

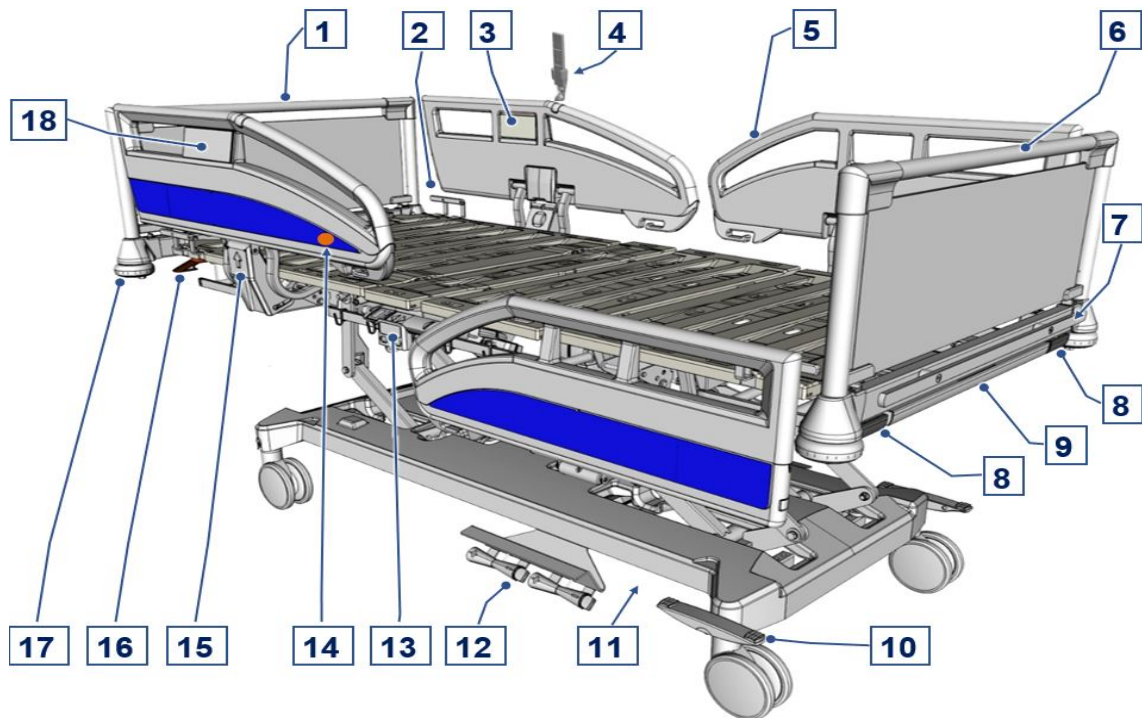
Sicuro tera



Instruction manual

Sicuro tera and model variants

Sicuro tera hospital bed



[1] Headboard, removable	[2] Grab handles/side mattress guides (4x)
[3] Control panel (inside) for patient	[4] LCD handset
[5] Protege safety side	[6] Footboard, removable
[7] Sliding rail (on all sides of the bed)	[8] Bed extension release handles
[9] Linen holder, extensible, with gallery rail	[10] Pedal (for immobilising the bed)
[11] Optional equipment: Fifth castor (not visible in picture)	[12] Optional equipment: Foot pedal for lateral tilting, mattress base height and backrest
[13] Parking position (on both sides) for LCD handset	[14] Magnet (on both sides) to unlock control levels on LCD handset
[15] Safety side activation	[16] Lever for CPR backrest release (2x)
[17] Wall deflection rollers	[18] Control panel (outside) for staff use

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1 Address, market information

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Customers outside Germany can contact our distribution companies in their particular country if they have any questions. Contact details can be found on our website.

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This product is not licenced for use on the North American market. This applies particularly to the United States of America. The distribution and use of this hospital bed in these markets, including through third parties, is prohibited by the manufacturer.

2 Foreword

Dear Customer,

Stiegemeyer has built this bed to give you the best possible help with the challenges posed by nursing and caregiving. We passionately pursue the goal of developing products that are durable and of a high-quality. Our products should make patients feel as safe and comfortable as possible during their stay in bed and also lighten the workload of nursing and care staff. For this reason, the electrical safety and all functions are tested prior to delivery. Each bed leaves our factory in perfect condition.

Correct operation and care are necessary to keep the bed in excellent condition during long-term use. Please therefore read and observe these instructions carefully. They will help you to put the bed into service for the first time and to use it on a daily basis. This instruction manual contains all the information you will need to make it as easy and safe as possible to control and handle this bed, both for you as the operator and for your users. It is a practical reference book and should be kept close to hand at all times.

Even after you have purchased a bed, Stiegemeyer is still on hand to help at any time. Our Assist business division can provide you with customised solutions in all matters relating to inspection and maintenance, repair and process optimisation. You can contact our service centre in Germany by phone on +49 (0) 5221 185 - 777. Customers outside Germany can contact our distribution companies in their particular country if they have any questions. Contact details can be found on our website www.stiegemeyer.com.

We wish you and your users every success and satisfaction in caring for your patients.

Stiegemeyer GmbH & Co. KG

3 Target groups, qualifications and duties

3.1 Operator

An operator (e.g. clinic, hospital, hospital administration) is every natural and legal person with property rights to the product. The operator is responsible for the safe operation of this medical product.

3.2 Responsibilities of the operator

Operators of medical beds in Europe are obliged, in accordance with the new Medical Device Regulation (EU) 2017/745 (MDR) and any existing additional relevant national laws/regulations, e.g. in Germany the Medical Devices Operator Ordinance (Medizinprodukte-Betreiberverordnung, German abbreviation: MPBetreibV), to ensure the long-term safe operation of this medical product with no risk of danger to patients, users or third parties. In other countries outside Europe the relevant national regulations concerning the duties of the operator must be followed!

Only permit persons who have been properly instructed to use this bed!

- Using this instruction manual, which is provided with this hospital bed, ensure that every user is instructed in the safe operation of this bed before using it for the first time!
- Draw every user's attention to the possible hazards that can arise if the hospital bed is improperly used. This applies in particular to the use of electrical drives and safety sides!
- Make sure that substitute staff are also sufficiently well instructed in the safe operation of the hospital bed!
- Ensure that users know where this instruction manual is kept!

Check to ensure that the safety instructions are adhered to!

If the hospital bed is in long-term use, test the functions and check for any visible damage after a reasonable period of time (at least once a year)!

If the owner of the hospital bed changes, the instruction manual should be handed over with the bed.

If any other equipment is attached to the bed, (e.g. compressors for positioning systems, etc.), ensure that this is securely fastened and is functioning properly.

If you have any queries or concerns, consult the manufacturer of the equipment or Stiegelmeyer.

3.3 Users (medical personnel)

Users (e.g. medical specialists, doctors, nursing staff, carers and attendants, ...) are persons who, based on their training, experience or briefing, are qualified to operate the bed on their own authority or to carry out work on it, or have been instructed in how to handle this bed. Furthermore, they can recognise and avoid potential dangers and assess the clinical condition of the patient.

3.4 Users (technical personnel)

Users with a technical background, such as company technicians, service engineers or persons who are capable of carrying out special technical work on the hospital bed due to their training or briefing through the operator.

3.5 Qualification of users

The operator must only appoint users with the following three minimum qualifications to operate the hospital bed:

- Medical training
- Experience in dealing with patients and hospital beds
- Instruction in handling this hospital bed through the operator

For adjusting (technician control level of the LCD handset) and maintaining the hospital bed, the operator must only appoint persons with the following minimum qualification:

- Technical experience of setting and maintaining hospital beds
- Have read and understood the special operation and maintenance instructions for this bed (technician control level of the LCD handset) contained in this instruction manual

3.6 Duties of users

Ensure that the operator instructs you in the safe operation of this bed.

In Europe: Before using a hospital bed, you, as the user, must check each time that the hospital bed is fully functional and in perfect working order, and must observe the instructions in the instruction manual - particularly the safety information - during operation and maintenance in accordance with the new Medical Device Regulation (EU) 2017/745 (MDR). Only by doing so can operating errors be prevented and correct handling ensured in order to prevent injuries and damage from occurring.

In other countries: The relevant national regulations concerning the duties of the operator must be followed!

Please also follow the corresponding instructions in the instruction manual for accessories attached to the bed.

Pay special attention here to the safe routing of all loose connector cables, tubing, etc.

Ensure that no obstacles such as bedside cabinets, supply rails or chairs could impede adjustments to the bed.

If other equipment (e.g. compressors for positioning systems, etc.) is attached, ensure that all items of equipment are securely fixed and function properly.

If you have any queries or concerns, consult the manufacturer of the equipment or Stiegelmeier.

CAUTION

Risk of injury

Failure to heed this warning may result in physical injury and material damage!

- If any damage or malfunction is suspected, take the bed out of service.
- Unplug the bed from the mains supply immediately.
- Indicate clearly that the hospital bed is "OUT OF ORDER".
- Report this immediately to the operator responsible.

3.7 Patient

A patient is defined as a person who is in need of care, ill, infirm or disabled, and occupies this bed.

It is a requirement that the operator or user instructs each new patient in the bed functions that are important for him/her.

4 Conventions of this instruction manual

4.1 Safety instructions

In this instruction manual, safety information is displayed in the following way:

WARNING

WARNING

- WARNING indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION

CAUTION

- CAUTION indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.

ATTENTION


ATTENTION

- NOTICE indicates a harmful situation that could result in damage to the product or something around it.

The safety symbols used are not a substitute for the written safety information. It is important therefore to read the safety information and follow the instructions exactly!

4.2 Icon information

General information and cross-references will be displayed in the following way:

 General information, tips and helpful courses of action.



Cross-reference or active link: Indicates the chapter name and page number of the instruction manual where you will find what you are looking for. Example: [Safety instructions](#) » [8](#)

5 Safety instructions

5.1 Safety information for operating the bed

This hospital bed is not suitable for patients under 146 cm in height or for small children.

This hospital bed may only be operated by persons who have received instruction from the operator in its safe operation.

