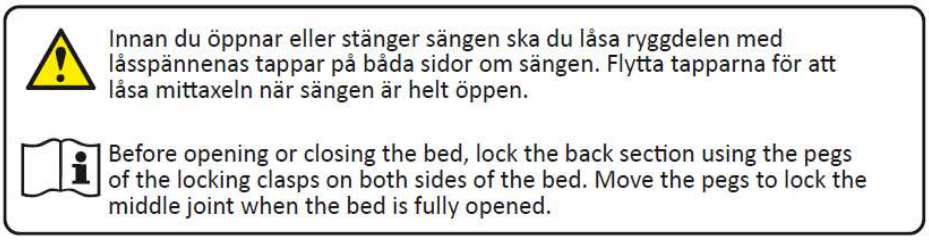


Image 8. Preparing the bed for use and using the locking hooks

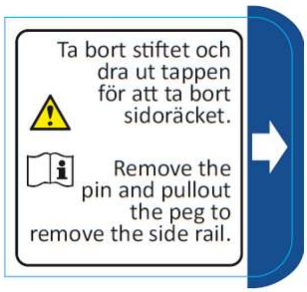


Image 9. Removing the side rail

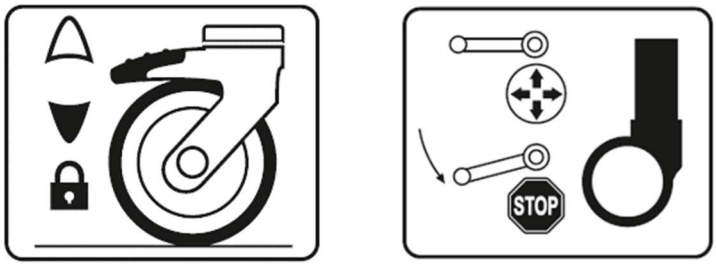


Image 10. Using brakes, individual and dual locking wheels

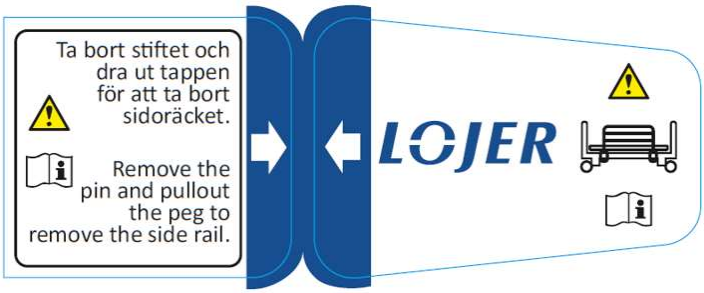


Image 11. Marking of siderail compatibility

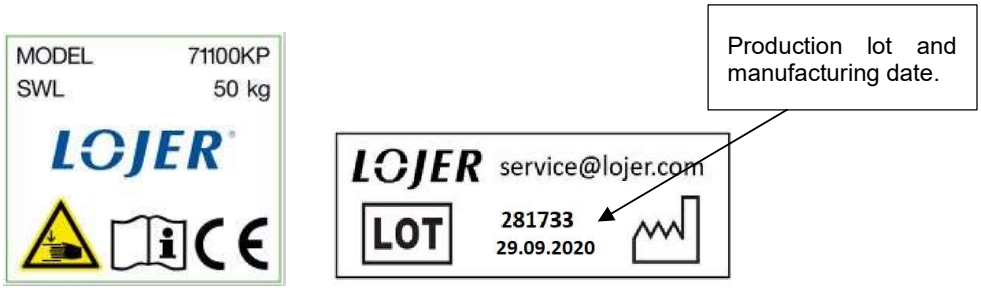


Image 12. Marking of accessories, identification and production information

5 Before use

Before using the nursing bed, take the following measures.

 *Read the instructions for use before using the nursing bed.*

 *Connect the nursing bed to 120–240 V ~, 50/60 Hz voltage. Check section 4.1 of the manual for the safe use of the power cord.*

 *Make sure that the power cord is not tied to anything. If the power cord is tied to something, it may break when the bed is moved.*

 *When the bed is stationary, always keep the wheels locked.*

 *Make sure that the surroundings of the device are safe. Make sure there is adequate room around and above the device. Make sure there are no sharp corners or potentially hazardous objects around the device.*

 *Make sure that the side rails work flawlessly and lock in the top position.*

 *If the bed is placed against the wall, side rail facing the wall must be raised up (Risk of squeezing).*

 *Do not place the bed on a sloped floor. Unlocking the wheels on a sloped floor may cause a hazardous situation.*

 *Make sure that all the movements of the bed work properly.*

 *Clean the product as instructed before use.*

6 Using the nursing bed

The nursing bed is intended for use in a normal, dry indoor environment. The room temperature may vary between + 10 °C and + 40 °C, and the relative humidity between 30 – 75 %, atmospheric pressure 80 kPA to 106 kPa, altitude < 2000 m. If bed is taken to use immediately after storage or transport, take notice of temperature and environmental conditions! Let bed stabilize to normal operational temperature and environmental conditions before use.

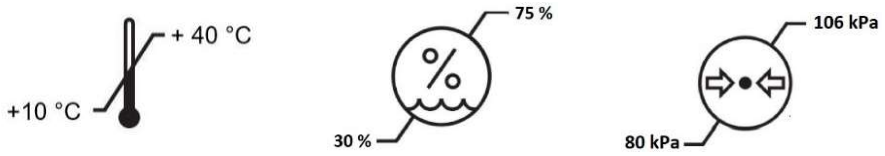


Image 13. Symbols and limit values for operating temperature, humidity and atmospheric pressure.

⚠ *If the patient is allowed to use the adjustment functions of the bed without supervision, the patient's capacity to understand the functions must be ascertained and they must be fully instructed in the safe use of the functions.*

⚠ *Raising back-, thigh- and/or leg-section increases risks for squeezing, suffocation and falling from bed.*

⚠ *Release the pushbutton of the hand control to stop any movement of the bed. In case of malfunction, press the pushbutton of a reverse movement in the hand control to stop a movement for the as long the button is pushed. Bed's movement can also be stopped by unplugging the power cord.*

⚠ *Do not use the bed's electric functions consecutively for longer than the allowed maximum time of 2 minutes. Longer use may cause the transformer to overheat. If you use the electric functions continuously for two minutes, you must not use them again for 18 minutes.*

6.1 Hand control unit

Nursing bed has a hand control unit for adjustment of functions. The hand control unit has buttons for the adjustment of the height of the bed, the tilt of the back section, and the raising and lowering of the thigh and leg section. The hand control unit also has an adjustment function for the tilt of the sleeping surface (Anti-Trendelenburg) and a button for the simultaneous lowering of all parts. Hand control lights indicating status of bed requires attention from user. Green LED light in handset, means bed is connected to mains and ready for use. Yellow LED light, caution, prompt response from user required.

The appearance and the layout of the buttons might differ slightly between different hand control unit models. However, all models have identical button functions and symbols.

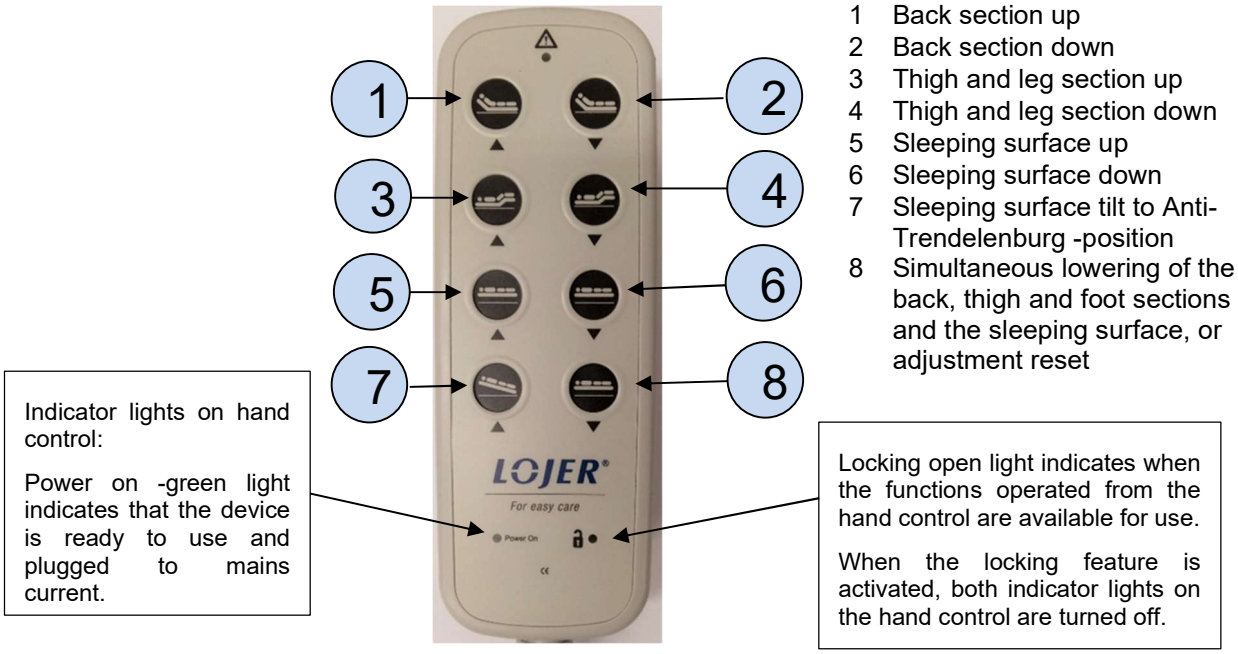
Deliberate or accidental misuse of the hand control must be prevented by placing the hand control out of reach of restless patients and children or by locking the movements of the bed from the hand control.

Never tie the hand control to the bed or to the side rail because adjustments of the bed and movement of the side rail can damage the wire. Stop using damaged hand control immediately.

Before moving the bed make sure that hand controls' wire is not in danger of crushing under the wheels.

Press only one button at a time from hand control unit. Pressing multiple buttons simultaneously can lead to improper operation of the equipment in the surroundings.

Never leave handset close to restless or anxious patient neither never place handset inside siderail perimeter when resting or sleeping. Danger of strangulation in handset wire or fault-activation of handset.



1 Back section up
2 Back section down
3 Thigh and leg section up
4 Thigh and leg section down
5 Sleeping surface up
6 Sleeping surface down
7 Sleeping surface tilt to Anti-Trendelenburg -position
8 Simultaneous lowering of the back, thigh and foot sections and the sleeping surface, or adjustment reset

Image 14. Hand control

6.2 Locking the functions of the bed

The hand control has a mechanical locking feature for locking the functions of the bed. The locking can be activated by Allen key from back side of the hand control. The Allen key is included in the beds' delivery. When using the locking function make sure the Allen key is left out of patients' and bystanders' reach. Ensure that the locking is activated by testing movement-functions from the hand control. The hand control has an indicator light on front side for indicating when the locking feature is activated (see Image 14 and 15).

Image 15. Locking the hand control

6.3 Preparing the nursing bed for use

The Lojer Modux nursing bed is delivered from the factory in the transport position and must be prepared for use in accordance with the following instructions. A quick guide with the same instructions is also provided with the bed.

1. Make sure that there are no unnecessary objects between the bed's structures and that there is enough space around the bed to open it.
2. Lock the wheels from the end where the power cord is located (see section 6.5.1 and 6.5.2).

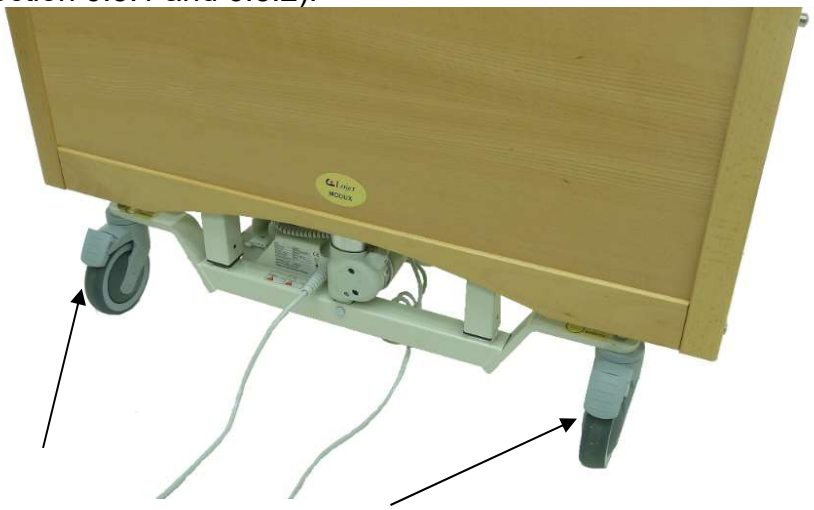


Image 16. Locking wheels from power cord (head) end of the bed

3. Open the locking hooks from both sides of the bed. However, do not remove them yet. Plug in the power cord.

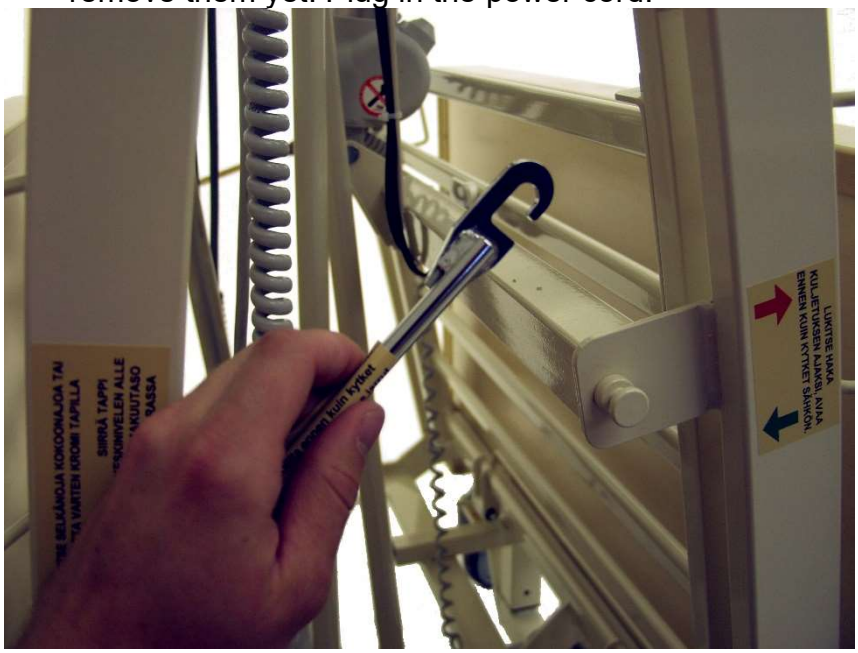


Image 17. Locking hook

4. Make sure that the cord of the hand-held controller is not trapped between the structures.
5. Press the back section down button (see section 6.7) until the sleeping surface is in the operating position.

Image 18. Adjusting the sleeping surface into the operating position

6. When the sleeping surface is in the operating position, pull out the back section locking hooks from both sides. Move the locking hooks to lock the

middle joint at the bed's folding point by pushing the pins of the locking hooks through the bushings. Turn the locking hooks onto the holders below the sleeping surface (see image 19).

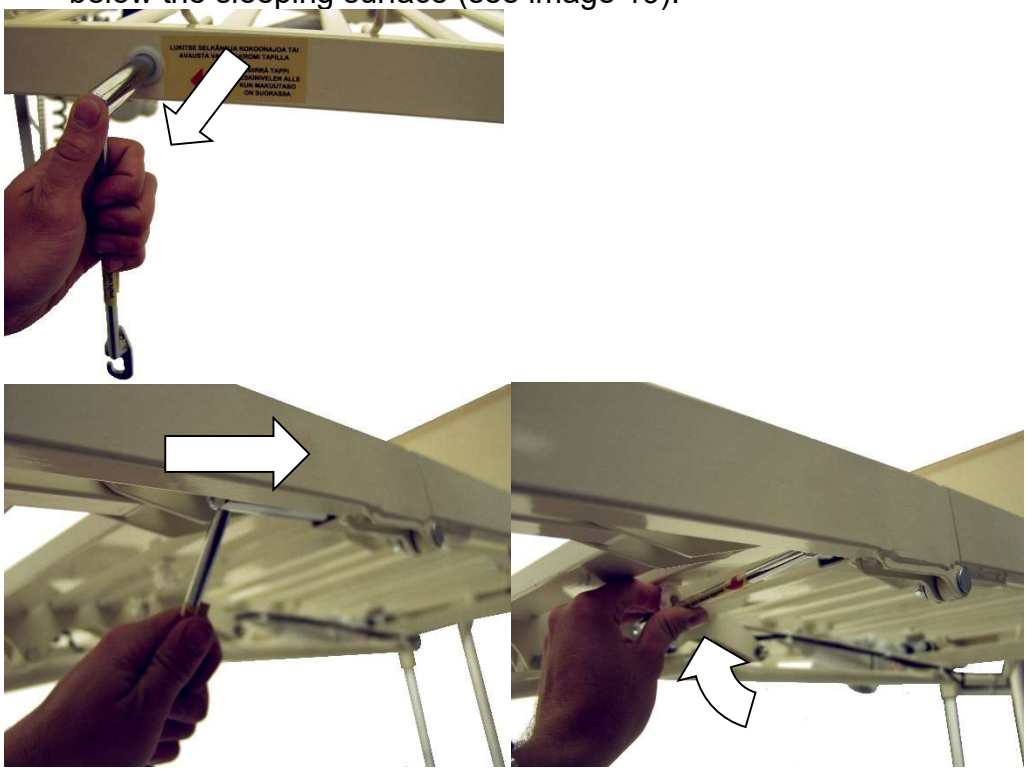


Image 19. Moving the locking hooks

6.4 Installing and uninstalling the side rails

The side rails are removed from their place when the bed is in the transport position. The side rails must be removed before the bed is placed in the transport position. Check, that bed and side rails are marked with compatibility label below.

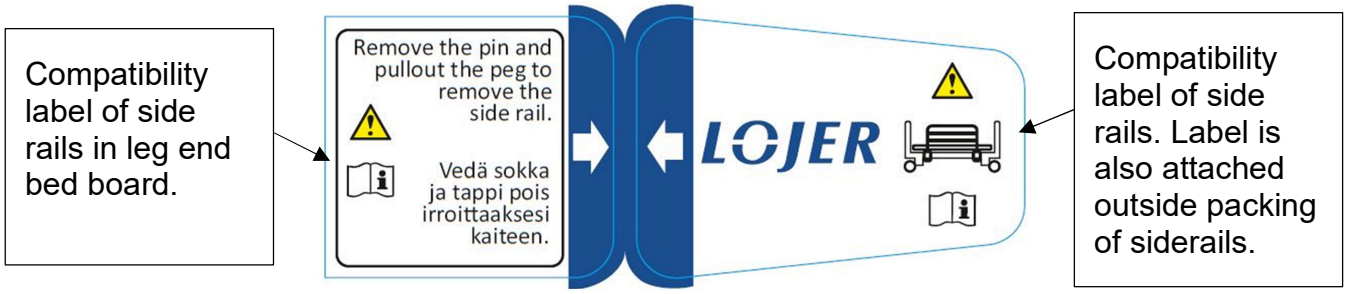


Image 20. Compatibility label for matching bed model and side rails

To install the side rails:

1. Push the holes at one end of the side rail into the slide pegs at the end of the bed to which the power cord attaches.

Image 21. Power cord end

2. Remove the peg and pin, which are removable only from the foot end of the bed.

Image 22. Peg and pin

3. Pull the slides out of the bar. Observe the position and order of the slides!

Image 23. Slides

4. Insert the slide pegs into the holes at the other end of the side rail. Make sure not to change the position or order of the slides!
5. Lift the side rail onto the bar and make sure it locks in the top position.
6. NB! If order of the slides change, the side rail can't be raised to high position without pressing side rail release -button (see image 32). Order and position of the slides is correct, when it is possible to lift the side rail up by lifting from side rails' handle.

Image 24. Foot of the bed

7. Put the peg in place and push the pin through the hole in the peg.
8. Check that the side rail is working properly.

To remove the side rails:

1. Support the side rail or raise it into the top position and remove the peg and pin from the foot of the bed (see image 22).
2. Lower the side rail from the bar and pull the other end of the side rail off the pegs (see image 23).
3. Remove the slides from the foot end of the side rail (see image 23).
4. Place the slides back onto the bar. Observe the correct order and position of the slides (see image 23).
5. Place the peg and pin in place (see image 22).

When the bed is in transport position, the side rails can be stored vertically between the headboard and footboard.

6.5 Wheel systems

In nursing bed two different type wheel systems are used. Individual or dual locking wheel systems. In individual wheel system every wheel must be locked or released separately. In dual wheel system, both wheels at the same end are locked at the same time, however, so that the wheels at the foot and head end must be locked separately.

6.5.1 Individually locking wheels

Lock the wheel by pressing pedal down. When pedal is up, the wheel is unlocked. Each wheel must be locked separately and all wheels must be locked to ensure that bed remains stationary.

1 Wheel unlocked
2 Wheel locked

Image 25. Locking wheels, individual locking wheels

6.5.2 Dual locking system for wheels

In dual locking wheel system, head- or foot end wheels can be locked simultaneously by pressing brake lever down from either side of the bed. Use of dual locking system is easier when bed is located close to wall and it would be difficult to access brake lever on wall side. To lock wheels, press lever down, to release wheel brake, raise lever to horizontal position. All wheels must be locked to ensure bed remains stationary.

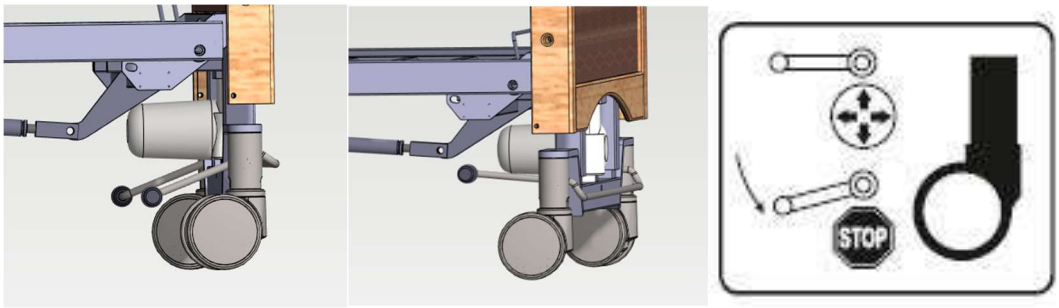


Image 26. Dual locking, lever down, brake on, lever up, brake off.

> ⚠ *Remember to lock all wheels in bed, head- and foot end and both sides of bed wheels. Each wheel must be locked separately, depending of the used wheel system!*

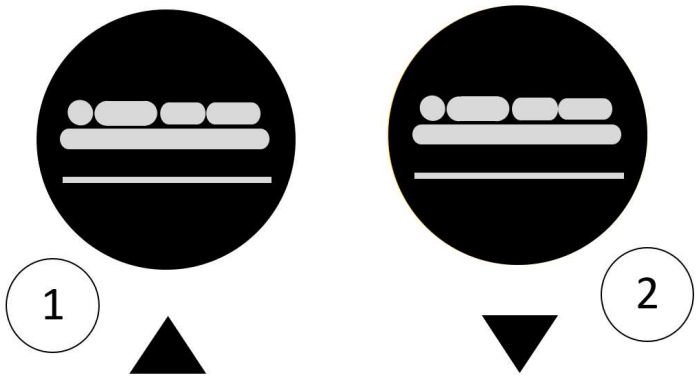
6.6 Sleeping surface raising and tilting

The sleeping surface's lifting mechanism is powered by an electric motor. The height of the nursing bed can be adjusted between 30–69 cm and with optional dual locking wheel systems between 35-74 cm.

⚠ *When adjusting the bed, always make sure that there are no people or objects under the bed or between the structures (risk of squeezing).*

⚠ *The nursing bed should always be left in its lowest position to minimize the risk of falling or crushing and increase user safety.*

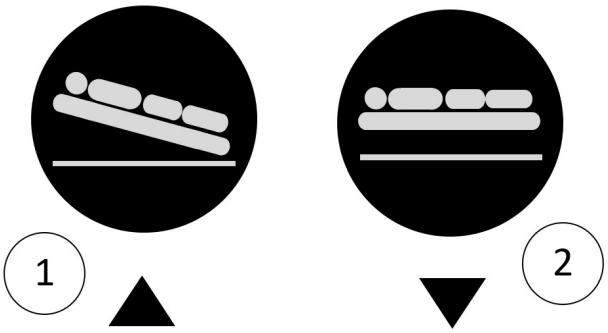
Raise or lower the sleeping surface by pushing the appropriate button on the hand control unit.



1 Raising the bed surface
2 Lowering the bed surface

Image 27. Raising and lowering the sleeping surface

Tilt the sleeping surface to Anti-Trendelenburg -position (head end of the bed raised) by pushing the appropriate button on the hand control unit (Item 1 in Image 28).
Reset all the sections of the sleeping surface (back, thigh and leg sections, sleeping surface and tilt) by pushing the appropriate button on the hand control unit (Item 2 in Image 28).



1 Tilting the sleeping surface to Anti-Trendelenburg
2 Reset all the sections of the sleeping surface

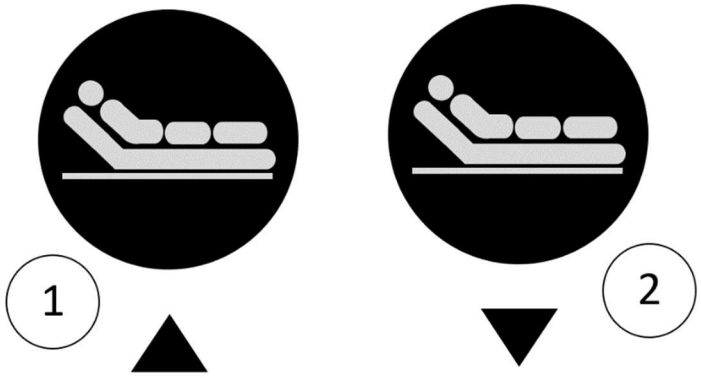
Image 28. Adjustments for the Anti-Trendelenburg and reset -function

6.7 Adjusting the back section

The tilt angle of the nursing bed can be adjusted between 0–71°.

> ⚠ *Make sure your hands are not between the backrest and the upper frame parts when adjusting the backrest (danger of crushing).*
>
> ⚠ *There is a danger of crushing when the lift support is in place and the back section is adjusted.*

Raise or lower the back section by pushing the appropriate button on the hand control unit.



1 Raising the back section
2 Lowering the back section

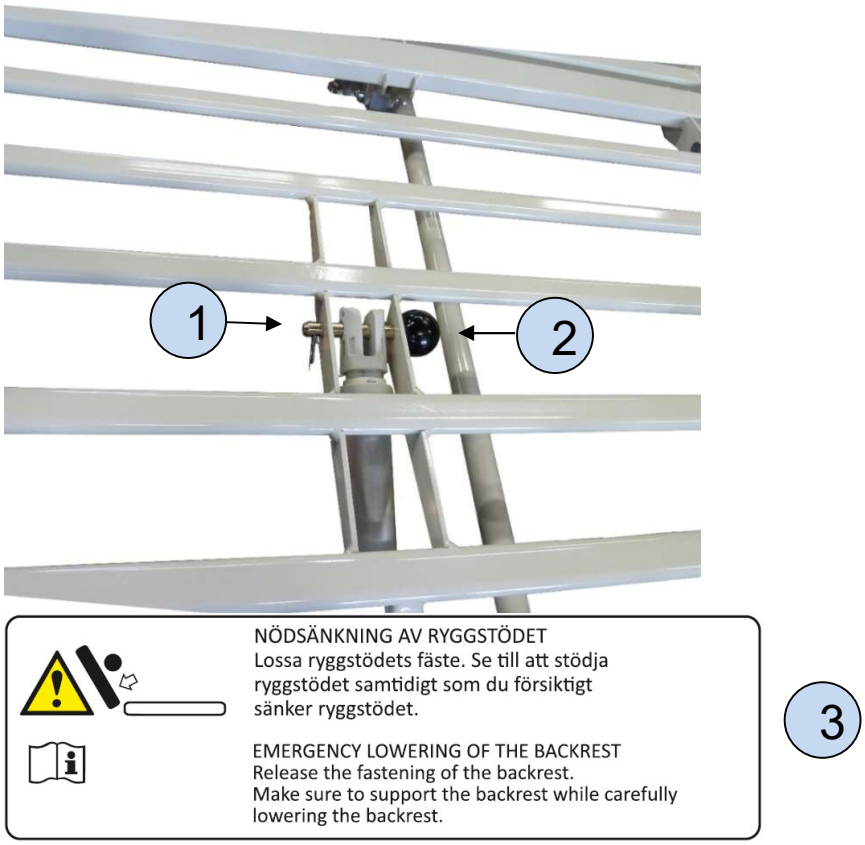
Image 29. Raising and lowering the back section

6.8 Emergency lowering of the back section

During power failures and in case of device failure, you can manually lower the back section of the hospital bed when the bed is in the operating position.

> ⚠ *Make sure your hands are not between the backrest and the upper frame parts when using CPR mechanism. Use CPR function only in emergencies and be particularly careful when doing so (danger of crushing).*

1. Support the back section with one hand.
2. Remove the emergency lowering pin at the attachment of the upper end of the back section motor.
3. Pull off the emergency lowering peg.
4. Gently lower the back section.



1 Emergency lowering pin
2 Emergency lowering peg
3 Marking label concerning emergency lowering of the backrest

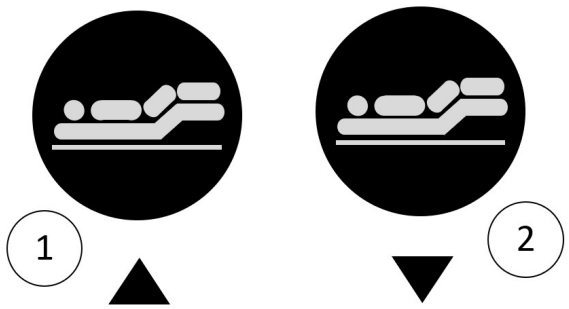
Image 30. Back section emergency lowering peg and pin, marking label

6.9 Adjusting the thigh and leg section

The Lojer Modux 480 and -490 models have electronically operated adjustment functions for the thigh and leg section.