Electrical adjustments are only possible when the hospital bed is properly connected to the mains supply (exception: emergency operation with batteries (optional)).

If the owner of the hospital bed changes, the instruction manual must be handed over with the bed.

5.1.1 Electrical cables and connections

WARNING


Risk of electric shock

Failure to heed this warning may result in fatal electric shocks due to damaged mains power cables! Take the following measures to prevent hazards due to electric shock and malfunctions.

- Replace damaged mains power cables immediately! If a damaged mains cable continues to be used, this can lead to electric shock, fire and other hazards as well as malfunctions.
- Connect the bed only to a properly earthed mains electrical socket.
- Route the mains cable in such a way that it cannot be pulled, driven over or damaged by moving parts, or in any other way, when the bed is operated. Before moving the bed, always make sure that you have unplugged it from the mains supply.
- Before moving the bed, always make sure that you have unplugged it from the mains socket.
- Hang the mains cable in the mains cable holder provided on the headboard to ensure that it will not fall off or trail on the floor.

- At weekly intervals when the bed is being used, carry out a visual inspection of the mains cable to check for damage (scuffing, exposed wires, kinks, pressure points, etc.). A check should also be performed whenever the cable has been subjected to any mechanical load, e.g. has been driven over by the bed itself or by an equipment trolley, or whenever the cable has been bent, stretched or violently pulled, e.g. due to the bed rolling away while it is still plugged into the mains socket, and before plugging the cable back into the mains socket whenever the bed has been moved or relocated.
- Check the strain relief of the power mains cable regularly to ensure that it is securely fixed.
- Do not place multiple socket bars under the bed. This could cause electrical hazards due to damaged mains cables or penetrating fluids.
- Do not continue to use the bed if you suspect that the mains cable could be damaged.

5.1.2 Operating time of electric drives

-  Continuous operation must not exceed two minutes. After this time, a rest period of at least 18 minutes must be observed.

If the electric drive is operated for a much longer period, e.g. due to the patient continually "playing" with the handset, the electronic thermal protection device integrated in the control unit will deactivate the thermal protection device temporarily.

In this extremely rare case, the control unit will be available for use again after cooling down for approximately 20 minutes.

5.1.3 Handset

ATTENTION

Material damage

Failure to heed this warning may result in collisions between the handset and other items or equipment. This can lead to defects or accidentally trigger unlocked adjustment functions.

- When not in use, stow the handset in the holders on the bed in such a way that it cannot inadvertently fall off, and ensure that the keypad on the outside of the bed is protected from unintended use.

ATTENTION

Material damage

Failure to heed this warning may result in system faults due to locked adjustment systems.

- When routing the handset cable, ensure that it cannot be crushed, stretched or otherwise damaged by any moving parts of the bed.
- Hang the handset with the keypad facing the inside of the bed.

ATTENTION

Material damage

Failure to heed this warning may result in damage to property which could adversely impact the loading capacity of the hospital bed or its adjustment functions. Before carrying out any electrical adjustments, make sure that

- No obstacles such as bedside cabinets, supply rails, other equipment, chairs or wall protection rails are in the way,
- There are no objects lying on the chassis,
- People are not sitting on slightly raised sections of the backrest and leg rests.

ATTENTION

Malfunctions

The following applies to electric handsets with an integrated magnetic sensor:

Failure to heed this warning may result in malfunctions!

Strong magnetic fields can impact the locking functions of the electric handset.

- Always keep these handsets at a distance of at least 30 cm from other devices that emit such magnetic fields (e.g. permanent magnets, mobile wireless communication devices with NFC function, Qi chargers, RFID readers).

WARNING

Risk of injury

Failure to heed this warning may result in injury.

Lock the operating functions for the patient on the handset if

- The patient is unable to operate the bed safely,
- The patient is unable to free himself or herself from potentially dangerous situations,
- The patient is exposed to an increased risk of entrapment during backrest and thigh rest adjustments when the safety sides are raised,
- The patient could be at risk from inadvertent adjustment of the drives,
- children are left unsupervised in the room with the bed.
- In these cases, adjustments must only be performed by a person trained by the operator, or in the presence of a trained person!
- The following sticker on the linen holder reminds you to lock the handset:



5.1.4 Bed adjustment

WARNING

Risk of crushing

Failure to heed this warning may result in physical injuries!

- This bed is only intended for use as a single bed. Keep a minimum safety distance of one bedside cabinet width (approximately 60 cm) between one bed and the next.
- When making any adjustments, always ensure that no limbs belonging to patients, users, other persons, and especially playing children, could become trapped underneath the rests or the mattress base.


ATTENTION

Material damage

Failure to heed this warning may result in damage to the hospital bed and/or lifting frame, and this could have an adverse effect on the loading capacity of the hospital bed or the adjustment functions.

Ensure that:

- No obstacles such as bedside cabinets, supply rails, other equipment, chairs or wall protection rails are in the way,
- There are no objects lying on the chassis,
- People are not sitting on slightly raised sections of the backrest and leg rests.

 If the load is too high, an electronic overload switch is activated and the drive system is automatically switched off. After a short movement in the opposite direction and removal of the overload source, the drive system will continue to move in the intended direction.

5.2 Special hazards

5.2.1 Risk of fire

WARNING

Risk of fire

Failure to heed this warning may result in physical injury and material damage!

- Use only flame-retardant mattresses and bedding if possible.
- Inform patients that smoking is not allowed in bed.
- Only use additional equipment (e.g. electric blankets) and other electrical devices (e.g. lamps, radios) that are in perfect working order!
- Ensure that this equipment is used only for the purpose intended.

- Ensure that this equipment is not inadvertently placed on or under the bedding (danger of overheating)!
 - Avoid using extension cables or multiple socket bars under the bed (risk of fire due to penetrating fluids).
 - Do not place any flammable materials (e.g. bedding) or any solid, hard objects underneath the mattress base (danger of heat congestion/electrical hazards when in contact with electrical components installed there, especially in the area of the power supply/battery under the backrest).
-

5.2.2 Electromagnetic interference

As electromedical equipment, this hospital bed is subject to special safety measures with respect to electromagnetic compatibility (EMC). For this reason, observe the following instructions when installing and operating the hospital bed.

Portable and mobile high-frequency communication devices (e.g. cordless telephones, mobile telephones, baby monitors, WLAN, WIFI, wireless equipment, etc.) can influence the operation of electromedical equipment. These influences have been minimised by means of the robust, interference-resistant design of the electrical adjustment features of this bed.

This hospital bed must not be used in combination with high frequency surgical equipment.

As with every electrical device, even if all the specified EMC limiting values are observed during operation, disruptions from and to other closely situated high-frequency communication devices cannot be completely ruled out (e.g. 'crackling' on a radio). In such rare cases, increase the distance between the devices or align them differently, and make sure that they do not use the same electrical outlet, or switch the disruptive/disrupted device off temporarily. Explain the necessary precautions to the patient as well.

For further technical details, see [Information on electromagnetic compatibility \(EMC\)](#) » 193

5.3 Safety information for attachments and additional equipment


Efficient and safe operation combined with maximum protection of patients can only be guaranteed if original Stiegemeyer accessories are used that are designed for the relevant model of bed! Make sure that by attaching accessories, crush or shearing zones for the patient are not created when the bed sections are adjusted. If this cannot be ensured, you must lock those particular adjustment controls! To do so, activate the locking functions for electric adjustments.

5.3.1 Use of additional electromedical equipment

When additional mains-operated electrical (electromedical) equipment such as infusion pumps, data processing devices, ECG/EEG devices, etc., is used in combination with this electrically adjustable bed, the entire arrangement constitutes an "electromedical system".

When using electromedical equipment, precautions must be taken to comply with electromagnetic compatibility (EMC) requirements and allowable leakage current limits. The installation and commissioning of electromedical devices must be carried out in accordance with EMC recommendations described in the accompanying documentation. If necessary, the bed (using the connection pin at the head end of the bed), and also the additional equipment associated with the bed, should be connected to the hospital's potential equalisation (PE) system.

When the bed is connected to the mains electricity supply, it must always be connected to the hospital's potential equalisation system when intravascular and intracardiac applications are involved. The potential equalisation of the bed applies to the mattress base frame. Additional assemblies and accessories (such as headboards and footboards, safety sides, patient lifting poles, infusion stands) are excluded from these requirements.

-  The connection for additional potential equalisation is located on the head-end cross tube under the headboard.

On request, the potential equalisation can be equipped with an earth wire (accessory).

Similar to illustration. Identical procedure.