> ⚠ *Make sure that nothing and nobody is between the leg rest and upper frame when you are adjusting it (danger of crushing).*

To adjust the thigh section to the desired angle, press the thigh section up button on the hand control unit (Item 1 in Image 31). Towards the end of the adjustment, the leg section raises to a horizontal position.
When using the lowering function (Item 2 in Image 31), the leg and thigh sections are adjusted in the reverse order



1 Raising the thigh and leg section
2 Lowering the thigh and leg section

Image 31. Raising and lowering the thigh and leg section

6.10 Side rails

The nursing bed has adjustable side rails.

Do not use the bed without side rails! (Danger of falling, squeezing and suffocation).

With very restless or anxious patient, using side rails may cause danger of trapping, falling or suffocation. Consider using alternative protective measures.

Before adjusting the side rails, make sure that nothing and nobody is under them or between their mechanisms (risk of crushing).

The side rail locking mechanism must be checked every time it is adjusted (an audible click can be heard). The side rail must not be tied or secured by any other means than its own mechanism.

The side rails of the bed must be free to be lifted and lowered without any external objects (mattress, hoses, bedding etc.) supporting or wedging the side rail, so that the side rail cannot be held in the raised position without its own locking mechanism being engaged.

When using the side rails, please note the manufacturer's recommended mattress dimensions.

When properly installed, the side rails can move freely.

To lock the side rail in the top position, raise both ends. The safe use of the side rails requires that both ends of the side rail are in up position.
To lower the rail, lift the handle and press the button at the end of the bed (see image 32).

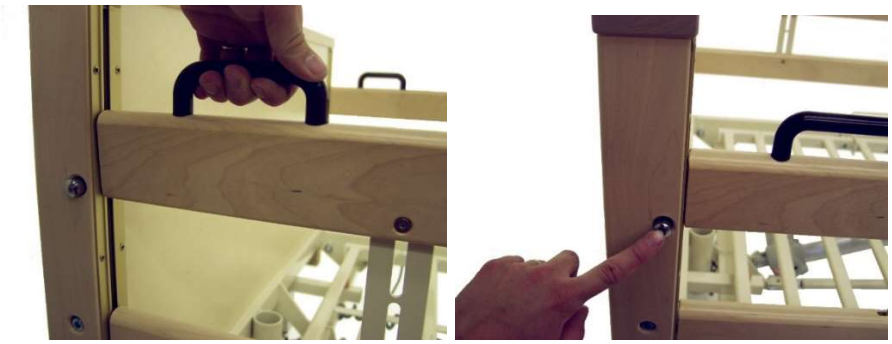


Image 32. Adjustable side rail

6.11 Moving the bed into transport position

In the transport position, the Lojer Modux nursing bed can fit through small spaces and takes up little storage room.

1. Remove the side rails and any accessories (see section 6.4).
2. Make sure there is space around the bed.
3. Lock the wheels at the end to which the power cord attaches (see section 6.5.1 and 6.5.2).
4. Plug in the power cord and adjust the sleeping surface, back section and foot section to their lowest position (see image 33).
5. Remove the locking hooks from their holders around the middle joint on both sides of the bed and pull them out. Move the locking hooks to lock the back section on both sides by pushing the locking hooks pegs thru holes in sideframe and back section. Make sure that the handedness of the locking hooks remains correct to make sure the hooks doesn't open during transportation (see images 17,19 and 33).

Image 33. Resetting adjustments and locking hook peg in the locking hole of the back section

6. Adjust the bed into the transport position by pressing the back section up button. Unplug the power cord.

Image 34. Moving the bed into transport position

7. Close the locking hooks onto both sides of the bed (see image 17).

7 Installation and use of accessories

This section describes how to install and use nursing bed accessories. The accessories are supplied separately.

*Use only **bed's** accessories approved by the manufacturer!*

When transporting the bed, it is recommended that all protruding accessories are removed to minimise the risk of collisions.

When using other than bed`s accessories make sure that accessories used doesn`t generate danger to patient or for usability of the bed (for example squeezing gaps).

7.1 Lifting pole (101912)

The patient can use the lifting pole as an aid to change position or to get up from the bed.
Mount the pole into the sleeve by the headboard in such a way that it cannot move sideways. The pole can be mounted on the left or the right side of the bed.
The pole is mounted correctly when the handle is hanging above the sleeping surface and the pole does not move sideways.
Maximum load (SWL) for the lifting pole is 75 kg.

Danger of crushing fingers between the lifting pole and the end of the bed. Exercise caution when installing the pole.

Before the lifting pole is used, make sure that it is correctly positioned above the bed and locked so that it cannot move sideways.

Check that there is space above the bed. When you raise the bed the lifting pole rises with it.

7.2 Lift support (71100KP)

The lift support is used as an aid for the patient when getting in and out of the bed. The maximum load (SWL) for the lift support is 50 kg.

Remove the lift support handle or raise the side rails for a period when patient is sleeping.

Never turn the handle of the support inwards to the bed.

There is a danger of crushing when adjusting the lift support and the back section.

There is a risk of crushing when using the side rails and the lift support simultaneously.

Do not use the lift support as an optional accessory to replace side rails (risk of crushing and -falling).

Do not attach anything to the lift support.

When setting the lift support to the fastening sleeve, make sure that the lift support is locked in place and does not rotate.

Check the lift support frame fastening and functionality regularly.

Make sure that the space surrounding the bed is safe. There must be enough space around the bed – including above it. There must be no sharp corners or potentially hazardous objects around the bed. When the bed is raised, the lift support also raises, increasing the space required for the bed.

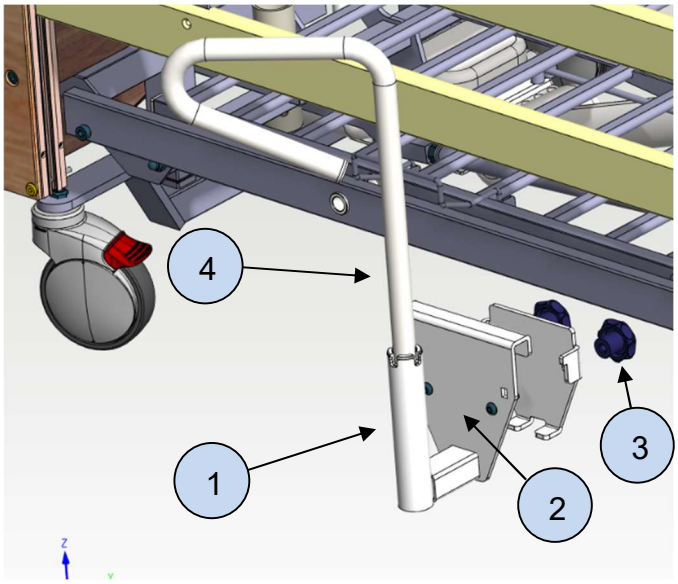


Image 35. Lift support components

The lift support includes components illustrated in image 35:

1. Support frame
2. Mounting plate
3. Finger screws
4. Handle

The lift support is mounted on the bed in the following order:

1. Raise the side rail and the back section.
2. Remove the finger screws, mounting plate and handle from the support frame.
3. Attach the support frame on the bed frame tube. The recommended position for the lift support is approx. 10 cm forward from the folding point of the back section.

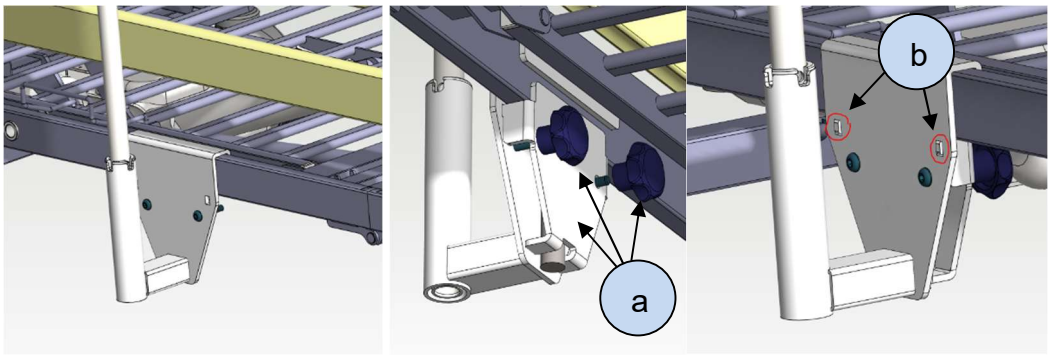


Image 36. Installing the frame and mounting plate and fastening the finger screws

4. Attach mounting plate from backside and attach finger screws (a).
5. Adjust support frame on correct place if necessary. Check (b), that mounting plate is correctly attached and tighten both finger screws (a).
6. Place the lift support handle on the lift support mounting frame, and make sure that the lift support handle locks into the swinging bracket's slots.
7. Tug handle to make sure that the lift support frame is mounted securely to the bed.

When properly installed, side rails can be moved freely.

Image 37. Lift support installed and labels used on lift support

WARNING! Risk of getting squeezed if there is a lift support attached to the bed.

7.3 Mattress

Several mattresses with different features are available for nursing beds. Use the following mattress dimensions instructed by the manufacturer:

Bed size:	**Mattress-dimensions:** **Width x Length x Height**
80 cm bed	78-80 cm x 200-205 cm x min.9 - max.13 cm
90 cm bed	88-90 cm x 200-205 cm x min.9 - max.13 cm

Density of the mattress should be at least 40 kg/m³ and firmness of mattresses edge, the CLD (40%) -value, should be at least 3.5 KPa.

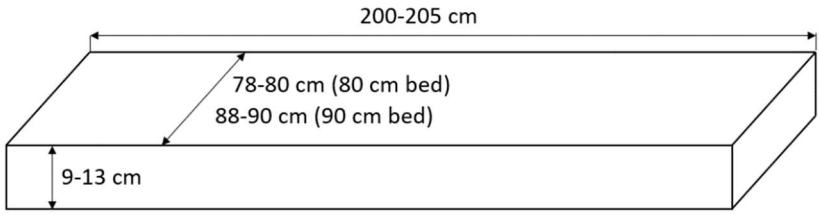


Image 38. Mattress dimensions for 80 cm and 90 cm wide beds

Setting the mattress on the sleeping surface:

The mattress shall be set on the sleeping surface in a way that it is positioned between mattress retention -guides. In the Lojer Modux -nursing beds mattress retention -guides fold against upper frame and they must be turned in the position of supporting the mattress before the mattress is set to the bed (Image 39-40). All four mattress retention -guides shall be set in the correct position.

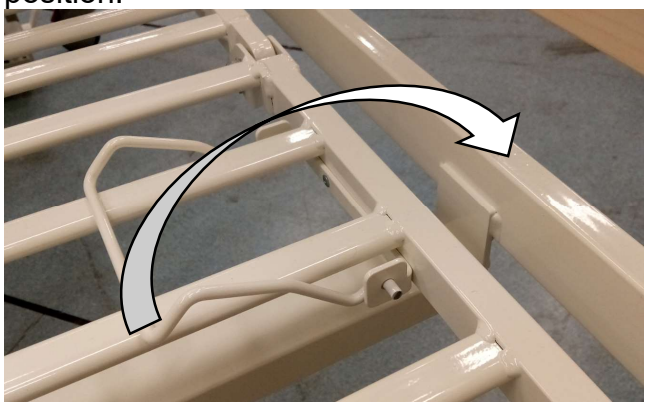


Image 39. Turning of the mattress retention guide to correct position

Image 40. The mattress retention guide in the correct position

The height and width of the mattress must be as per manufacturer's instructions.

Make sure the mattress is set between mattress retention -guides (4 pcs). Check placement of the mattress regularly.

The side rails of the bed must be free to be lifted and lowered without any external objects (mattress, hoses, bedding etc.) supporting or wedging the side rail, so that the side rail cannot be held in the raised position without its own locking mechanism being engaged.

When specialty mattress or mattress overlay is used, risk of suffocation between side rail and mattresses edge increases and risk of falling over side rail increases. Make sure specialty mattress or mattress overlay don`t move side- or length wise on mattress support platform.

It is recommended to use mattress designed to prevent pressure ulcers.

7.4 Cushioned rail guard (101182PRO)

The nursing bed can be fitted with a cushioned side rail guard. The rail guard can be used as a protective measure to prevent patient's leg or arm to get squeezed and trapped between side rails. Pay attention to the warnings considering use of the rail guard and estimate risks of using rail guard with the patient in question. The guard is padded on the inside to prevent injury to the patient.

1. Turn the rail guard over the side rail.
2. Secure the rail guard below the lower rail by attaching the Velcro strip to its counterpart inside the guard.

The rail guard does not need to be removed when the rail is lowered.
Note: The rail guard 101182PRO can’t be used together with raised side rail.

⚠ *Using rail guard on patients with limited moving capability (e.g., handicapped, or elderly patients) may cause danger of suffocation. Estimate patients' clinical state before using the rail guard.*

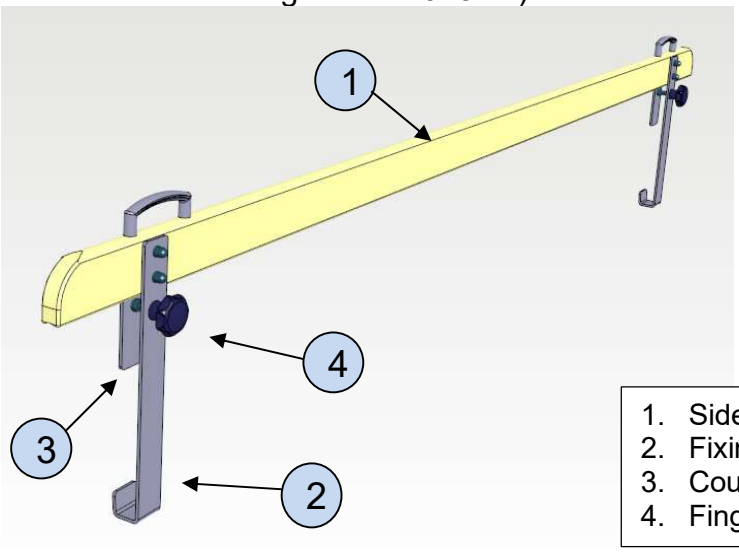
⚠ *Rail guard blocks patients' view from bed. Some patients may consider this situation distressing and become anxious (danger of falling, trapping and suffocation). Estimate patients' clinical state before using the rail guard.*

⚠ *Make sure that the bed adjustments function normally after the rail guard has been attached.*

Image 41. Cushioned rail guard

7.5 Raised side rail (71025KP)

The raised side rails are intended for increasing patient safety by preventing the patient from falling over the side rail. The use of the raised side rails allows for the use of a thicker mattress in compatible nursing beds. There are separate instructions for the installation and use of the raised side rail (Raised side rail – for nursing beds 71025KP).



1. Side rail -wood
2. Fixing bracket (2 pcs)
3. Counterpart (2 pcs)
4. Finger nut (2 pcs)

Image 42. Components of the raised side rail

The use of the raised side rails allows for the use of a mattress with a maximum height of 21 cm in the nursing bed.
Use the following mattress dimensions recommended by the manufacturer:

Bed size	Width x Length x Height
80 cm bed	78–80 cm x 200-205 cm x min. 9 – max. 21 cm
90 cm bed	88–90 cm x 200-205 cm x min. 9 – max. 21 cm

Density of the mattress should be at least 40 kg/m³ and firmness of mattresses edge, the CLD (40%) -value, should be at least 3.5 KPa.

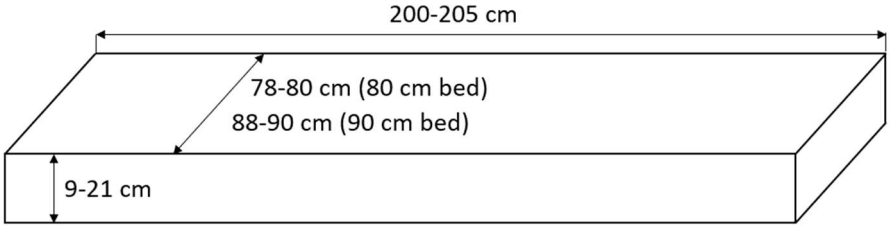


Image 43. Mattress dimensions for 80/90 cm wide beds with raised side rails

⚠ *Read and follow the instructions of the raised side rail for correct installation and use.*

⚠ *Inspect suitableness of the raised side rail to the nursing bed always before installation.*

The raised side rail is forbidden to use in a bed, where fixing brackets' hook-part remain free despite correct installation (danger of disengaging)

Use of the raised side rail is prohibited if installation cannot be done according to installation instructions (possible issue with suitability between the raised side rail and beds' side rail). Contact retailer in such cases.

Using of thick and/or soft mattress increases suffocation risk between mattresses' edge and side rail. Manufacturer cannot guarantee safety of all mattress -types, user must estimate the safety of used mattress based on mattresses' edges rigidity. Especially when air mattress is used, these risks must be considered, and risk evaluation must be conducted.

When using air mattress, make sure the mattress is set right way around (head end of the mattress placed on head end of the bed)

The mattress must meet the bed manufacturer's requirements for height and width.

7.6 IV pole (60121 or 60122)

The IV pole is used as a stand for infusions and blood bags when intravenous fluids are administered. The IV pole is installed in a sleeve at the head end of the nursing bed. The IV pole is secured by twisting it in the holder. The maximum load (SWL) for the IV pole is 2 kg.

Image 44. IV pole in head end of the bed

Ensure that there is enough space above the bed. Keep in mind that raising the bed also lifts the IV pole.

7.7 Dining tray (102588, 102589)

Dining tray is used as a dining surface when patients' eating happens in bed. The dining tray is set on top of raises side rails.
The dining tray is available in widths 80cm (model 102588) and 90cm (model 102589) for Lojer Modux -nursing beds. The dining tray's max SWL is 5 kg.

⚠ *Before using a dining tray, make sure that the tray is placed firmly between the rails and cannot move sideways (danger of burns).*

⚠ *Exercise caution when placing the dining tray on the bed to avoid getting hands or fingers between the dining tray and the rails (danger of crushing).*

8 Cleaning and disinfection

Remove all accessories from the bed before cleaning it.
Unplug the power cord. On battery-equipped beds, lock the functions from the nurse control panel or locking panel, and make sure that the functions are locked by testing the buttons of the hand-held controller.
Remove stains as soon as possible.
Clean the bed regularly, it is recommended daily to clean often contacted surfaces of the bed (siderails, bed ends, handles and parts or accessories which are touched daily). Always carry out cleaning/disinfection when the patient changes or bed taken to another place for use. Clean the bed more thoroughly once a month. Make sure that you also follow any facility/hospital-specific instructions when cleaning/disinfecting the bed. Always clean bed before and after service work to avoid contamination.

8.1 Metal and plastic surfaces

Clean the bed's metal and plastic parts and any controllers using a damp wipe and mild detergent. Use a small brush to reach small spaces. If necessary, rinse the surfaces with clean water and dry them thoroughly. Avoid excessive use of liquids.
Follow the manufacturer's instructions when using and diluting a disinfectant (alcohol/chlorine). Allow the disinfectant to evaporate at room temperature.
Plastic surfaces (ABS, HDPE, PP) are highly resistant to different chemicals. Plastic is resistant to bleaching agents (alkaline compounds). Dilute organic or inorganic acids. Solvents and cleaning agents may also be used (check the product leaflet for concentrations that are safe to use).
Plastic surfaces may get damaged if they are exposed to aromatic hydrocarbons (benzene and its derivatives), ketones, ethers, esters, and chlorinated hydrocarbons. Keep in mind that plastic might also deteriorate if it is exposed to several chemicals at the same time.
Stainless steel is highly resistant to chemicals. Clean stainless-steel surfaces using a mild detergent solution. Ammonia and most solvents can be used to remove difficult stains. Avoid chlorine-based solutions.
Painted or chrome-plated surfaces can be cleaned using a mild detergent. These surfaces are also highly resistant to chemicals. Avoid using harsh detergents and cleaning products.

All surfaces must be dry before using the bed.

Always unplug the power cord from the socket before cleaning.

Do not clean the bed mechanically or using running water.

Do not clean the bed when the temperature or relative humidity is exceptionally high.

⚠ Do not *subject the bed to excessive moisture which may result in water gathering in places and damaging the bed.*

⚠ *Do not use solvents, petrol, or acids for general cleaning of the bed. See above for material-specific instructions.*

⚠ *Dry all surfaces thoroughly after cleaning and disinfection.*

⚠ *Disinfection wears down the surfaces. After disinfecting the bed, clean the surfaces using a clean and damp wipe. Dilute disinfectants according to the manufacturer's instructions.*

8.2 Hygienic mattresses

Remove all secretions and impurities from the mattress as soon as possible or at the latest when the user changes. It is recommended to air the mattress periodically to remove possible moisture. The mattress's interior should not be washed, as this may damage the structure and properties of the mattress. Wash the hygienic cover of the mattress thoroughly with warm water (50 °C) and a neutral (pH7) detergent. Finally, rinse with clean water, wipe dry and leave to dry at room temperature. Check that the mattress surface is dry before the next use. Use a small brush to clean corners and to remove difficult stains. If necessary, dilute the cleaning agent according to the manufacturer's instructions.
The disinfection of the hygienic cover of the mattress should be carried out with a detergent containing alcohol. If the disinfectant used is too strong/undiluted, this may weaken the surface of the hygienic cover and shorten the lifetime of the mattress. The use of chlorinated detergents is not recommended.

⚠ *Alcohol can cause drying/weakening in the surface of the hygienic cover, and therefore care should be taken when disinfecting the cover with a detergent containing alcohol.*

8.3 Wood surfaces and other materials

Laminate parts, wooden surfaces and other similar materials should be washed with water and a mild detergent. For the removal and disinfection of difficult stains, a detergent containing alcohol can be used. After washing, rinse with clean water and wipe the surface dry with a towel or cloth. Do not use polishing agents.

9 Service

Lojer beds need little maintenance, because the bed's electric devices are maintenance free and its moving parts are lubricated. When the instructions for normal use and cleaning are followed, the lubrication should not wear off. However due wearing caused by use of the bed, maintenance lubricating should be conducted as instructed annually.

The expected lifetime of the bed and its' accessories is at least 10 years, provided that the bed and accessories has been used and maintained according to the manufacturer's instructions. Faulty bed should not be used. All original spare parts for the bed are available from the manufacturer, and we recommend replacing any broken or worn parts.

 *Before starting servicing, make sure that the mains lead is disconnected and that the functions have been locked. Check by using the hand controller.*

 *Service technicians must always read the instructions for use before carrying out service/repair work, and they must obey safety instructions when working.*

 *The Holder is responsible to ensure that only trained or adequate qualified person is authorized to service or repair the device. Maintenance work carried out by an unauthorized person may cause personal injury or damage to the device, for which the manufacturer is not responsible.*

 *Allow the electrical components below the bed mattress to cool down before servicing or cleaning them. Maximum contact time of components consecutive on bare skin < 1min.*

 *Use only original spare parts, available from the manufacturer, and follow the manufacturer's guidelines.*

 *Check that the bed is working properly after each maintenance/repair procedure.*

 *Electrical and mechanical components (excluding the accessories referred to in chapter the operating instructions 'Installation and use of accessories') may only be installed by service personnel authorized by Lojer service (vocational upper secondary qualification in machine and metal work or equivalent and valid SFS 6002 training in occupational safety in electric work) or personnel otherwise qualified for service of medical devices.*

 *Document all maintenance work. In accordance with our warranty terms and conditions, insufficient maintenance may also cause the warranty to lapse.*

> ⚠ *Any kind of modification of this bed without authorisation of manufacturer is prohibited.*

9.1 Biannual procedures

Biannual maintenance procedures are mainly routine checks carried out by the user. At least every six months, check that the following parts and features are working properly:

- power cord and its connection to the bed
- motor wiring
- hand-held controller and its cable
- side rails (functional testing)
- brakes (check that the brakes hold)

9.2 Annual procedures

For annual maintenance, use the inspection instructions found in section 11. Copy the form and record any performed maintenance work if you do not have a recording system of your own. Perform an annual three-part inspection, maintenance and testing procedure as follows.

> ⚠ *Inspect the condition of the motors, brakes, and wheels. Take special care and carry out more inspections if there is load placed on the bed, if the bed is constantly used at maximum load (SWL) or, for example, the platform is raised more than 3,000 times per year.*

9.3 Visual inspection

Check for any damage; fractures, deformations, signs of unusual wear, possible looseness of joints and fastenings, etc. Also check the attachment points (mounting points for the motors and mechanisms) in the following sections:

- sleeping surfaces and support structures
- in the Modux model, pay special attention to the middle section of the upper frame of the bed (bed folding section), its joints and its attachments in general
- upper frame structures, strut bar attachment points, strut bars
- structures for lifting mechanisms
- mounting points for accessories
- lifting pole and IV pole sleeves and attachments
- rails and headboards
- accessories

Check the condition of the bed's electrical devices and their wiring: fractures, fasteners and cable clamps, the condition of the plug, signs of wear or abrasion on the cords, and the tightness of the screw attachments in the following locations:

- control unit
- motor wiring
- cord fastenings
- power cord

- hand-held controller and optional nurse control panel accessory
- accessories

9.4 Maintenance and inspection

Check the locking rings and circlips of the pegs, tightness of the screws, attachment and tolerances of components in mechanisms in the following locations:

- motor fastenings
- component bolt attachments, wheels, headboards, etc.
- sleeping surface mechanism joints
- lifting mechanism joints
- side rails
- accessories
- greasing, following items:

(Use e.g. Würth HSS 2000 synthetic spray Vaseline or normal general Vaseline. Used lubricate should be tacky and pressure proof. Using spray Vaseline is easier, because it can be sprayed to surfaces without dismantling parts).

- Sliding tubes in lift mechanics, lift the bed to highest position – conduct greasing and lower the bed down. NB! Grease all the surfaces of the sliding tubes. Repeat if necessary.

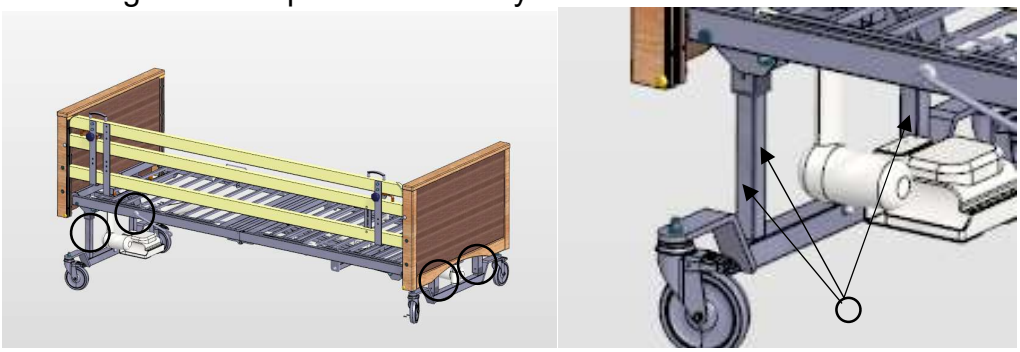


Image 45. Greasing items on lift mechanics

- joints, bearings and motor fastenings on sleeping surface.

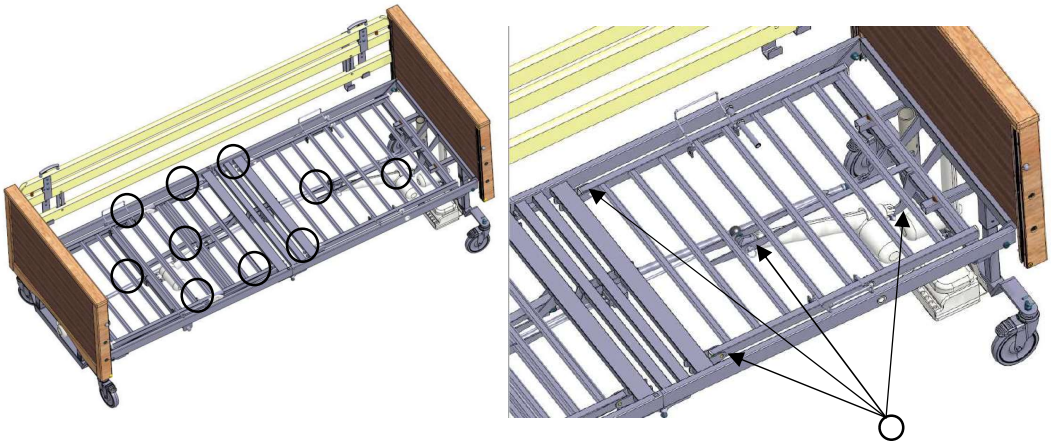


Image 46. Greasing items on sleeping surface

- Joints, reaction bars, middle joint and upper frame joints on folding mechanism.

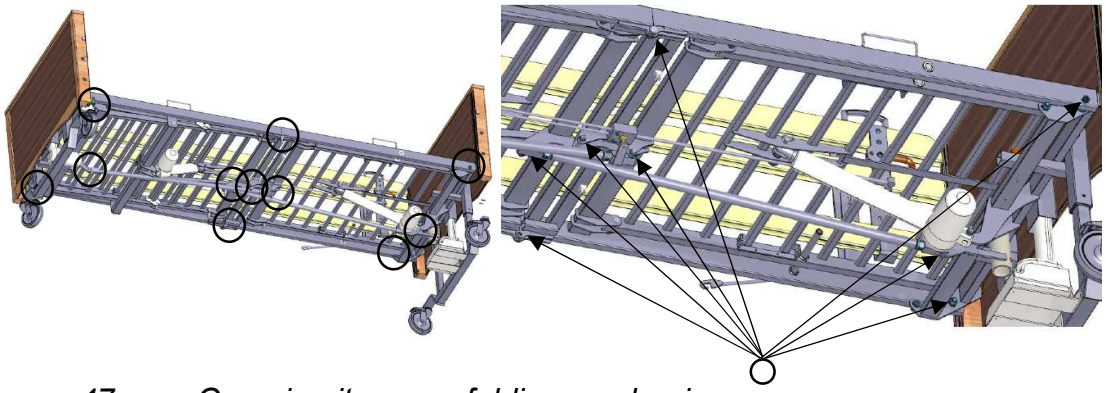


Image 47. Greasing items on folding mechanism

- Siderail mechanism, aluminium channels in bed ends, plastic slide parts and siderail release buttons from every corner.