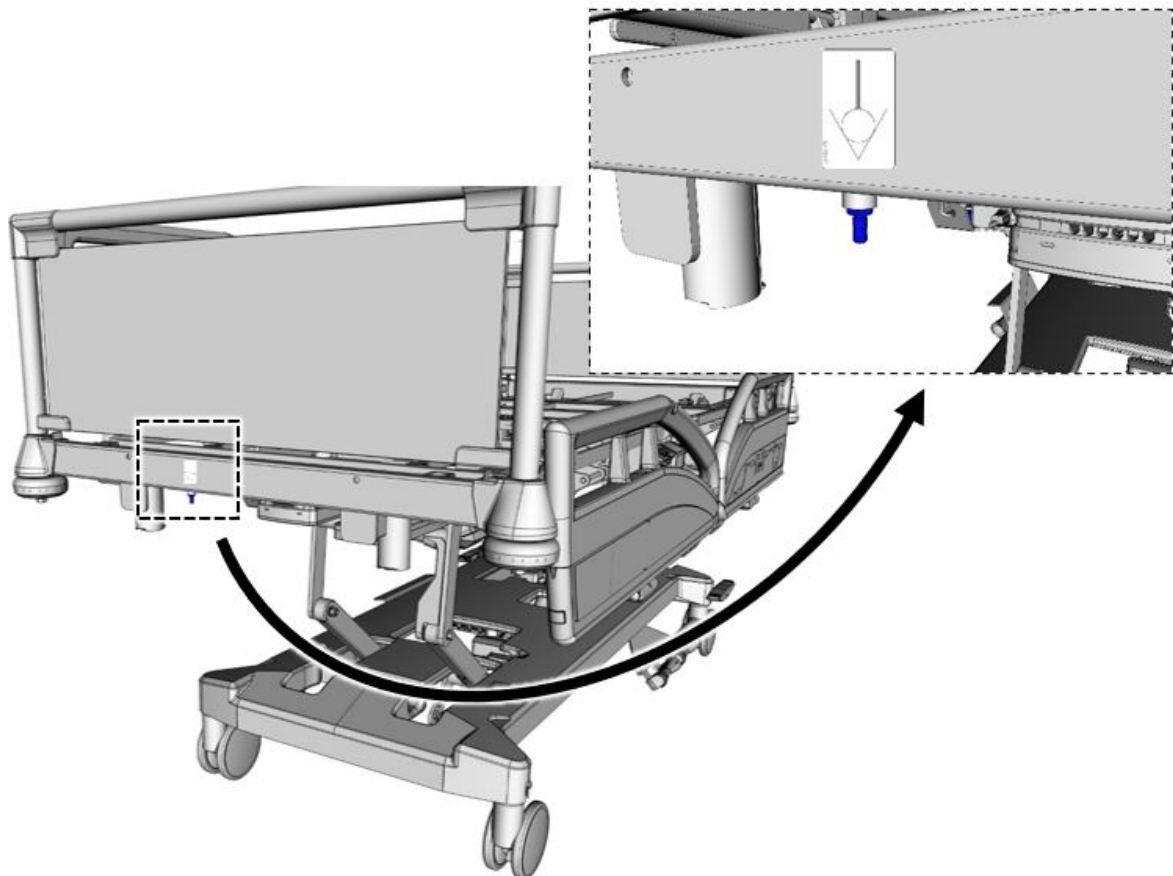


Image1: Connection pin and potential equalisation symbol

In addition, observe the information given in:

- Chapter [Electromagnetic interference](#) » 13 and chapter [Safety information concerning the place of use](#) » 61.
- All the information given in the instruction manuals of the additional devices as well as the requirements stipulated in the relevant standard EN 60601-1.

5.3.1.1 Use of ECG/EEG equipment

It is not normally a problem to use ECG/EEG equipment for patient monitoring together with this hospital bed.

Should the bed's electrical equipment, contrary to expectation, have a marginal effect on the measurements, the ECG electrode conductors should be placed as parallel as possible to the patient's arms and legs. The bed should then be connected to the hospital's potential equalisation (PE) system using the connection pin at the head end of the bed.

Many of these devices also feature a 50Hz/60Hz line filter which can be turned on if necessary. If this measure is not sufficient, unplug the bed from the mains supply.

This effectively avoids any possible malfunctions.

5.3.2 Use of patient lifts

ATTENTION

Material damage

Failure to heed this warning may result in damage to cables and drives due to the use of patient lifts.

- Before using a patient lift or cleaning equipment, etc., be aware of the restricted floor clearance under the bed. This will help to prevent damage to the chassis and/or the electric adjustment drives due to collisions when lowering the bed.
-

5.4 Safety information for accessories

CAUTION

Material damage

Failure to heed this warning may result in damage to property and injury due to the use of incorrect accessories and unsuitable spare parts!

- Efficient and safe operation combined with maximum protection of patients can only be guaranteed if original Stiegemeyer accessories are used that are designed for the relevant model of bed.
-

5.5 Safety information for disposal

WARNING

Risk of infection

Failure to heed this warning may endanger health!

- The operator must ensure that all components of the bed that are to be disposed of are not infectious or contaminated.

WARNING

Health, property and environmental hazards

Failure to heed this warning may result in damage to property, health risks and environmental damage!

Please observe the following safety precautions for Li-ion batteries (optional equipment):

- The batteries are tested according to UN 38.3 and are therefore generally suitable for safe transport
- When returning BA21-type lithium-ion batteries, use only the transport packaging specified for this purpose in accordance with UN3480! (For this purpose, re-use the original transport packaging provided by Stieglmeyer for the replacement batteries supplied)
- For returns, the requirements of the European Agreement on the International Carriage of Dangerous Goods by Road (ADR) and the resulting national laws must be observed. In other countries outside Germany or the EU, the relevant national regulations must be complied with.
- Outwardly damaged battery sets must not be shipped, but must be disposed of in non-flammable, leakproof and sealed containers at local collection points in accordance with national regulations.
- In the case of BA21-type lithium-ion batteries, read and follow the information given in the safety data sheet supplied with every replacement delivery.
- Additional safety information is given in the chapters [Replacing the battery \(Li-ion\)](#) » [160](#) and [Batteries](#) » [190](#).

CAUTION

Environmental risk

Failure to heed this warning may result in environmental damage!

- Do not dispose of batteries with domestic waste.
 - They can be returned to Stieglmeyer or disposed of at local waste collection points in the same way as car batteries.
 - Outwardly undamaged, discharged battery sets can also be returned to Stieglmeyer.
-

6 Product description

This bed fulfils all the requirements of the Medical Device REGULATION (EU) 2017/745 (MDR) and is considered a Class I medical device in accordance with the classification rules.

6.1 Intended use

Medical bed for patients to lie in, with optional restraint system to prevent patients from inadvertently falling out. Device meant to assist diagnostics, monitoring, prevention, treatment, alleviation of disease or compensation of an injury or impairment.

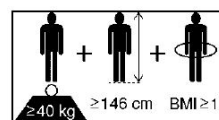
6.2 Use for the intended purpose

- This bed may only be used by qualified personnel within closed rooms in hospitals and comparable medical facilities.
- Qualified personnel must be skilled in handling the beds and be thoroughly conversant with the instruction manual.
- If the owner of the bed changes, the instruction manual must be handed over with the bed.
- The bed with its stable, smooth-running castors is designed for being moved within the room as well as frequently in corridors and across thresholds with a height of up to 2 cm.
- The safe working load is 260 kg (patient + accessories).
- This bed is only suitable for accommodating adult patients who are taller than 146 cm.
- The bed itself is not life sustaining or life supporting.
- The bed has no medical indication.
- This bed is suitable for repeated use.
- This bed must only be used as a single bed.
- This bed must not be used in explosive environments caused, for example, by cleaning agents or anaesthetics.
- This bed must not be used in combination with high frequency surgical equipment.
- Before using the safety sides, assess and take into consideration the clinical condition and particular physical build of the patient. Please also refer to the special safety information in chapter [Using safety sides](#) » 116.


This bed may only be used under the operating conditions described in this instruction manual. Its use for any other type of application is deemed to be contrary to the intended purpose.

6.3 Contraindications

- This bed is only suitable for patients who do not fall below the following minimum body size/weight:
 - Height: 146 cm,
 - Weight: 40 kg
 - Body mass index 'BMI': 17.



The following symbol can be found on the bed chassis:

-  Owing to the smaller limbs of residents with a body height/weight that is less than this, there is an increased risk of entrapment between the open spaces of the safety sides when safety side systems are used.

BMI calculation:

BMI = weight of patient (kg) / height of patient (m)²

- **Example a:**

→ 41 kg / (1.5 m x 1.5 m) = 18.2 = ok!

- **Example b:**

→ 35 kg / (1.5 m x 1.5 m) = 15.6 = not ok!

6.4 Side effects

Unless suitable measures are taken, long-stay patients may develop decubitus.

6.5 Product variants

The Sicuro tera hospital bed is available in two different mattress base sizes. The mattress base height of the hospital bed can differ depending upon the type of castors used.

Mattress base sizes (W x L) in cm:	90x200 / 90x210
Mattress base height adjustment range in cm:	45 - 84 or 46 - 85 (depending on type of castors)

6.6 Components of the bed

6.6.1 Headboard and footboard

The standard version of the bed comes with a removable head and footboard to provide better access to the patient in certain cases (such as when taking X-rays).

6.6.2 Mattress base

The mattress base is divided into a backrest, a seat part, a thigh rest and a lower leg rest. The mattress base height can be adjusted horizontally, and can be tilted laterally or into a Trendelenburg or reverse-Trendelenburg position. The backrest and thigh rest can be adjusted separately. The components for the electric drive system are accommodated under the mattress base. A bed extension is contained in the standard version. For details concerning use, see [Extending/shortening the mattress base](#) » 64.

6.6.3 Chassis

The chassis is located underneath the mattress base. The bed has four castors that can be centrally locked with a brake pedal. One of the castors is equipped with a steering lock which enables the bed to be moved in a straight line.

Fifth castor (optional equipment)

The chassis can be fitted with an optional fifth castor which is located in the centre of the chassis. In this case, the fifth castor takes over the function of the steering lock.

6.6.4 Electric drive system

The electrical drive system for this bed consists of the following components:

- A drive for the backrest, a drive for the thigh rest, a lateral tilt drive and two drives for the mattress base height.
- Central control unit under the mattress base (head end). The control unit there uses a transformer to generate a 24-volt protective low voltage which is non-hazardous for patients and users. The drives, the control panel (inside and outside) and, depending on the features available, additional electric locking and operating devices are connected to the control unit. These components operate on the 24-volt protective low voltage generated and have dust and water protected plug connections.
- Batteries (Li-ion) for mains-independent emergency operation.

- **Optional equipment:** LCD handset, patient scales (information on scales can be found in the supplementary instruction manual), mattress base height foot pedal, lateral tilt foot pedal, backrest foot pedal, brake alarm, under bed light, OOB system (Installation and operation of the Out-of-Bed system (OOB) is described in a separate instruction manual).

6.6.5 Control units

This hospital bed provides various control devices for adjusting the bed and positioning components. The bed is equipped with a control box and a control panel as standard supply. The following table shows the standard features and the optional equipment:

Designation of components	Component variants	Standard features (x) Optional (o)
Control units	Control panel (inside and outside)	x
	Control box	x
	LCD handset	o
	Foot pedal: For adjusting the height of the bed/lateral tilting/backrest	o

The control box, foot pedal and control panel (outside) are only for use by medical and technical personnel.

6.6.5.1 LCD handset

The LCD handset is the principal operational control for adjusting and setting the bed, both for the patient and for medical and technical users.

The adjustment options for medical and technical staff are defined at different control levels that each need to be activated separately. It is possible to switch between the control levels of the LCD handset by holding the magnetic sensor [3] on the handset briefly (for about ½



second) against the magnetic unlocking key (symbol; see chapter [Magnetic unlocking key » 35](#)).

The control level for medical users comprises the locking function and special adjustment functions. On the control level for technical users (technician control level) the symbols are displayed against a dark background.

The LCD handset has a straightforward layout and a user-friendly design. It has a backlit display, a toggle switch and two buttons.

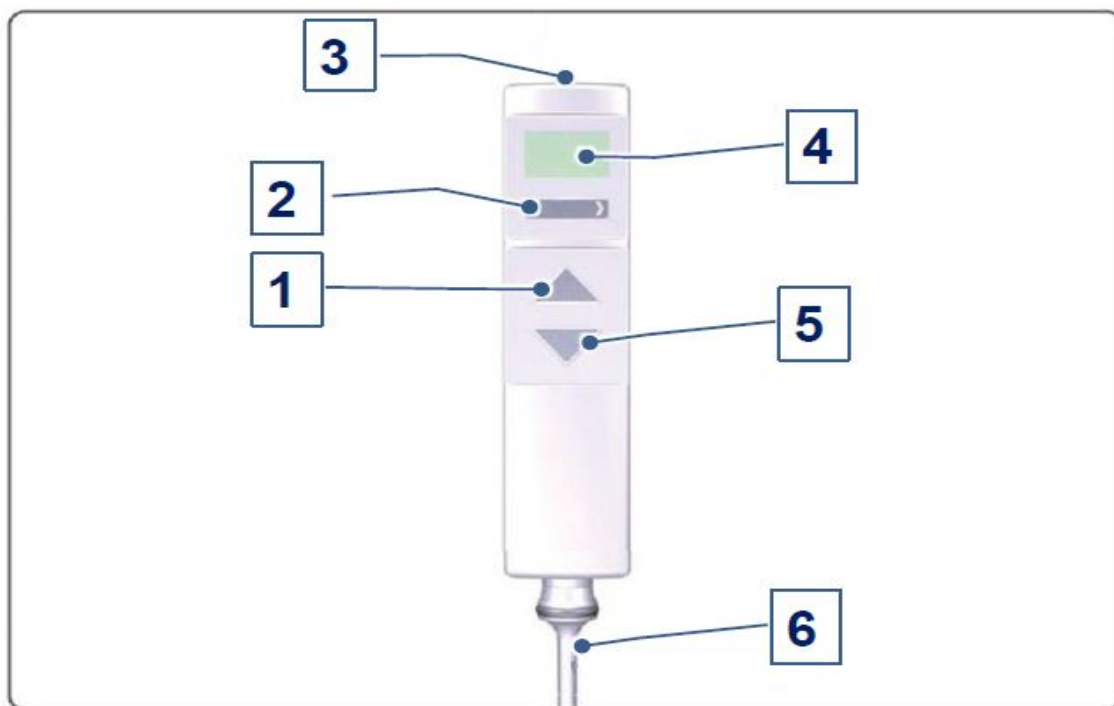



Image2: LCD handset

1	UP button	2	Toggle switch
3	Magnetic sensor	4	Display
5	DOWN button	6	Handset cable

When not in use, the LCD handset can be stored in the following places:

- Small or large holder on the top safety side rail for use by the patient (on each side of the bed).
- Parking position with a special holder (half way along each side of the bed).

 Similar to illustration. Identical procedure.

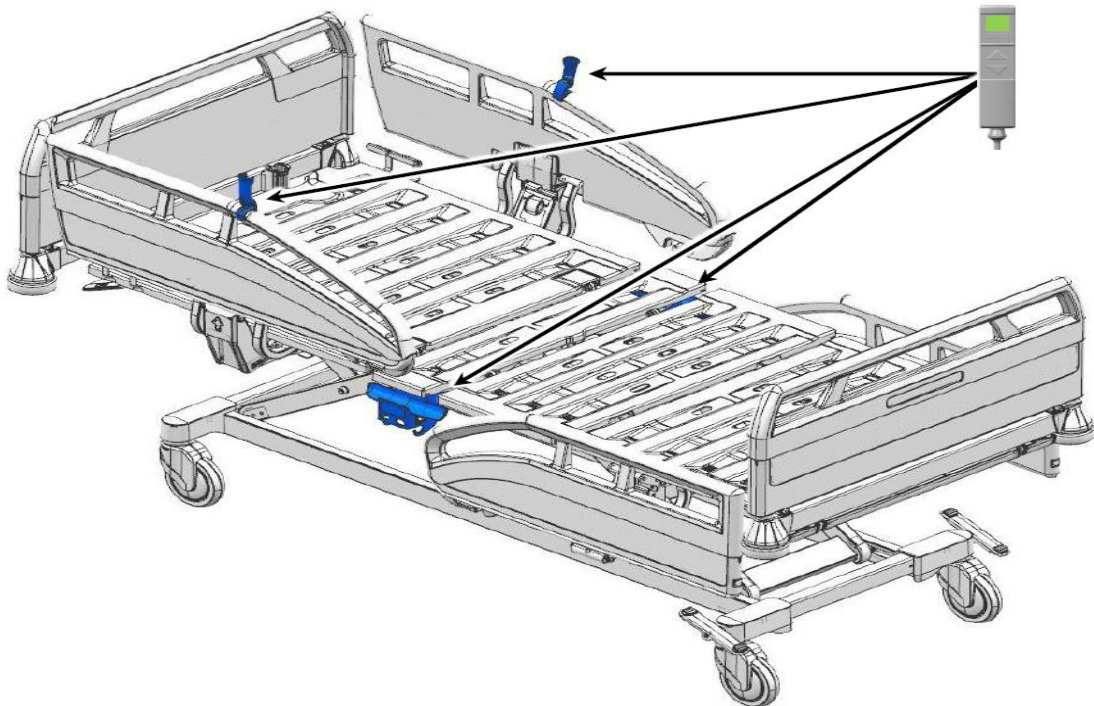


Image3: Positions for storing the LCD handset

Control level 1: Patient (= standard level)

This chapter contains an overview of the adjustment options on the patient control level.

- This level is the default level and the handset automatically reverts to this level 10 seconds (“EasyCare” level: 2 minutes) after the last button has been pressed at a different level.
- Switching to a different control level is only ever possible from this standard level.
- Adjustment options are selected by pressing the toggle switch, and then seeing the symbols appear on the display, and then pressing the UP or DOWN buttons.

i Adjustment options can also be locked by medical staff. The symbols for locked adjustment options are then no longer displayed at the patient control level. Locked adjustment functions are indicated with a closed padlock symbol on the integrated control panel on the outside of the Protega safety side. On the integrated (inside) control panel, the buttons for the locked adjustment functions are deactivated, and the LED then lights up orange when these buttons are pressed.

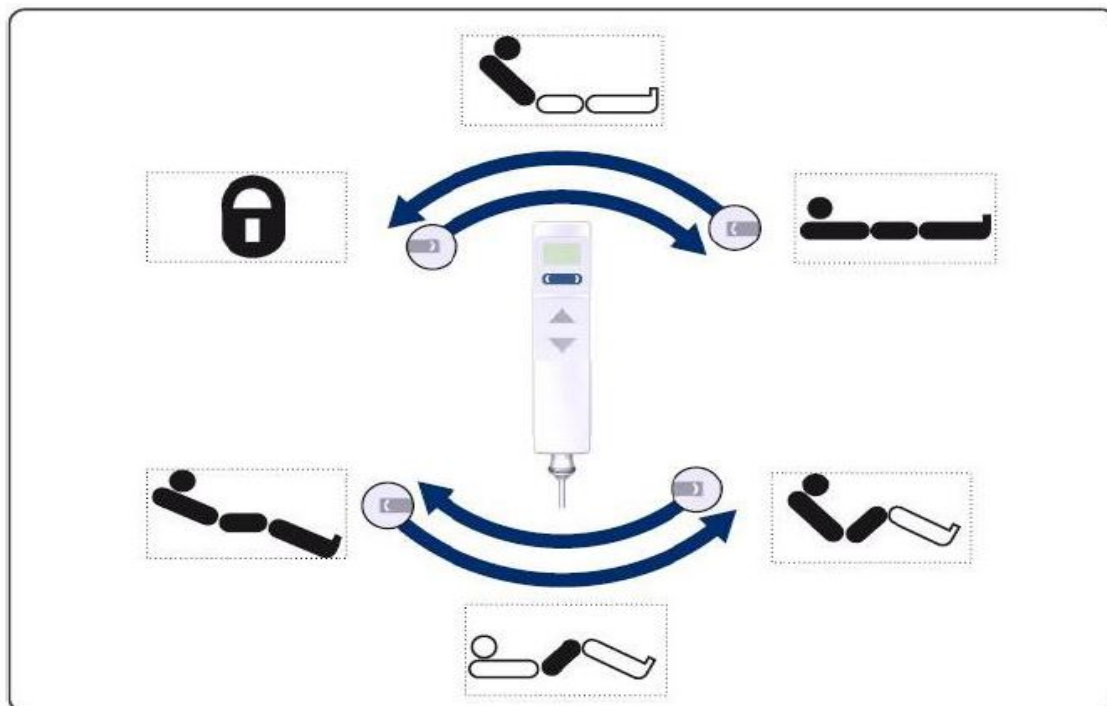


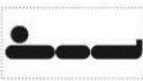





Image4: Patient control level: Toggle switch functions

Symbol	Explanation	Symbol	Explanation
	Backrest adjustment function		Thigh rest adjustment function
	Mattress base height adjustment function		Sitting position adjustment function
	Auto contour adjustment function		All adjustment options locked

Control level 2: Medical staff control level

This provides an overview of the adjustment options at the control level for medical personnel (staff control level).