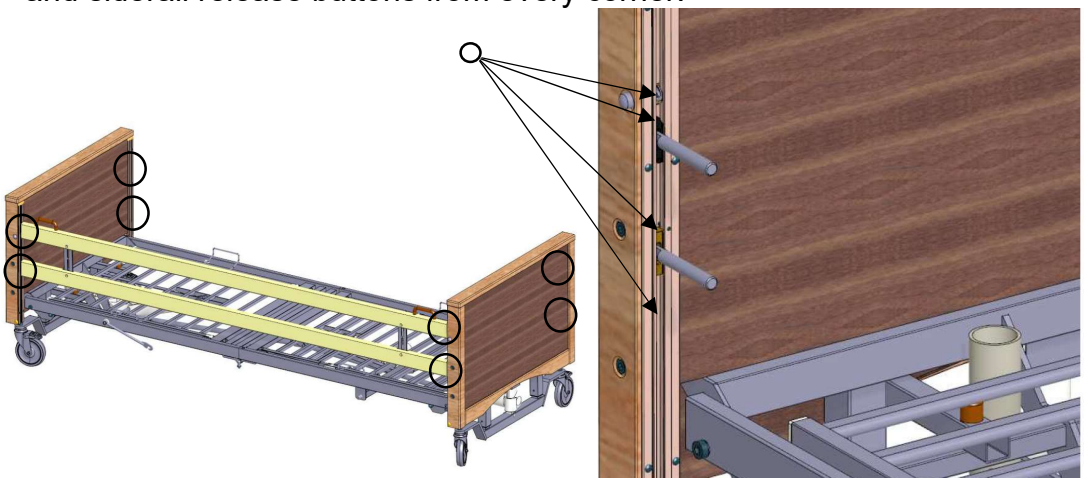


Image 48. Greasing items on siderail mechanism

9.5 Functional testing and inspection

Carry out functional testing without load and with normal patient load (approx. 60–100 kg). Test the mechanism's movement and stopping in the extreme positions. Observe any unusual sounds, vibrations, etc. Also pay attention to stability, unusual wobbling of mechanisms, looseness, etc. Perform the following actions for the listed items:

- motors, lifting and sleeping surface adjustment movements, load testing
- the hand-held controller and its functions
- nurse control panel (optional), test the locking functionality
- rail functionality, locking in top position, space between the rails
- accessories, mounting and operation
- if there are unusual sounds, determine the source of the sound
- e.g. if there is an unusually loud creaking sound when adjusting the back section, check the bearings and the motor fastening pins and clearance, lubricate the pins/bearings and replace when necessary

Check the operation, locking and sturdiness of the following:

- wheels with brakes
- wheel bearings
- brake pedal
- check the functional measurements of the rails in accordance with image 49.

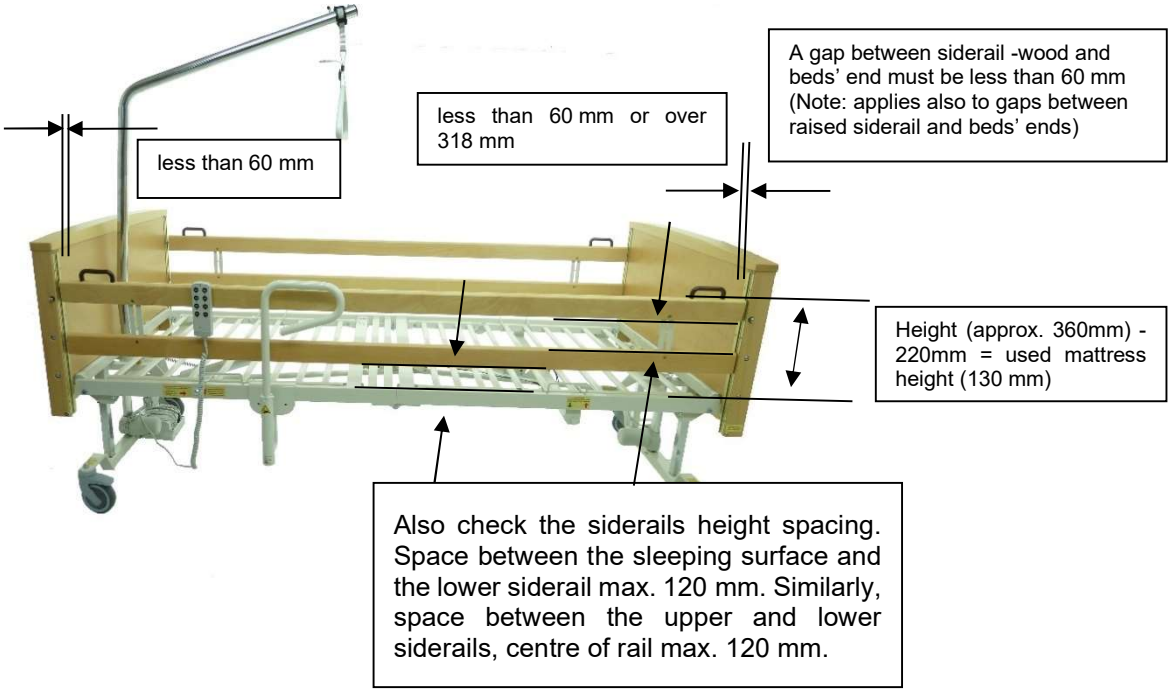


Image 49. Siderail dimension in accordance with standard 60601-2-52.

- Perform the measurement on the siderails while locked in their top position. Perform the check on both sides of the bed.

- When measuring the space between the sleeping surface and the lower siderail, raise the lower siderail up until it stops.
- At the head of the bed, the space between the siderail and the headboard must not be more than 60 mm. At the foot of the bed, the space between the siderail and the footboard must be less than 60 mm or more than 318 mm.
- The space between the lower siderail and the sleeping surface must not be more than 120 mm.
- The space between the upper and lower siderail (at the centre of the siderail) must not be more than 120 mm.
- The rails must comply with the measurements provided for in standard EN 60601-2-52: 2010. Check that the dimensions of the rails are acceptable according to the boundary values provided for in the standard (see image 49).
- Clean the bed before and after service!

9.6 Changing the power cord

See safety instructions presented in Chapter 9. Obey with following instructions when changing the power cord.
1. Detach the power cord from mains socket. Proceed with caution if the cord has any external damages visible (wire insulation, plug etc. damaged).
2. Detach the power cord from strain relief located in the head end of the bed by using fork wrenches and/or adjustable wrenches. Detach the nut pointed in image below and string the power cord out from strain relief -support.

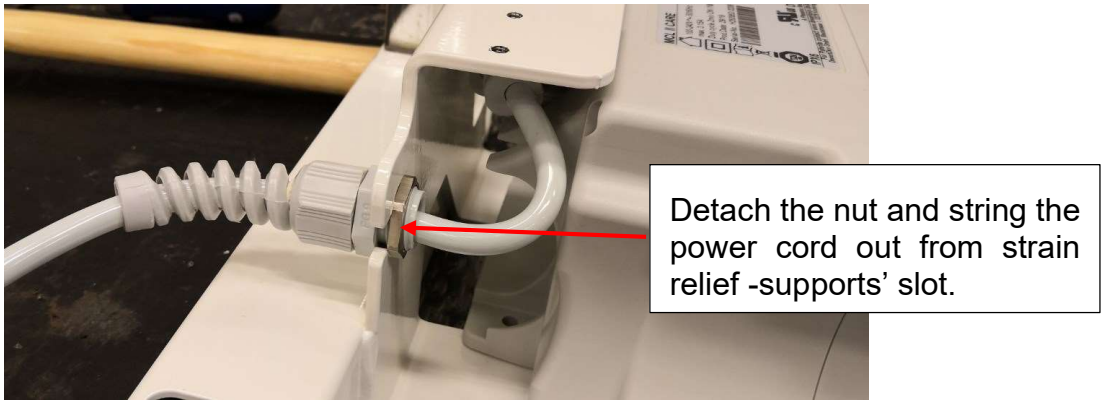


Image 50. Detaching the power cord from strain relief

3. Detach wiring going to the control unit from strain reliefs (see image below).

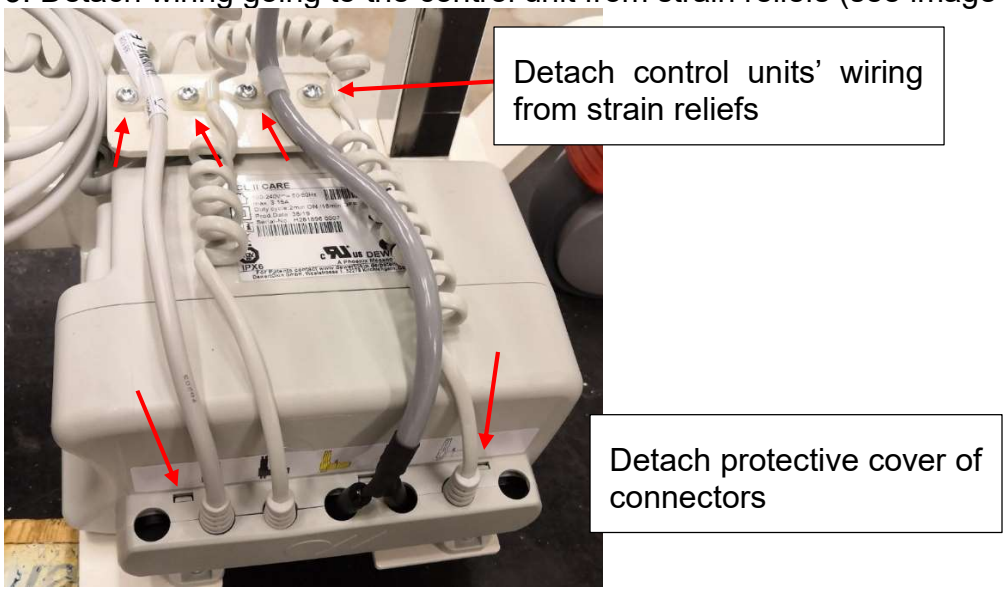


Image 51. Detachment of control units' strain reliefs and protective cover

4. Detach control units' connectors protective cover of by pressing fastening clips (pointed in image above) with screwdriver.
5. Detach the control unit by dismantling screws (2 pcs) pointed in image below.

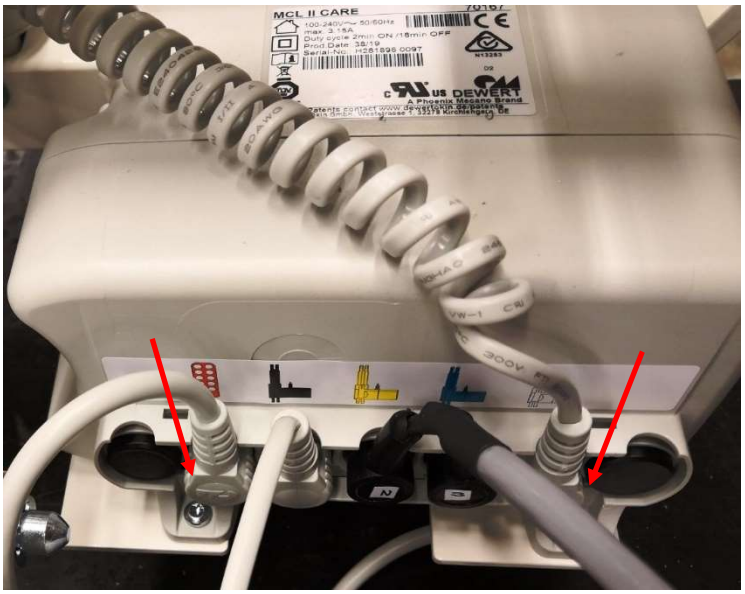


Image 52. Detachment of the control unit

6. Detach the locking part of the power cord by pressing fastening clip open with screwdriver from direction pointed in image below.

Image 53. Detachment of power cords' locking part

7. Detach the power cord from the control unit and replace it with a new one. Attach the locking part and ensure its' fastening to place.
8. Perform stages 5. → 2. inversely to attach the control unit, strain reliefs and the protective cover back in place. Make sure that all fastenings are tightened in suitable tightness: Fastenings has to be tight but not so tight that components get broken.
9. Plug the power cord into mains socket and ensure correct operation of all the movements of the bed.

9.7 Changing the hand control unit

See safety instructions presented in Chapter 9.
NB! In case of faulty hand control unit, detachment to mains socket can't be tested with hand control unit in satisfactory way.
Obey with following instructions when changing the hand control unit.
1. Detach the power cord from mains socket and make sure no external power supply is connected to the device (battery etc.)
2. Detach control units' connectors' protective cover of by pressing fastening clips with screwdriver (see Image 51.)
3. Detach the hand control unit wire from strain relief (see Image 51.)

4. Detach hand control units' plug from the control unit (pointed in image below).

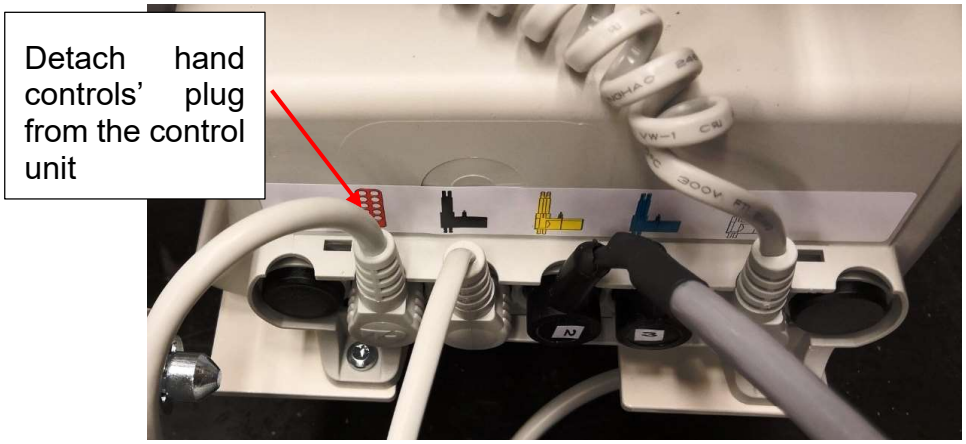


Image 54. Detachment of hand control from control unit

5. Attach new hand control units' connector plug to the control unit.
6. Perform stages 3. → 2. inversely to attach the strain relief and the protective cover of the control unit back in place. Make sure that all fastenings are tightened in suitable tightness: Fastenings has to be tight but not so tight that components get broken.
7. Plug the power cord into mains socket and ensure correct operation of all the movements of the bed by using the hand control unit.

10 **Troubleshooting**

Symptom	Cause	Action
One of the actuators does not function.	The hand-held controller or motor has a loose wire.	Check that the wires are connected and in good condition.
	The hand-held controller is defective.	Check if the hand-held controller works by adjusting the nursing bed with a similar and functioning hand-held controller. If necessary, replace the hand-held controller with a new one.
	The motor is defective.	Check the motor condition by cross-connecting the motor wires in the control unit. Contact Lojer Service.
	The control unit relay board is defective.	Contact Lojer Service.
None of the motors work.	The hand-held controller is defective.	Check the hand-held controller functions by following the above instructions.
	There is no supply voltage.	Check that the power cord is plugged in.
	The power cord is defective.	Check the cord condition and contact Lojer Service if necessary.
	The transformer thermal relay is defective.	Contact the service helpline.
	The hand-held controller fuse is defective.	Contact the service helpline.
	The relay board fuse is defective.	Contact the service helpline.
	The power cord fuses are defective.	Contact the service helpline.

To replace motors, hand-held controllers, or control units, or to order spare parts, contact Lojer Service (see *section 17 Contact information*). Make sure you have the following information at hand before contacting Lojer Service:

- Product name and model
- Serial number
- Acquisition year
- Detailed description of the problem.