- Automatically 10 seconds after the last key has been pressed, or immediately if the magnetic sensor [3] is held briefly again against the magnetic unlocking key, the handset reverts to control level 1: patient control level.
- Adjustment options are selected by pressing the toggle switch, then seeing the symbols appear on the display, and are then carried out by pressing the UP or DOWN buttons.

- i** Adjustment options can be locked using the locking functions and then unlocked again (see [Locking/unlocking electric adjustment functions](#) » 80). The symbols for locked adjustment options are then no longer displayed at the patient control level.
- i** After changing to staff control level, the CPR symbol appears on the display screen, and the screen background flashes continuously as an indication.

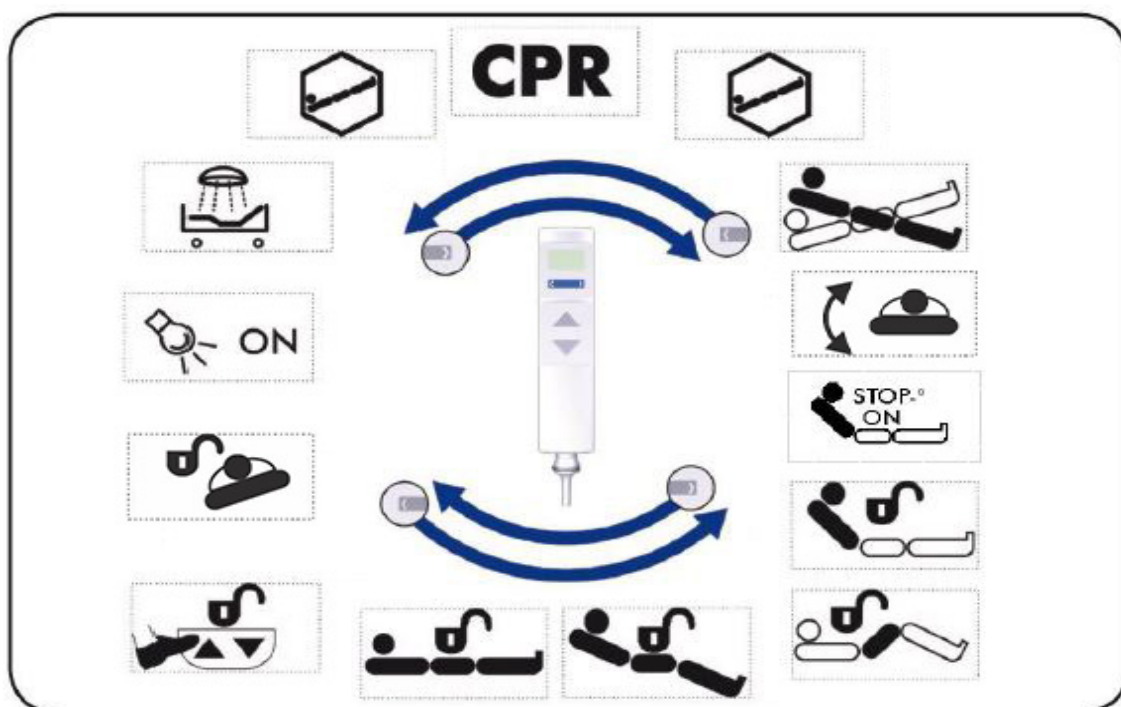











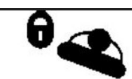


Image5: Medical staff control level: Toggle switch functions

Symbol	Explanation	Symbol	Explanation
	Resuscitation position adjustment function		Thigh rest locking function
	Shock position (Trendelenburg position) adjustment function		Sitting position locking function
	Automatic washing system position		Foot pedal locking function (optional)

Symbol	Explanation	Symbol	Explanation
	Trendelenburg/reverse-Trendelenburg position adjustment function		Switching under bed light ON/OFF (optional)
	Backrest locking function		Switching backrest intermediate stop ON/OFF
	Lateral tilt adjustment function		Lateral tilt locking function

Control level 3: Technical staff

This provides an overview of the handset functions at the level accessed by technical personnel (technician control level). For further details, please refer to chapter [Replacement of electrical components](#) » 159 and to chapter [Troubleshooting](#) » 175. Adjustment options are selected by pressing the toggle switch and are then carried out by pressing the UP or DOWN buttons.

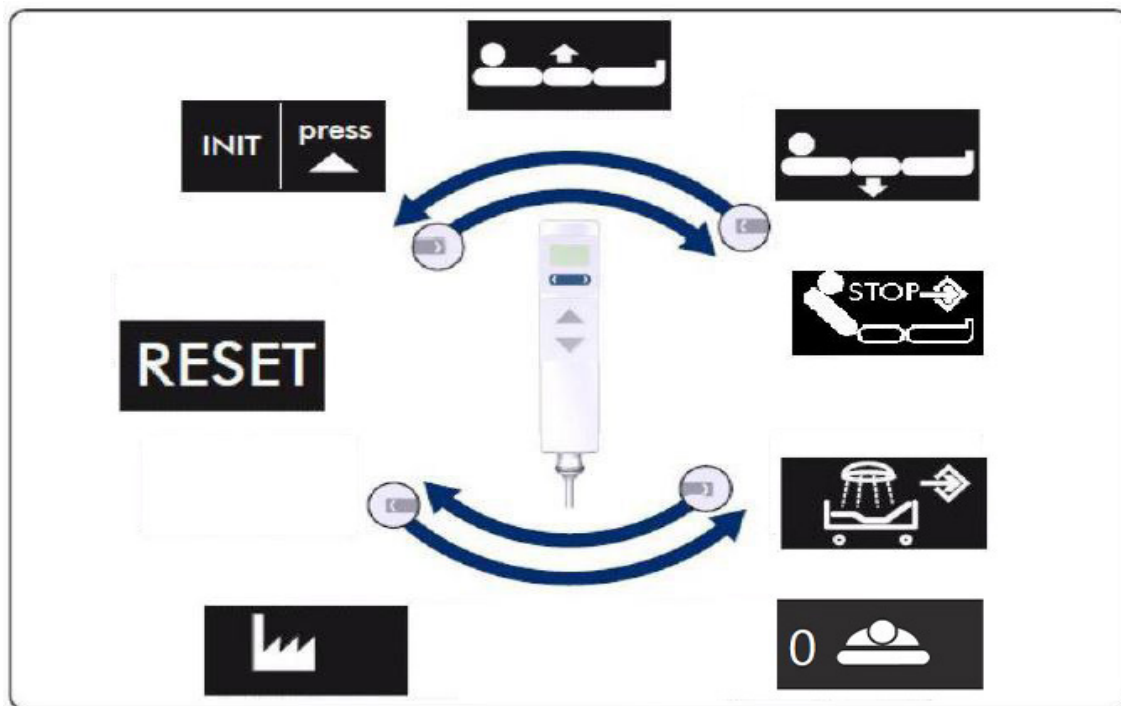







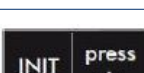


Image6: Technical staff control level: Toggle switch functions

Symbol	Explanation	Symbol	Explanation
	Function: Restrict maximum mattress base height		Function: Restore factory settings
	Saving the lateral tilt home position		Function: Define automatic washing system position
	Save any position as an intermediate backrest stop		Function: RESET
	Function: Limit minimum mattress base height		Function: Initialisation

6.6.5.2 Control panel (inside)

The integrated (inside) control panel is an optional feature which is only available in conjunction with a Protega safety side. The control panel is integrated in the Protega safety side at the head end and is designed for use by the patient. Patients can adjust approved bed adjustments from the comfort of their lying position.

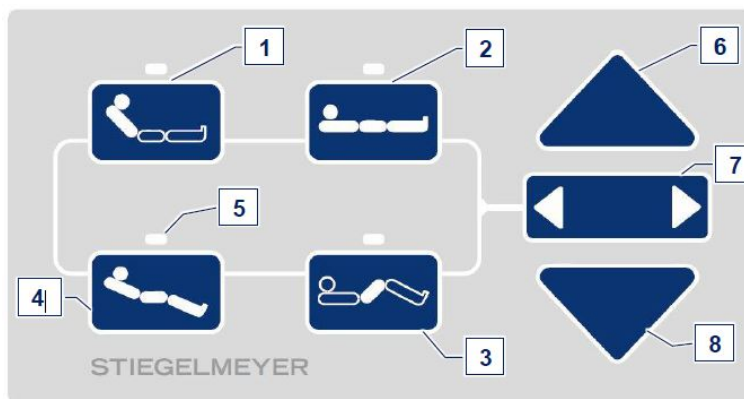


Image7: (Inside) control panel control level

1	Backrest adjustment	2	Mattress base height adjustment function
3	Thigh rest adjustment function	4	Sitting position adjustment function
5	LED	6	UP button

7	Toggle switch	8	DOWN button
---	---------------	---	-------------

6.6.5.3 Control panel (outside)

The integrated control panel (outside) is an optional feature which is only available in conjunction with a Protega safety side. The panel is attached on the outside of the head-end Protega safety side and so is only accessible for medical personnel. Medical staff can use the panel to adjust the bed and to lock or unlock adjustment functions for the integrated (in-side) control panel, depending on the clinical condition of the patient.

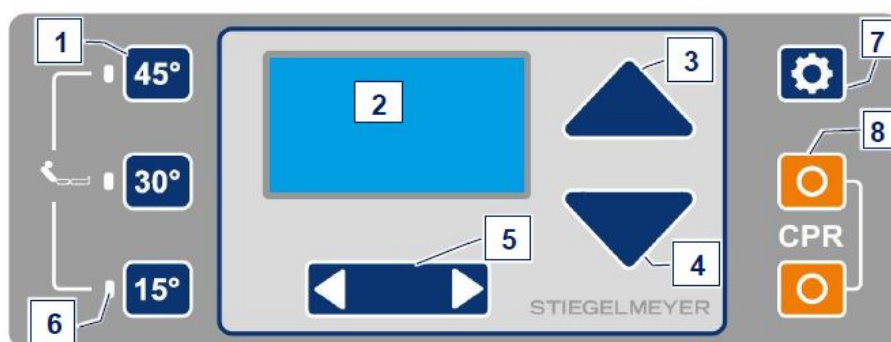


Image8: Control panel (outside) control level

1	Backrest setting function 15°, 30° and 45°	2	Display
3	UP button	4	DOWN button
5	Toggle switch	6	LED
7	Settings button	8	CPR buttons

6.6.5.4 Control box

The control box is used to carry out all electric adjustments and to lock LCD handset functions for the patient.