The product name, model, serial number and date of manufacture can be found on the type plate attached to the front of the nursing bed on a bar in the lower frame (see *type plate in section 13.1, image 57*).

11 **Inspection form**

ANNUAL INSPECTION / ANNUAL MAINTENANCE PROCEDURES

SERVICE TECHNICIAN AND DATE: _____
NEXT MAINTENANCE: _____
PRODUCT SERIAL NUMBER: _____
ELECTRICAL CLASS OF THE DEVICE: **CLASS I** _____ **CLASS II** _____

		PROCEDURE	OK	Z) REPAIR
VISUAL INSPECTION:	MATTRESS PLATFORM STRUCTURE	A		
	UPPER AND LOWER FRAME STRUCTURES	A		
	FOLDING MECHANISM STRUCTURES	A		
	MOUNTING POINTS FOR ACCESSORIES	A		
	LIFTING AND IV -POLE SLEEVE	A		
	CONTROL UNIT	B, C		
	MOTOR WIRING	B		
	WIRE FASTENINGS	B, C		
	POWER CORD	B, C		
	MARKING – AND WARNING-STICKERS	Y		
MAINTENANCE AND INSPECTION:	MOTOR FASTENINGS	C		
	CHECK BOLT TIGHTNESS	C		
	MATTRESS PLATFORM MECHANISM JOINTS	C, D, I		
	LIFTING MECHANISM JOINTS	C, D, I		
	FOLDING MECHANISM STRUCTURES	C, D, I		
	SIDERAIL MECHANISM	C, D, I		
	CLEANING/WASHING OF STRUCTURES	WHEN NEEDED		
FUNCTIONAL TESTING AND INSPECTION:	MOTORS	B, E, X		
	HAND-HELD CONTROLLER	B, E		
	NURSE CONTROL PANEL (optional)	B, E		
	BRAKES AND WHEELS	F		
	TRENDELENBURG (hospital beds)	G		
	SIDE RAILS	H		
	BATTERY CHARGE (optional)	J		
	ELECTRICAL SAFETY MEASUREMENTS	K		
	ACCESSORIES, LIFT SUPPORT, ETC.	A, C, E, L, Y		

A) CHECK FOR ANY POSSIBLE DAMAGE; FRACTURES, DEFORMATIONS, SIGNS OF UNUSUAL WEAR.
B) CHECK ELECTRICAL COMPONENTS AND WIRINGS: FRACTURES, FASTENINGS FOR CORDS AND COMPONENTS, CONDITION OF POWER CORD PLUG, ENCLOUSURES, SIGNS OF WEAR OR ABRASION ON COMPONENTS OR CORDS.
C) CHECK THAT THE PEG LOCKING RINGS AND CIRCLIPS ARE IN PLACE, CHECK THE TIGHTNESS OF ALL SCREW FASTENINGS AND THE FASTENINGS OF ALL COMPONENTS, TOLERANCES AND MECHANISMS IN GENERAL.
D) LUBRICATE MECHANISM JOINTS, BEARINGS AND SLIDING SURFACES, LIFTING MECHANISM JOINTS, LOWER FRAME ROCKER PIPE BEARINGS. STRUT BAR JOINTS AND BRAKE LEVER JOINTS, SIDERAIL MECHANISM IN BED END.
E) FUNCTIONAL TESTING, STOPPING IN THE EXTREME POSITIONS, ALSO UNDER LOAD, FUNCTIONAL TESTING OF THE HAND-HELD CONTROLLER AND THE NURSE CONTROL PANEL.
F) CHECK THE HOLD OF ALL WHEEL BRAKES, THE LOCKING OF THE DIRECTION WHEEL IN THE TRANSPORT POSITION. THE GENERAL CONDITION OF THE WHEELS, OPERATION OF THE BRAKE PEDAL AND BRAKES ETC.
G) CHECK THE FUNCTIONALITY OF THE ADJUSTMENTS, CONDITION AND HOLD OF GAS SPRINGS.
H) CHECK FUNCTIONALITY, LOCKING INTO TOP POSITION, SPACE UNDER LOWER RAIL, LUBRICATE LOCKS, SLIDING PARTS, JOINTS IF NECESSARY. CHECK THE CONDITION IN GENERAL; FRACTURES, CRACKS, FASTENINGS
I) SUITABLE LUBRICANT E.G. WURTH HS 2000 SYNTHETIC SPRAY VASELINE OR SIMILAR.
J) CHECK BATTERY CAPACITY (if optional), REPLACE IF NEEDED.
K) PERFORM AN ANNUAL ELECTRICAL SAFETY MEASUREMENT FOR CLASS I DEVICES, ALSO RECOMMENDED FOR CLASS II DEVICES. PERFORM THE MEASUREMENT WHEN REPLACING POWER CORDS OR ELECTRICAL COMPONENTS E.G CONTROL UNIT OR WHEN DISCONNECTING PROTECTIVE EARTH WIRINGS (CLASS I PRODUCTS). MORE INFORMATION ON ELECTRICAL SAFETY MEASUREMENTS IN STANDARD EN 62353.
L) REPLACE DEFECTIVE COMPONENT, MAKE NOTIFICATIONS IF NECCESSARY FOR PARTS UNDER WARRANTY.
X) WHEN CHECKING THE CONDITION OF MOTORS, PARTICULAR ATTENTION SHOULD BE PAID AND SPECIAL ATTENTION IN INSPECTIONS WHEN FOLLOWING CRITERIA OR CASES:
- IF LOAD ON THE BED HAS BEEN SIGNIFICANT, I.E. CONTINIUS LOAD HAS BEEN CLOSE SWL OR MAX. PATIENT LOAD.
- IF BED IS RAISED MORE THAN 3,000 CYCLES PER YEAR
WHEN TESTING THE FUNCTIONALITY OF THE MOTORS, LISTEN TO ANY UNUSUAL SOUNDS OR VIBRATIONS FROM MOTORS OR MOTOR GEARBOX, SPINDEL ETC. REPLACE OR SERVICE WHEN NECESSARY
Z) RECORD ALL REQUIRED REPAIR WORK, PART REPLACEMENTS ETC.
Y) INSPECT CONDITION AND ATTACHMENT OF MARKING- AND WARNINGSTICKERS OF THE DEVICE AND ACCESSORIES.

12 Electromagnetic compatibility (EMC)

12.1 General information on EMC

Medical electronic devices must be installed and used in accordance with the electromagnetic compatibility (EMC) information described in this manual. Portable radio frequency communication devices may affect the operation of this device.
Other devices may be disturbed by EMC radiation that is even slightly above the reference value indicated in the standard. To determine whether the resulting interference is caused by this device, start and stop this device. If, as a result, interference in other devices disappears, this device is the cause of the detected interference. In such rare cases, interference may be reduced or eliminated by the following means:

- Transfer this device and other devices to a different location, move them to a different position or a different distance from each other.

⚠ *Ensure that the device is not exposed to electromagnetic radiation exceeding applicable norms. Portable and mobile RF communications equipment can affect to the device.*

⚠ *Use of accessories, transducers, and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.*

⚠ *Press only one button at a time from hand control unit. Pressing multiple buttons simultaneously can lead to improper operation of the equipment in the surroundings.*

⚠ *Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.*

12.2 Electromagnetic radiation

Guidance and manufacturers' declaration
This product is intended for use in electromagnetic environments that are specified below. The user should ensure that the product is used in an appropriate environment.

Emission test	**Compliance**	**Electromagnetic environment -guidance**
RF emissions CISPR 11	Group I	This device uses radio frequency energy only for its internal functions. Due to this, the amount of RF radiation is very low, and interference caused to nearby electronic devices is unlikely.
RF emissions CISPR 11	Class B	This device is suitable for use in all facilities, including home care and facilities that are connected to a public electrical network through which 230VAC voltage is available.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Table 2. Electromagnetic operating environment

12.3 Electromagnetic immunity

Guidance and manufacturers' declaration
This product is intended for use in electromagnetic environments that are specified below. The user should ensure that the product is used in an appropriate environment.

Immunity test	Compliance level	Electromagnetic environment -guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, 15 kV air	Floors must be made of wood, concrete, or ceramic tiles. If the floor is covered with synthetic material, the relative humidity of the air should be at least 30%.
Electrostatic transient/burst IEC 61000-4-4	±2 kV power cords; 100 Hz repetition frequency ±1 kV input/output wires; 100 Hz repetition frequency	Mains power quality should be that of a typical commercial or hospital environment.
Overvoltage IEC 61000-4-5	±1 kV (line to line) ±2 kV (line to earth)	Mains power quality should be that of a typical commercial or hospital environment.
Voltage drops, short-term disturbances and voltage variations in the electrical network IEC 61000-4-11	< 0% U(T) for 0.5 phase with 45° increments 0% U(T) for 1 phase 70% U(T) for 25/30 phases < 5% U(T) for 250/300 phases	Mains power quality should be that of a typical commercial or hospital environment. If the device user requires the device to operate even during power failures, it is recommended that the device is powered by a UPS power source. U(T) is the mains voltage (AC) before entering the test level.
Current frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	Current frequency magnetic fields should correspond with a typical commercial or hospital environment.
Conductive radio frequency IEC 61000-4-6 Radiating radio frequency IEC 61000-4-3	3V 150 kHz - 80 MHz 6V ISM frequency range & amateur radio frequencies. 10 V/m 80 MHz - 2,7 GHz 385 MHz – 5785 MHz test definitions related to immunity to wireless communication devices using radio frequency (reference: Table 9, IEC 60601-1-2:2014)	Field strengths from fixed transmitters, such as base stations for radio (AM/FM), mobile phones, wireless phones, and land mobile service, amateur radio, and TV broadcasts, cannot be theoretically calculated with accuracy. To assess the impact of fixed radio transmitters on the environment, electromagnetic surveys should be considered for the environment. If the measured field strengths in the operating environment of this device exceed the compliant limits (as shown in this section), the operation of the device should be monitored to ensure that it is functioning properly. If abnormal behaviour or changes in performance are observed, measures may need to be taken, such as relocating or repositioning the device. Interference may occur in the proximity of devices marked with the following symbol:  Portable and mobile radio frequency communication devices (such as a mobile phones) may not be used closer than 30 cm away from any part of this device, including wires.

Table 3. Electromagnetic immunity

Recommended distances between portable and mobile (RF) radio frequency communication devices and the Lojer Modux nursing bed.

The Lojer Modux nursing bed is intended for use in an electromagnetic environment where (RF) radio frequency radiation interference is controlled. The nursing bed user can help prevent electromagnetic interference by maintaining the minimum distance between portable and mobile RF communication devices (transmitters) and the nursing bed in accordance with the recommendations below, depending on the maximum power of the communication device.

Maximum nominal output of transmitter W	Distance depending on transmitter frequency (m)		
	150 kHz to 80 MHz $d=1.2\sqrt{P}$	80 MHz to 800 MHz $d=1.2\sqrt{P}$	800 MHz to 2.7 GHz $d=2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1.0	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters, whose maximum power is not listed above, the recommended distance d in meters (m) can be estimated using an equation applied to the transmitter frequency, where P is the maximum power of the transmitter W according to the manufacturer's value.

Note 1. For 80 MHz and 800 MHz follow the distance of the higher frequency range.

Note 2. These instructions may not apply in all situations. The progression of electromagnetic radiation is affected by reflections and absorption caused by structures, objects, and people.

Table 4. Distances between devices

13 Technical specifications

Weight without equipment (80/90cm)	92 / 96 kg
Length (A)	223 cm
Total width (B)	90 cm or 100 cm
Bed surface height (C)	30-69 cm (or 35-74 cm, dual locking systems for wheels)
Bed end height (D)	45,5 cm (at minimum)
Backrest angle (E)	0-71°
Thigh rest angle (F)	0-38,5°
Leg rest angle (G)	0-12°
Height of the leg rest (max) (H)	17,5 cm
Space-reservation for a patient-lift (I)	15 x 140 cm
Mattress dimensions (see guidelines Chapter 7.3 and 7.5)	78-80 cm or 88-90 cm x 200-205 cm x 9–13 cm
Size in transport position	90 cm or 100 cm x 60 cm x 127 cm
Noise	45 dB (A)
Transportation / storage temperature	-20 °C - + 50 °C
Operating temperature	+10 °C - + 40 °C
Relative humidity	30 % - 75 %
Atmospheric pressure	80 kPa – 106 kPa
Altitude	< 2000m
Maximum length of power cord (spiral cable)	2 m *
Maximum length of hand control unit cord (spiral cable)	1,9 m *

(*Dimension of the spiral cable when it is not pulled. Use only original spare parts)

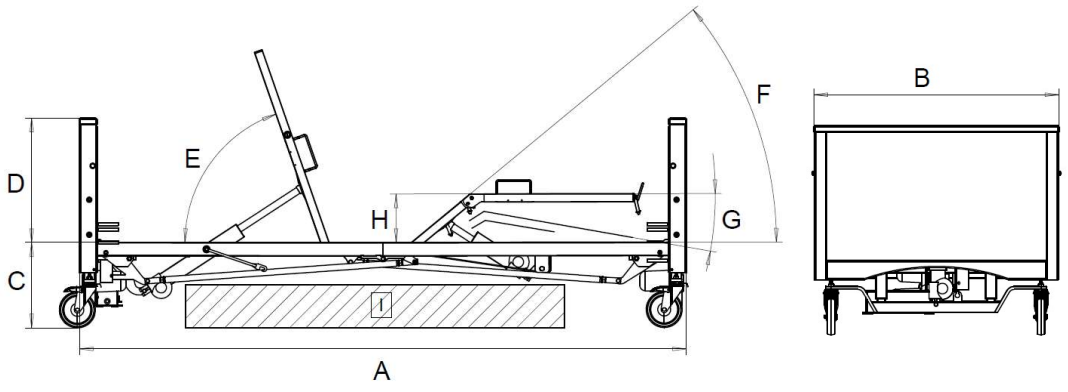


Image 55. Dimensions of the Lojer Modux

Maximum load (SWL)	**170 kg**
Maximum patient weight	135 kg
Bedding	20 kg
Accessories	15 kg

(See page 9. Image 4.)

Weight of accessories	
Accessory	*Weight*
Lifting pole (101912)	4.3 kg
Lift support (71100KP)	3,6 kg
IV pole (60121 or 60122)	1,5 kg
Dining tray (102588, 102589)	3,6 kg
Cushioned rail guard (101182PRO)	1,6 kg
Raised side rail (71025KP)	3,4 kg

Applied parts in Modux beds. Cross haired area is applied parts area.
Applied part = part of medical electric (ME) equipment that in normal use necessarily comes into physical contact with the patient for ME equipment or ME system to perform its function.

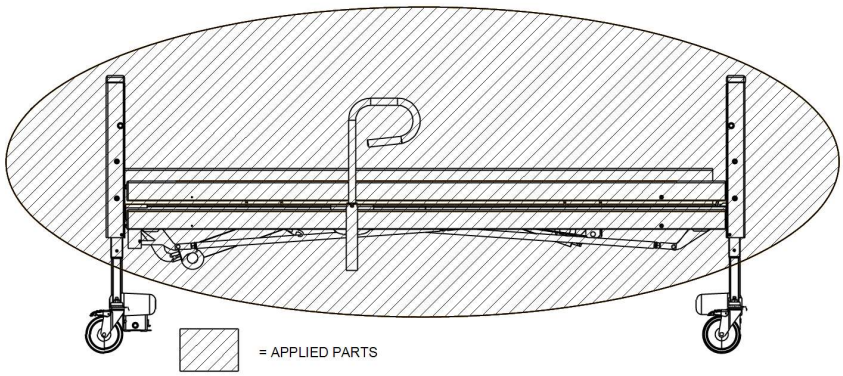


Image 56. Applied part area definition in Lojer Modux nursing bed

13.1 Type plate information

Operating voltage	120–240V ~, 50/60 Hz
Enclosure class	IPX 4
Intermittent operation	2 min. ON / 18 min. OFF
Power input	400 VA
Electrical protection class	Class II
Classification of Applied Parts (according to EN 60601-1:2006)	Type BF Applied Part

See Chapter 4.2 Symbols for explanations of symbols used in the type plate.

Image 57. Type plate (Note! Image referential)

The type plate is located on the nursing bed frame at the power cord end.

13.2 Standards used

The device is in conformity with requirements of the EU Medical Device Regulation 2017/745. The device is marked with CE marking. The device is classified as Class I medical device.

The following harmonized standards have been used in the design, testing and manufacturing of the bed collection:

- EN 60601-1:2006 + A1:2013
- EN 60601-1-2:2015
- EN 60601-1-6:2010
- EN 60601-2-52:2010
- EN 60601-1-11:2010
- EN ISO 14971:2012
- EN ISO 13485:2016

• Modux nursing bed is tested and comply with SL1 fire protection class requirements. SL1 fire protection class approval corresponds to approval according to standards EN 1021-1 and EN 1021-2.

Image 58. The product fulfils the requirements of SL1 fire protection class

14 **Recycling**

A large part of the materials used in the device can be recycled. When the device can no longer be used, it must be dismantled and recycled appropriately. Recycling must be performed by a specialized company and the components of the device must not be disposed of among unsorted landfill waste.

Pre-processing and storage

If the device has a battery, it must be removed at the end of life.

Remove the oils from the hydraulic system and take them to the appropriate waste processing plant.

The gas spring must be de-pressurized and its oils removed before the metal is recycled.

Demolition

The materials must be sorted before recycling:

•SCRAP METAL: frame, screws, nails, hinges, springs etc.

ENERGY WASTE (combustible waste): solid wood and other wood-based materials, chipboard etc., plastics that are not forbidden to burn (PVC -plastic is forbidden to dispose by burning because it forms hydrochloric acid that corrode flues and may create very toxic combustion gas.

• SER (electrical and electronic waste): hand-held control, all cables, motors etc.

• MISCELLANEOUS WASTE: plastic components (wheels), upholstery and other components, in which the materials cannot be separated. PVC -waste is delivered separately sorted to waste-station or sorting-station. PVC-plastic is identified from symbol presented below, material number 03.

• Pre-processed and sorted materials are taken to the appropriate collection points. Always follow regional instructions and those posted at the collection points. Recycling reduces considerably the waste in landfills and the soil.

15 Spare part images and catalogues for the beds

Use the images to quickly find the part you are looking for. Use the names in the parts catalogue when ordering spare parts.
Note possible replacement parts which are indicated in the spare part images. The images also show older versions of parts. Always check the device's serial number from the type plate before ordering spare parts. Also check the width of the bed when ordering wooden parts for the bed. Check the handedness of spare parts. The handedness is determined from the patient's perspective as the right or left side of the patient when the patient is lying down on their back.

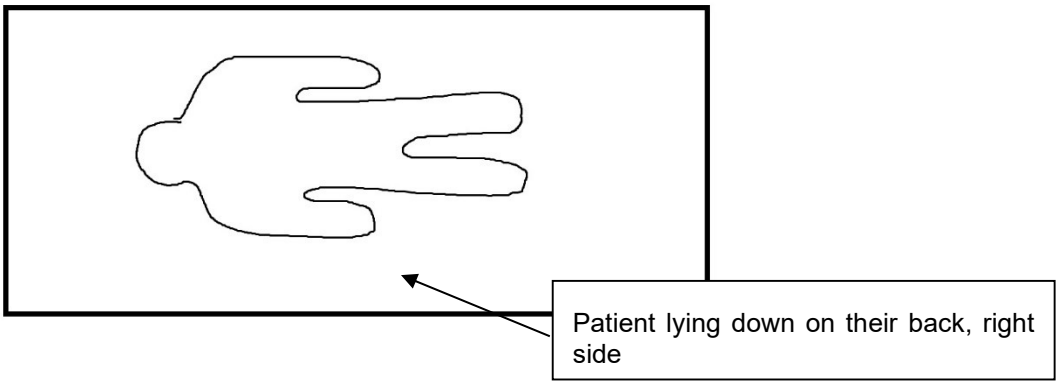
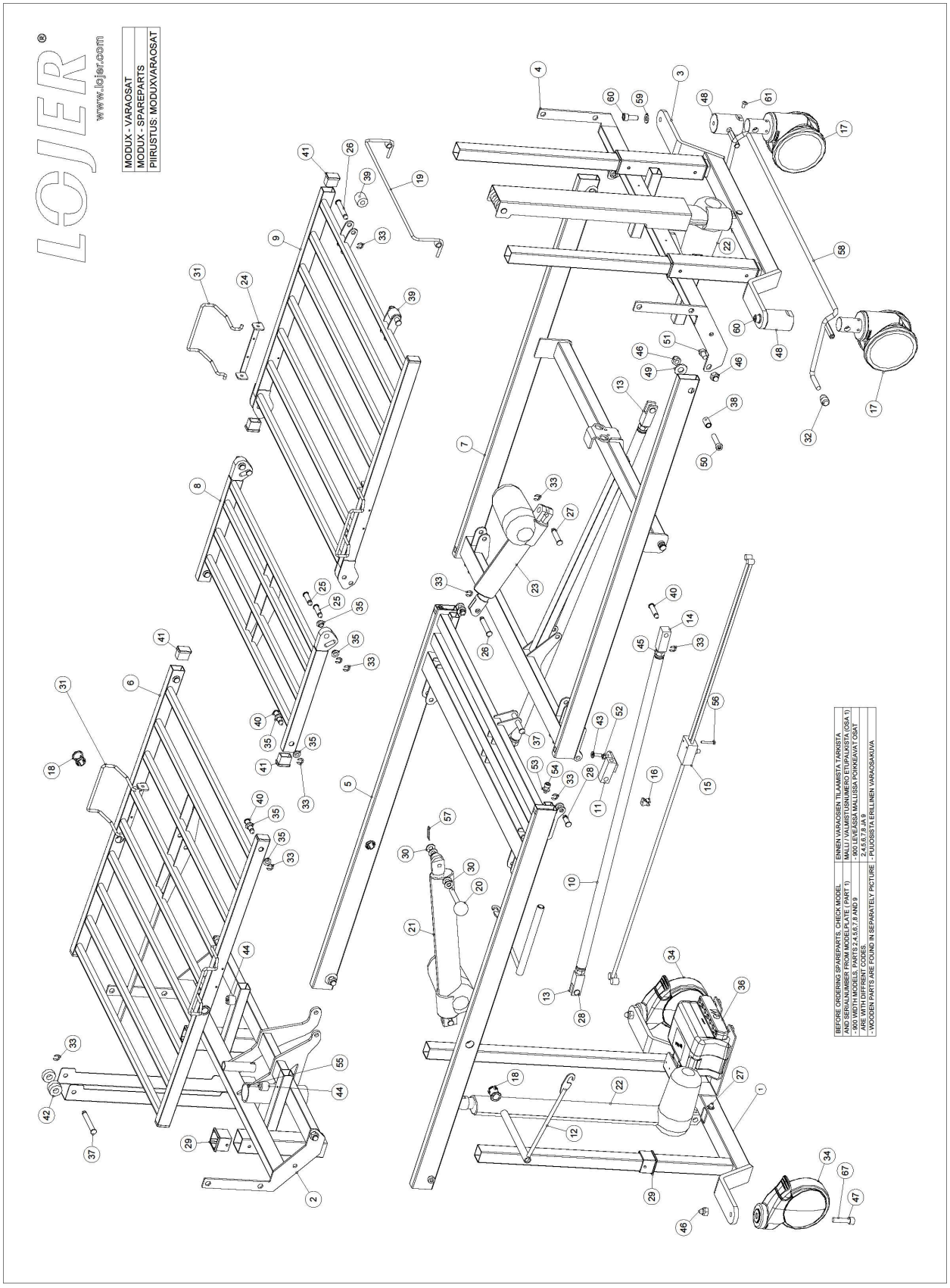


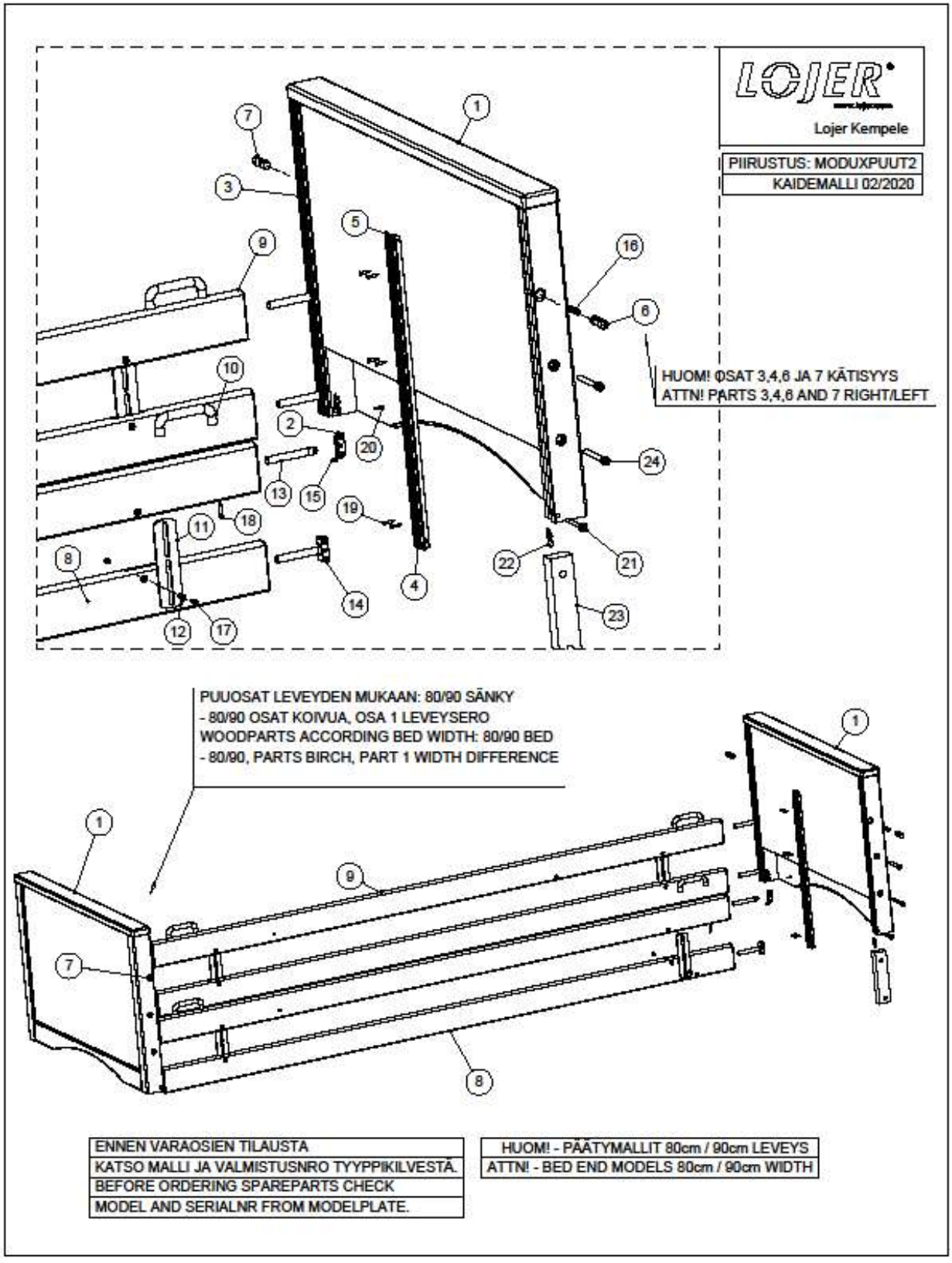
Image 59. Determining handedness, left or right side