When the bed is connected to the mains supply, a yellow LED indicates that the battery is charging.

The control box is located in the linen holder and can be attached to the footboard handrail.

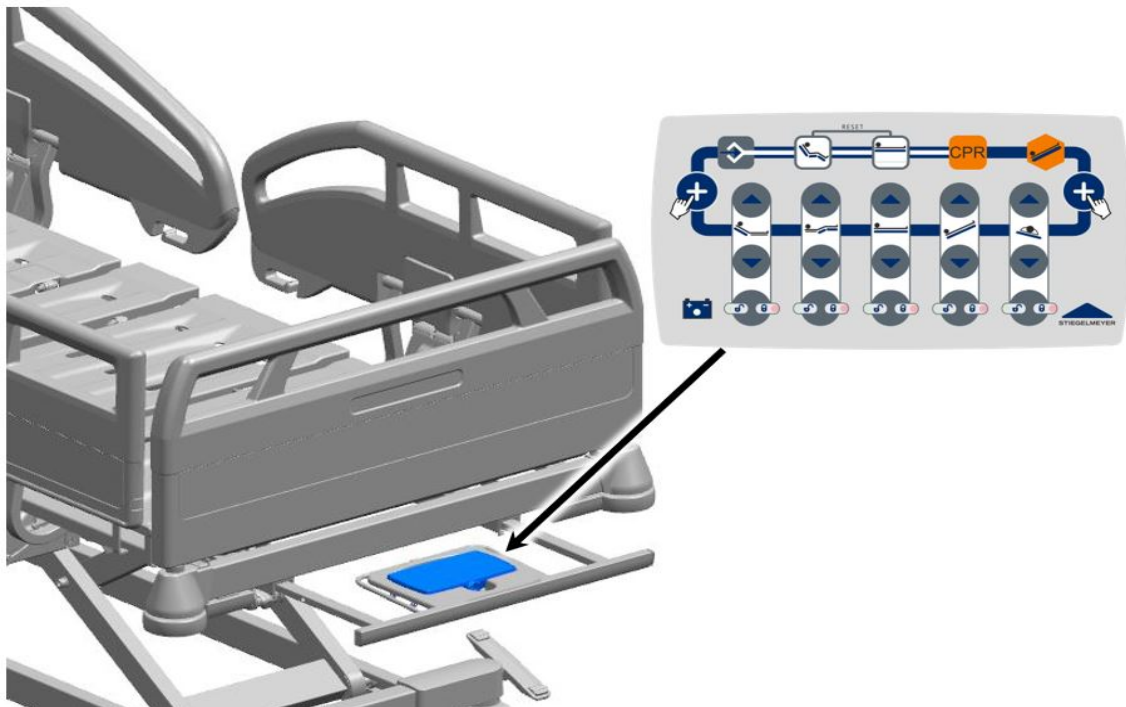

















Image9: Position of control box


The buttons and LEDs on the control box have the following functions:

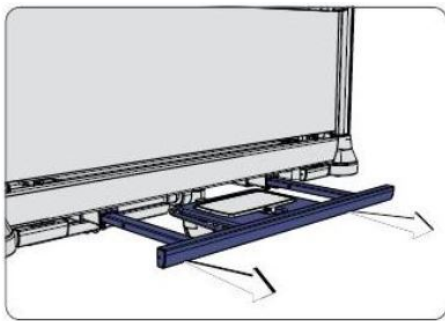
Button/display	Explanation
	Unlock button
	Memory button
	Sitting position button

Button/display	Explanation
	<p>Emergency CPR button (to return all mattress base sections quickly to a flat position)</p>
	<p>Normal position button</p>
	<p>Shock recovery position button (Trendelenburg position)</p>
	<p>Battery charge indicator</p> <p>A yellow LED indicates the charging status when the bed is plugged into the mains socket:</p> <ul style="list-style-type: none"> • LED on: the battery is charging • LED off: the battery is fully charged
	<p>Buttons for locking and unlocking each of the functions</p>
	<p>UP button for each function</p>
	<p>DOWN button for each function</p>
	<p>Backrest function</p>

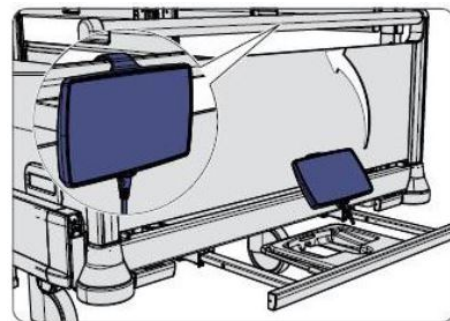
Button/display	Explanation
	Thigh rest function
	Height adjust function
	Trendelenburg or reverse-Trendelenburg position function
	Lateral tilt function

Using the control box

 Similar to illustration. Identical procedure.

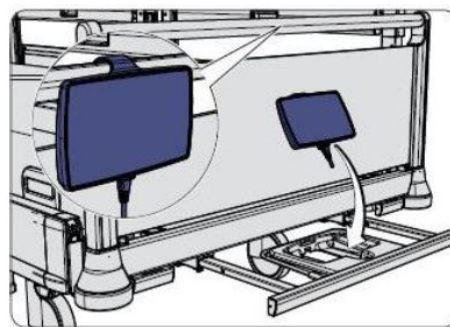


1 Pull the linen holder out from under the mattress base. The linen holder is located under the footboard.



2 Take the control box out of the linen holder and hang it onto the top rail of the footboard. This makes it easier and more ergonomic to use.

- 3 Place the control box back in the linen holder when it is no longer needed and slide the linen holder back under the footboard. Ensure that cables are routed correctly (do not pinch or trap the cables).



6.6.5.5 Foot pedal

The foot pedal is an optional piece of equipment that is used for adjusting the height, laterally tilting the bed and adjusting the backrest. The foot pedals are attached on both sides to the crossbeam on the bed chassis. Users can raise or lower the bed by pressing the corresponding part of the toggle switch with their foot and can tilt the mattress base to the right or left.

The foot pedal is fitted with a protective cap to prevent accidental use.

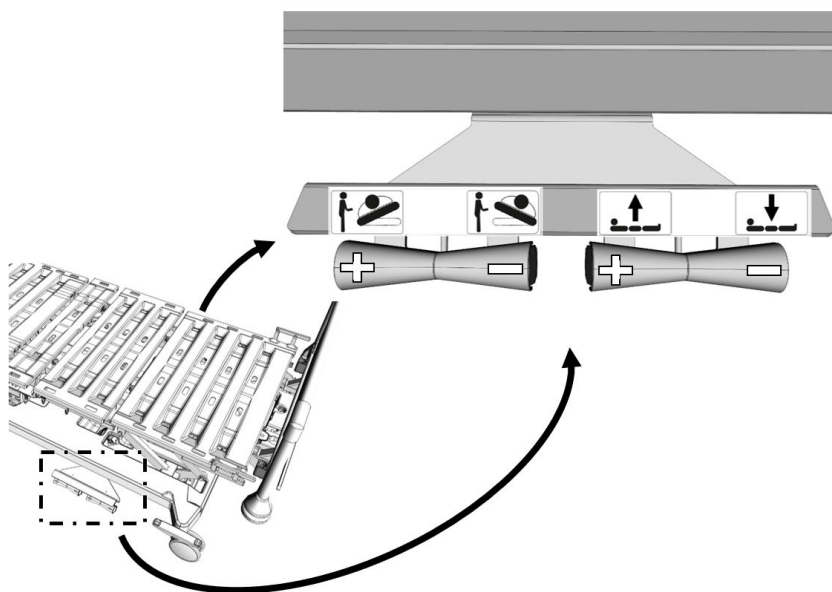


Image10: Position of foot pedal

The toggle switch on the foot pedal allows only one combination to be set at a time, e.g. lateral tilt + mattress base or back rest + mattress base height.

The following functions are possible:

Height adjustment

Button	Explanation
+	Raise mattress base
-	Lower mattress base

Lateral tilting

Button	Explanation
+	Tilting to the right
-	Tilting to the left

Backrest adjustment

Button	Explanation
+	Raising the backrest
-	Lowering the backrest

i Foot pedals are always locked for safety reasons. To unlock these, see chapter [On the foot pedal \(optional\)](#) » [99](#).

6.6.6 Safety sides

The bed is equipped with Protega safety sides to protect the patient from accidentally falling out of bed. Medical staff can lower safety sides by hand.

i Similar to illustration. Identical procedure.



Image11: Protega safety side

6.6.7 Magnetic unlocking key

ATTENTION

Malfunctions

The following applies to electric handsets with an integrated magnetic sensor:
Failure to heed this warning may result in malfunctions!
Strong magnetic fields can impact the locking functions of the electric handset.

- Always keep these handsets at a distance of at least 30 cm from other devices that emit such magnetic fields (e.g. permanent magnets, mobile wireless communication devices with NFC function, Qi chargers, RFID readers).

A magnetic unlocking key is incorporated in the safety side. The position of the magnetic un-



locking key is marked with a corresponding orange sticker . The magnetic unlocking key is necessary to access the medical staff and technician control level on the LCD handset.

Changing between control levels on the LCD handset is done by holding the magnetic sensor [3] on the LCD handset briefly (for about ½ second) against the magnetic unlocking key, see chapter [LCD handset](#) » [22](#).

 Similar to illustration. Identical procedure.

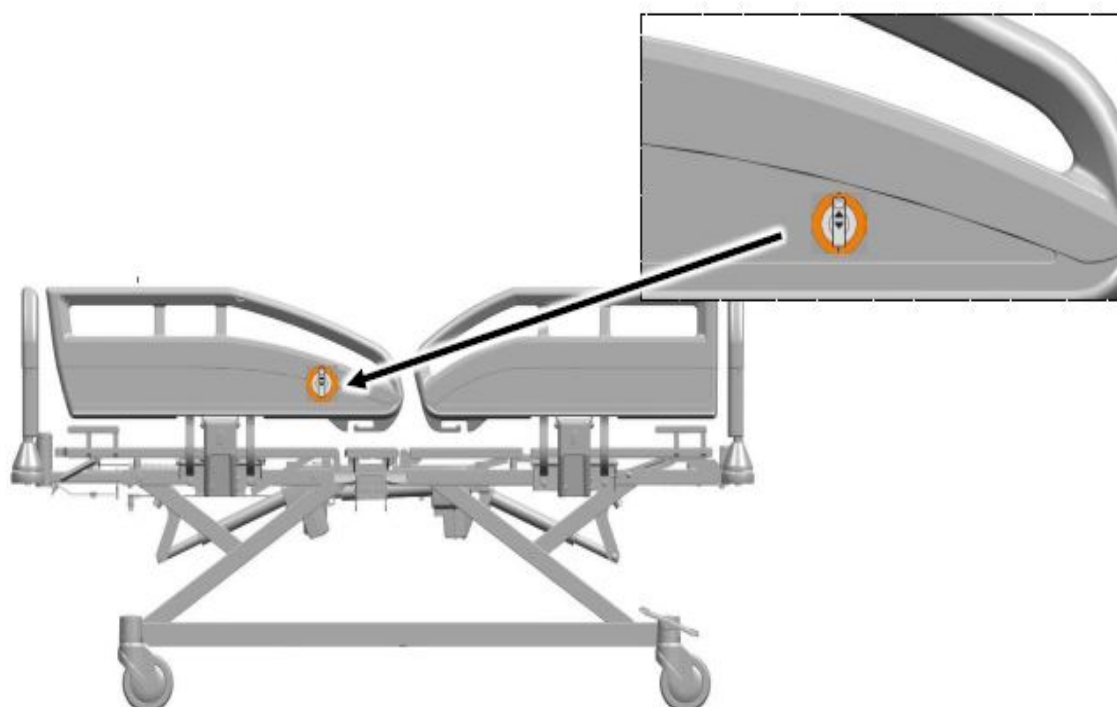


Image12: Position of magnetic locking key with Protega safety side

6.6.8 Linen holder

The foot end of the bed is fitted with a linen holder that can be drawn out to provide a hygienic surface to put bedding on. The control box and optionally the control unit for the patient scales are located in the linen holder.

 Similar to illustration. Identical procedure.

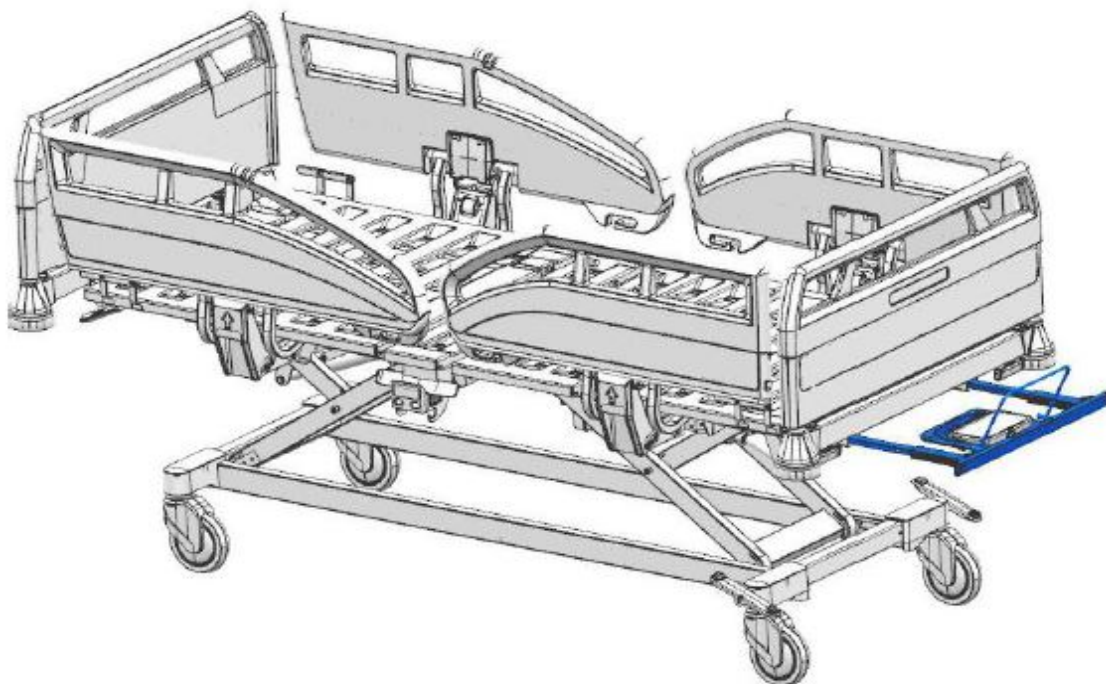


Image13: Linen holder

6.6.8.1 Using the linen holder

ATTENTION

Material damage

Failure to heed the maximum loading capacity of the linen holder (15 kg) will result in material damage.


- Do not sit/lean on the linen holder!
- Do not lay any hard objects on it! Hard objects can unintentionally press the keys of electrical control units (optional) inside the linen holder and lead to malfunctions.
- When removing and re-inserting the control box, pay attention to the cable routing. Ensure that the cable cannot be caught, stretched, crushed or otherwise damaged.

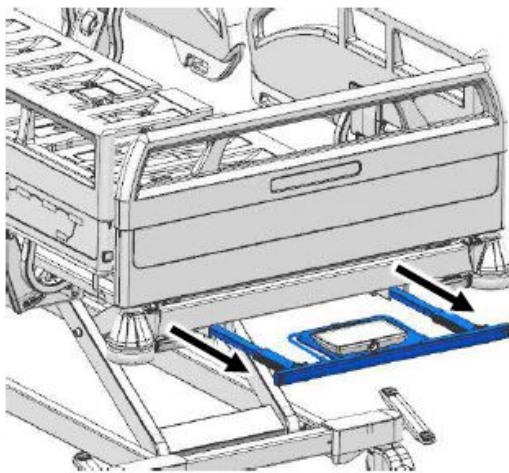
CAUTION

Risk of injury

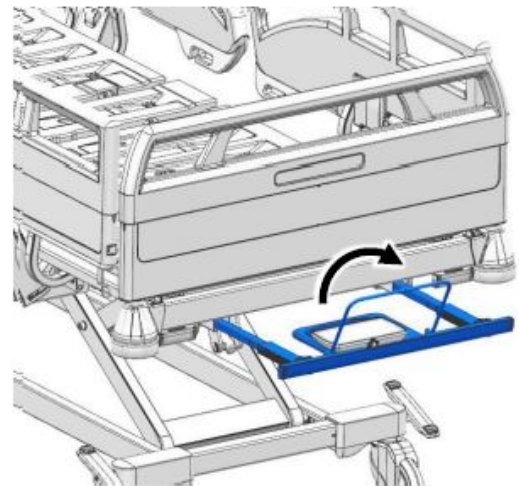
Failure to heed this warning may result in the pulled-out linen holder becoming a tripping hazard!

- Always slide the linen holder back into place immediately after use.

 Similar to illustration. Identical procedure.



- 1 Pull the linen holder out from under the mattress base with a slight jerk.



- 2 A gallery rail is attached to the linen holder. If necessary, raise the gallery rail to an upright position. This helps to hold the bedding in place.

6.6.9 Mains cable holder

The mains cable holder [1] is attached to the mains cable.

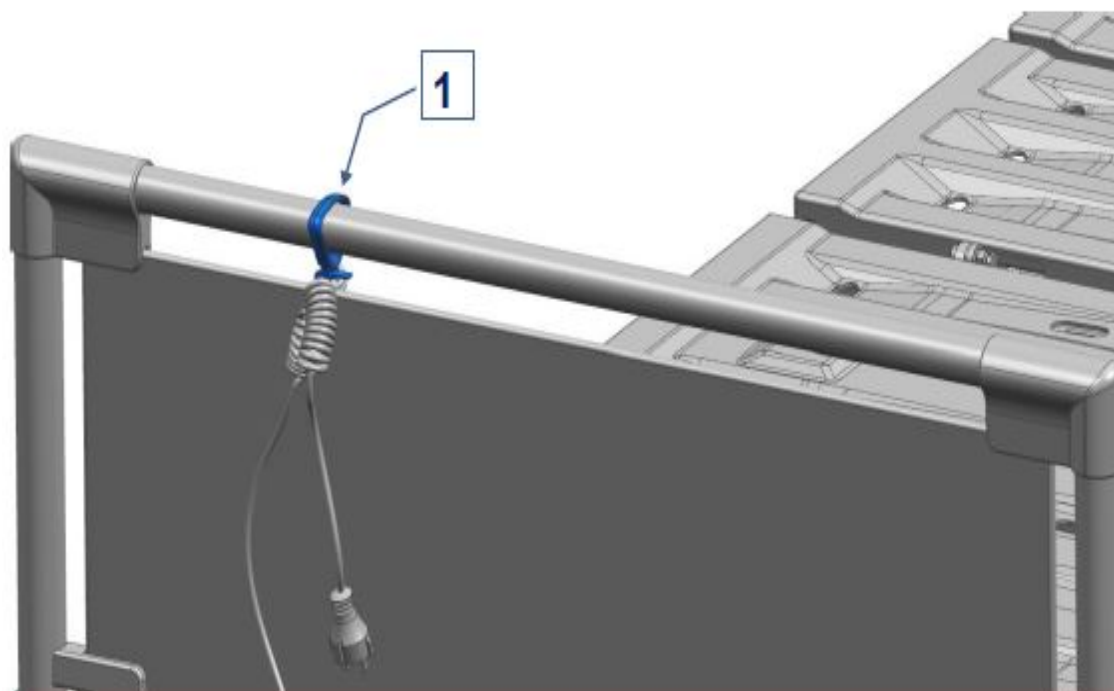


Image14: Mains cable holder attached to the headboard

Hook the mains cable holder [1] onto the headboard before moving the bed to prevent the mains cable from being driven over, crushed or torn off.