15.1 Frame and electrical components



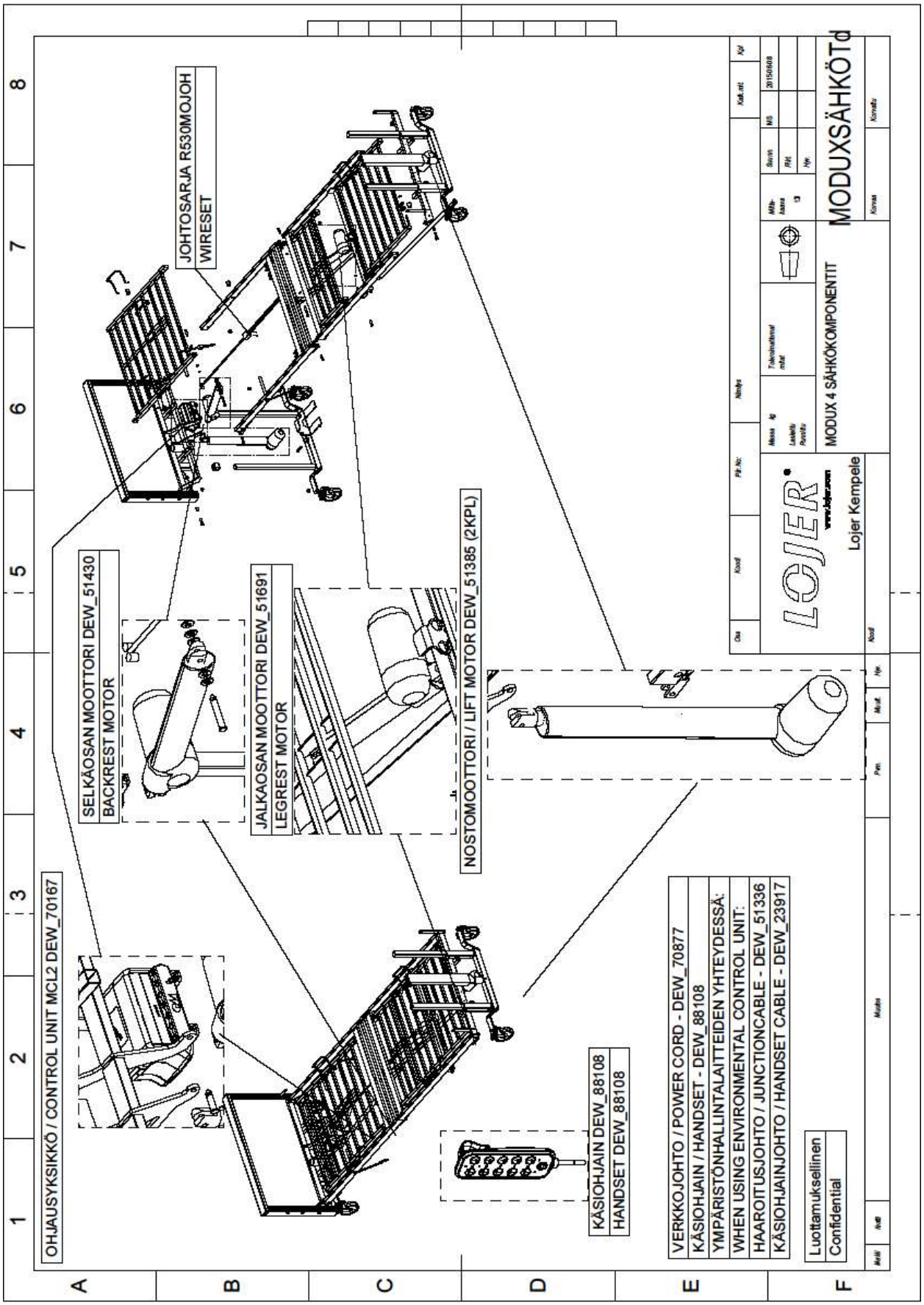
Piirustus	MODUXVARAOSAT / KOKOONPANOMALLI MS / 2009-10-28		
Osa	Tunnus	Kuvaus	Kpl
1	154812KP	PÄÄPÄÄTYRUNKO KP	1
2	154810KP	PÄÄPÄÄTY LIUKUKEHÄ KP (154910KP 90 cm)	1
3	154813KP	JALKOPÄÄTYRUNKO KP	1
4	154811KP	JALKOPÄÄTY LIUKUKEHÄ KP (154911KP 90 cm)	1
5	154814KP	PÄÄPÄÄTY YLÄRUNKO KP (154914KP 90 cm)	1
6	154816KP	SELKÄOSA 80 KP (154916KP 90 cm)	1
7	154815KP	JALKOPÄÄTY YLÄRUNKO KP (154915KP 90 cm)	1
8	15400817KP	REISIOSA 80 KP (15400917KP 90 cm)	1
9	154818KP	JALKO-OSA 80 KP (154918KP 90 cm)	1
10	15400819KP	REAKTIOTANKO KP	2
11	154008194KP	REAKTIOTANGON PÄÄ RAJAK.	1
12	150020KP	LUKITUSSALPA (OIKEA/VASENKÄT)	2
13	154008193	REAKTIOTANGON PÄÄ URALLA	2
14	154008194	REAKTIOTANGON PÄÄ ILMAN URAA	1
15	R530MOJOH	JOHTOSARJA MODUX	1
16	15413226004	PUTKENPIDIN 8 mm. VALKEA	2
17	H366A3A125	H366A-3A125UNB(2FT) (JP-PARIPYÖRÄLUKITUS)	4
18	1500101	LUKITUSHOLKKI RINTAP. JA SIVUPUTKET	4
19	150022KP	PATJATUKI JALKOPÄÄ 800 & 900	1
20	1010TMVLKP	VARALASKU TAPPI (1010TMVL+R254328)	1
21	DEW_51430	MEGAMAT MCZ GR 4-450-250 4Kn	1
22	DEW_51385	MEGAMAT MCZ GR 6-580-390 2Kn	2
23	DEW_51691	MEGAMAT MCZ GR 4-283-75 4Kn	1
24	15400821	PATJATUKI KIINNITIN MODUX	4
25	R246L1028	LAIPALLINEN TAPPI 10-28	4
26	R246L1052	LAIIPALLINEN TAPPI 10-52	3
27	R246L1042	LAIIPALLINEN TAPPI 10-42	3
28	R246L1022	LAIIPALLINEN TAPPI 10-22	4
29	70006	LIUKUHOLKKI POM	8
30	R231M10PA	ALUSLEVY DIN 125 M10 PA	5
31	10001015	SIVUTUKI/PATJATUKI	4
32	UKBH10S	JARRUPOLJINKUMI MUSTA	2
33	R2402008	LUKKORENGAS DIN 6799-UD8	24
34	R260EJPD125	STEINCO 881 SERIE 125 mm EJP	4
35	R257101218	LAIPPALAAKERI 10/12/18-09 SBT-F	12
36	DEW_70167	MCL II CONTROL UNIT	1
37	R246L1067	LAIIPALLINEN TAPPI 10-67	3
38	TM40210E2ZN	LAAKERIHOLKKI 14/10-23.5	4
39	70162	d10.2D25L24 MUOVIRULLA PA	2
40	R246L1032	LAIIPALLINEN TAPPI 10-32	7
41	R25602030B	SULKUTULPPA B46-2030 VALK	8
42	R2570090	ALUSLEVY 20x10.5x9 MUOVI	6
43	RH06020	HUONEKALURUUVI M6x20	1
44	R4638	LIUKUNASTA D20x18	2
45	R22612	KUUSIOMUTTERI DIN 934 M12 (R22612-OK / R22612V- VK)	2+2
46	R22610	KUUSIOMUTTERI DIN_986 M10	10
47		KUUSIOKOLORUUVI DIN_912 M10x40	4
48	71084	PYÖRÄISTUKKA (PARIPYÖRÄLUKITUS)	4
49	R231M14PA	ALUSLEVY DIN 125 M14 PA	4
50		KUUSIOKOLORUUVI DIN_6912 M10x40	4
51	R2041016	KUUSIOKOLORUUVI DIN_912 M10x16	4
52	R22606	KUUSIOMUTTERI DIN 934-M6	1
53	R2308.4	ALUSLEVY DIN 125-M8.4	2
54	R22708016	KUUSIOKOLORUUVI DIN 912-M8x16	2
55		RUUVI DIN_7981-C4.2x25	1
56	R2040430	KUUSIOKOLORUUVI DIN 7380-M4x30 (10.9)	2
57	70368	JOUSISOKKA D2	1
58	71086KP	JARRUKAARI KP MODUX (PARIPYÖRÄLUKITUS)	1
59	R2305010.5	ALUSLEVY DIN 9021-M10.5	4
60	R227010025	KUUSIOKOLORUUVI DIN 912-M10x25	4
61	R22706012	KUUSIOKOLORUUVI ISO 7380 M6x12	4

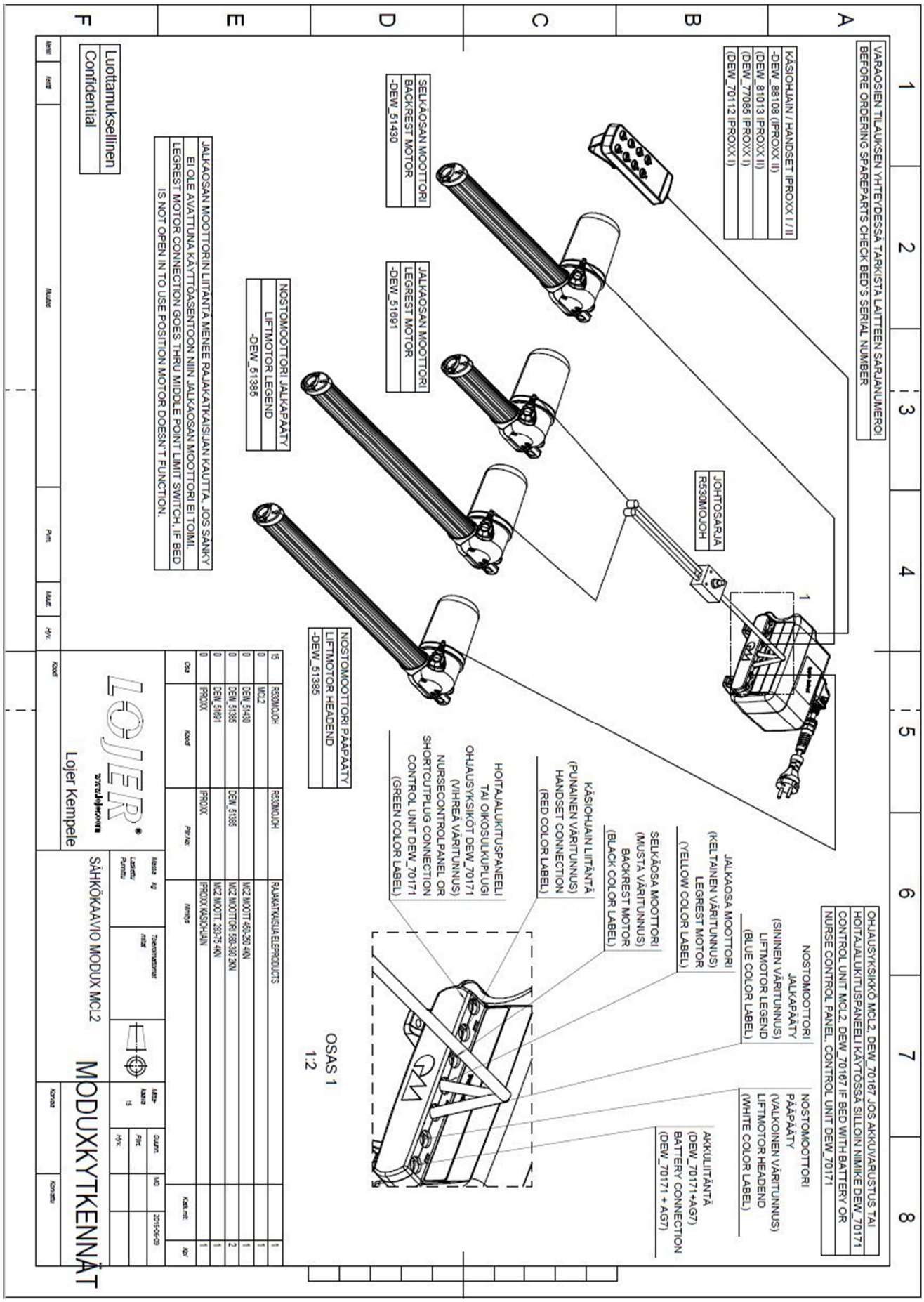
15.2 Wooden parts, rails, and end mechanism



Drawing	MODUXPUUT2 / New side rail -set 800 birch			
Designer	MS / 2020-01-30			
Item	Identifier	Description	Standard	Pcs
1	15008KOIVU	800 Birch end MODUX		2
2	TM40222	Upper slide for "AK-end"		4
3	71058	Rail of the head/foot end 800 & 900 MODUX		2
4	71057	Rail of the head/foot end 800 & 900 MODUX		2
5	R5011141T	Rails' end plug		4
6	100000D20KR	Side rails' locking tap 40223-1		2
7	100000D21KR	Side rails' locking tap 40223-2		2
8	71056	AK-Side rail lower 2085		2
9	71055	AK-Side rail upper 2085		2
10	L9615RU	Wire pull 96x15 black plastic		4
11	100000E11	Side rails' level rod Normal 2-part side rail		4
12	100000E12	MS Thread bushing D6x17-M5 inner thread		8
13	TM40224	Side rails' tap for AK-ends		8
14	TM40225	Lower slide for AK-ends		4
15	R238LS0510	Dowel pin D 5X10 A SFS 4906		8
16	R2520607035	Squeeze spring 0,6x7x35 - 10,5		4
17	R220510K	Groove screw Countersunk head M5x10 Zn 965		16
18	R224PHS4035	Screw SPAX-S 4,0x35 Cheese head POZ ZN		8
19	R224LHS3520D	SPAX-S 3.5X20 cheese head - countersunk ZNC		24
20	DIN 1481	DIN_1481-3x16		4
21	RH06060	Furniture screw M6x60 MESSINKI		4
22	R23803016A	Spring pin D 3X16 V2A DIN 1481		2
23	PUUVÄLIKE	Fastening piece for 800 & 900 ends		4
24	DIN 4762	Socket screw M8x70		8
25	R22616	NYLOC hex nut DIN 985-M6		2

15.3 Electrical parts and wiring diagrams




VARAOSIEN TILAUKSEN YHTEYDESSÄ TARKISTA LAITTEEN SARJANUMERO!
BEFORE ORDERING SPAREPARTS CHECK BED'S SERIAL NUMBER
KÄSIOHJAIN / HANDSET (PROXX I / II)
-DEW_88108 (PROXX II)
(DEW_81013 (PROXX II)
(DEW_77085 (PROXX I)
(DEW_70112 (PROXX I)
SELKÄOSAN MOOTTORI
BACKREST MOTOR
-DEW_51430
JALKAOSAN MOOTTORI
LEGREST MOTOR
-DEW_51691
JOHTOSARJA
R530MOJOH
NOSTOMOOTTORI PÄÄPÄÄTY
LIFTMOTOR HEADEND
-DEW_51385
NOSTOMOOTTORI JALKAPÄÄTY
LIFTMOTOR LEGEND
-DEW_51385
JALKAOSAN MOOTTORIN LIITÄNTÄ MENEE RAJAKATKAISIJAN KAUTTA, JOS SÄNKY
EI OLE AVÄTTUNA KÄYTTÖASENTOON NIIN JALKAOSAN MOOTTORI EI TOIMI.
LEGREST MOTOR CONNECTION GOES THRU MIDDLE POINT LIMIT SWITCH, IF BED
IS NOT OPEN IN TO USE POSITION MOTOR DOESN'T FUNCTION.
OHJAUSYKSIKKÖ MCL2, DEW_70167 JOS AKKUVARUSTUS TAI
HOITAJALUKITUSPANEELI KÄYTÖSSÄ SILLOIN NIMIKE DEW_70171
CONTROL UNIT MCL2, DEW_70167 IF BED WITH BATTERY OR
NURSE CONTROL PANEL, CONTROL UNIT DEW_70171
NOSTOMOOTTORI
JALKAPÄÄTY
(SININEN VÄRITUNNUS)
LIFTMOTOR LEGEND
(BLUE COLOR LABEL)
JALKAOSA MOOTTORI
(KELTAINEN VÄRITUNNUS)
LEGREST MOTOR
(YELLOW COLOR LABEL)
SELKÄOSA MOOTTORI
(MUSTA VÄRITUNNUS)
BACKREST MOTOR
(BLACK COLOR LABEL)
KÄSIOHJAIN LIITÄNTÄ
(PUNAINEN VÄRITUNNUS)
HANDSET CONNECTION
(RED COLOR LABEL)
HOITAJALUKITUSPANEELI
TAI OIKOSULKUPLUGI
OHJAUSYKSIKÖT DEW_70171
(VIHREÄ VÄRITUNNUS)
NURSECONTROLPANEL OR
SHORTCUTPLUG CONNECTION
CONTROL UNIT DEW_70171
(GREEN COLOR LABEL)
NOSTOMOOTTORI
PÄÄPÄÄTY
(VALKOINEN VÄRITUNNUS)
LIFTMOTOR HEADEND
(WHITE COLOR LABEL)
AKKULIITÄNTÄ
(DEW_70171+AG7)
BATTERY CONNECTION
(DEW_70171 + AG7)
OSAS 1
1:2
Luottamuksellinen
Confidential
LOJER
Lojer Kempele
SÄHKÖKAAVIO MODUX MCL2
MODUXKYTKENNÄT

16 Warranty

Limited International Warranty

Lojer warrants, subject to the terms of the limited warranty, that the Equipment is free from defects in material and workmanship, when subjected to normal, proper, and intended usage by properly trained personnel, for a period of **24 months.** For the steel structure the warranty period is **10 years.** Warranty period for accessories and wearing components, either bundled in the original packaging or purchased separately, such as, spare parts, replacement parts, batteries, mattresses shall be **12** months from the date of shipment.

The guarantee will become void if regular preventive maintenance according to user/service instructions has not been performed by trained medical service personnel.

Ask for full warranty terms from your distributor or Lojer Oy service@lojer.com.

17 Contact information

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Sales
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18 References

Lojer Modux nursing bed quick guide
RAISED SIDE RAIL 71025KP, 71026KP -User instructions