6.6.10 Adapter sleeves for patient lifting pole/infusion stand (head end)

On the inside of the headboard, there is an adapter sleeve on each side of the bed for attaching a patient lifting pole or infusion stand.

 Similar to illustration. Identical procedure.

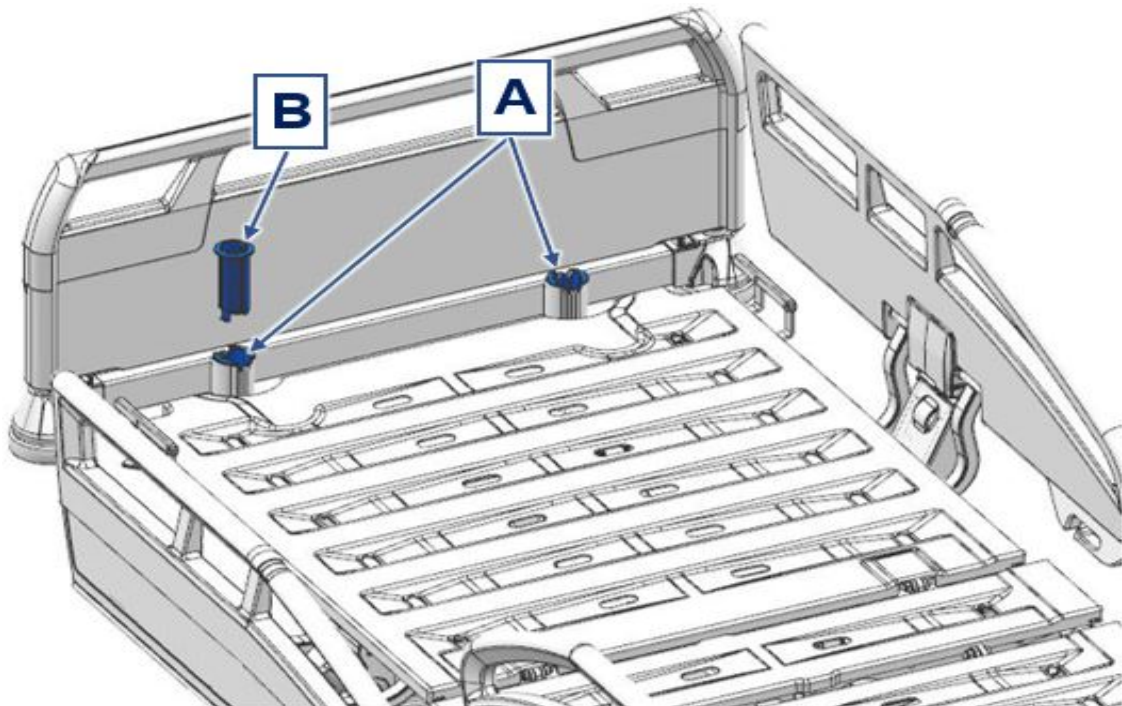


Image15: Position of patient lifting pole adapter sleeves

Reducing adapters [A] (either round or oval, as the customer wishes) are inserted in the sleeves before leaving the factory, to hold a round or oval patient lifting pole.

A second plastic reducing adapter is inserted in one of the reducing adapters before leaving the factory [B]. This can be used if an infusion stand is inserted. This reducing adapter must be removed before inserting the patient lifting pole into the sleeve.

A grab handle is normally attached to the patient lifting pole (see [Available accessories](#) » [192](#)).

6.6.11 Adapter sleeves for infusion stand

Adapter sleeves for an infusion stand are provided at the head end and foot end on the inside of both sides of the bed.

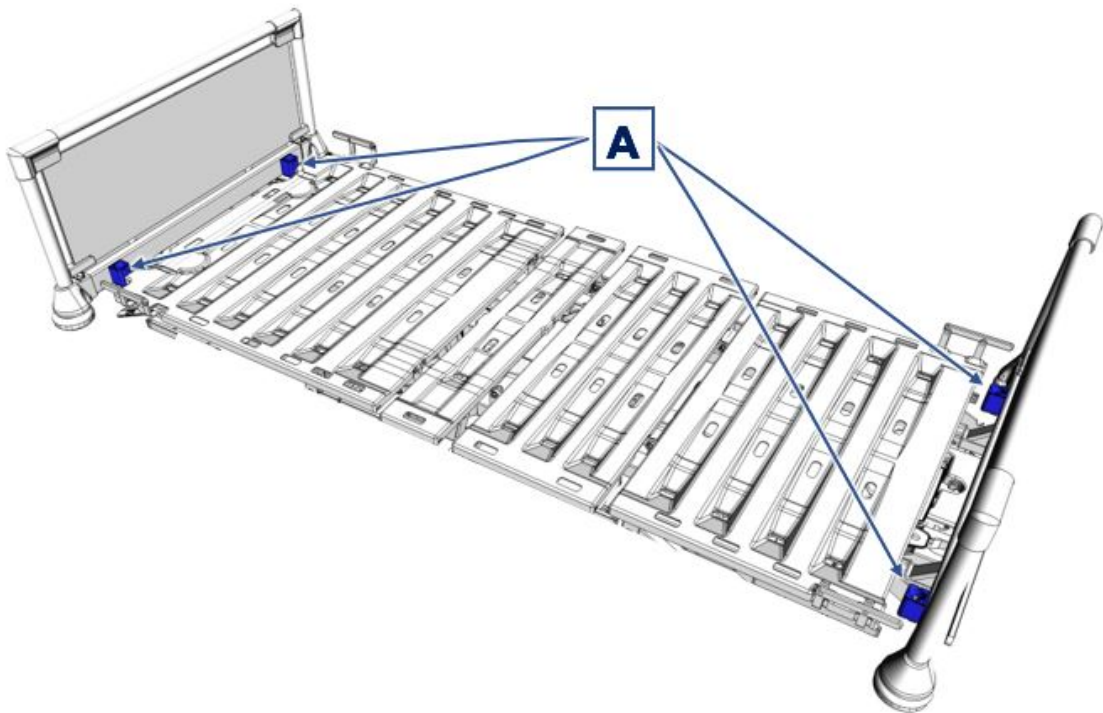


Image16: Position of infusion stand adapter sleeves (at head and foot ends)

6.6.12 Standard sliding rail

The bed is equipped with a standard sliding rail on the long sides and at the head end (foot end optional). Hooks can be attached to the rails and can be moved along the standard sliding rail. The hook can be used for hanging accessories such as urine bottle holders, universal accessory holders, etc. Caution! When the bed is moved, ensure that accessories hanging in the universal holders are not knocked against and damaged as a result.

i The standard sliding rail must not hold a weight of more than 20 kg!

The universal hook must not hold a weight of more than 4 kg!

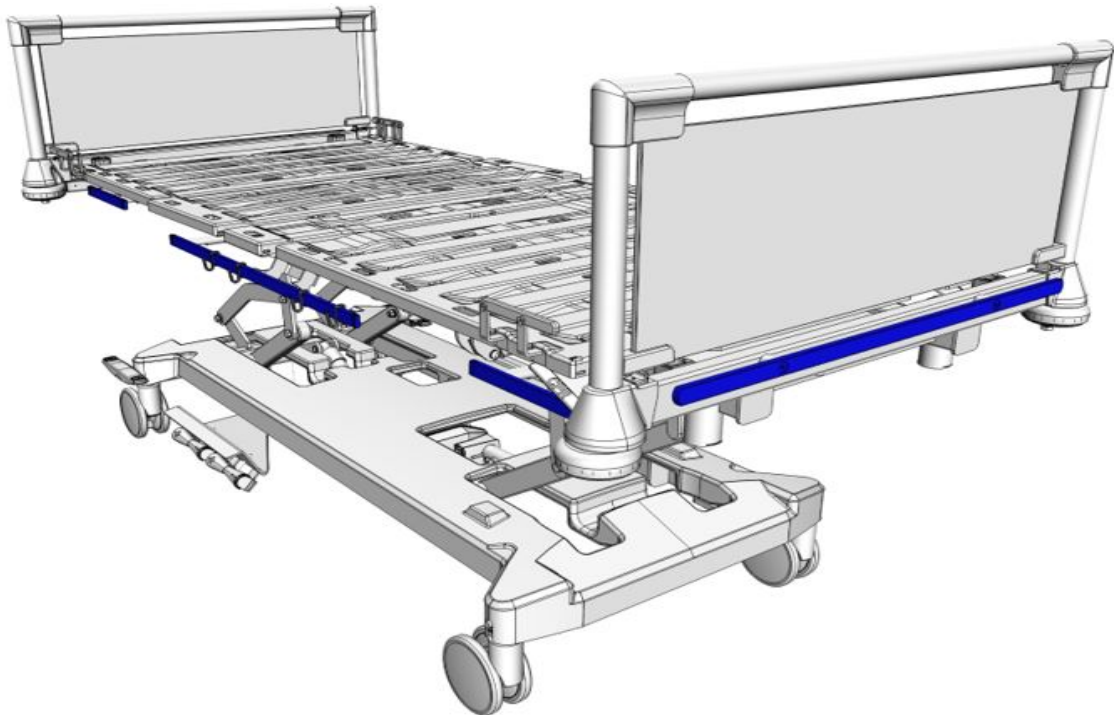


Image17: Standard sliding rail

6.6.13 Attachment points for posey belts

The plastic mattress base is fitted with slots for posey belts (exception: mattress base, 100 cm wide). The arrows indicate slots in the plastic mattress base through which restraint system belts can be threaded.

WARNING

Risk of injury

Failure to heed this warning may result in injuries to the patient.

- Lock all adjustment functions on the LCD handset and on the control panel when using posey belts.

 Similar to illustration. Identical procedure.

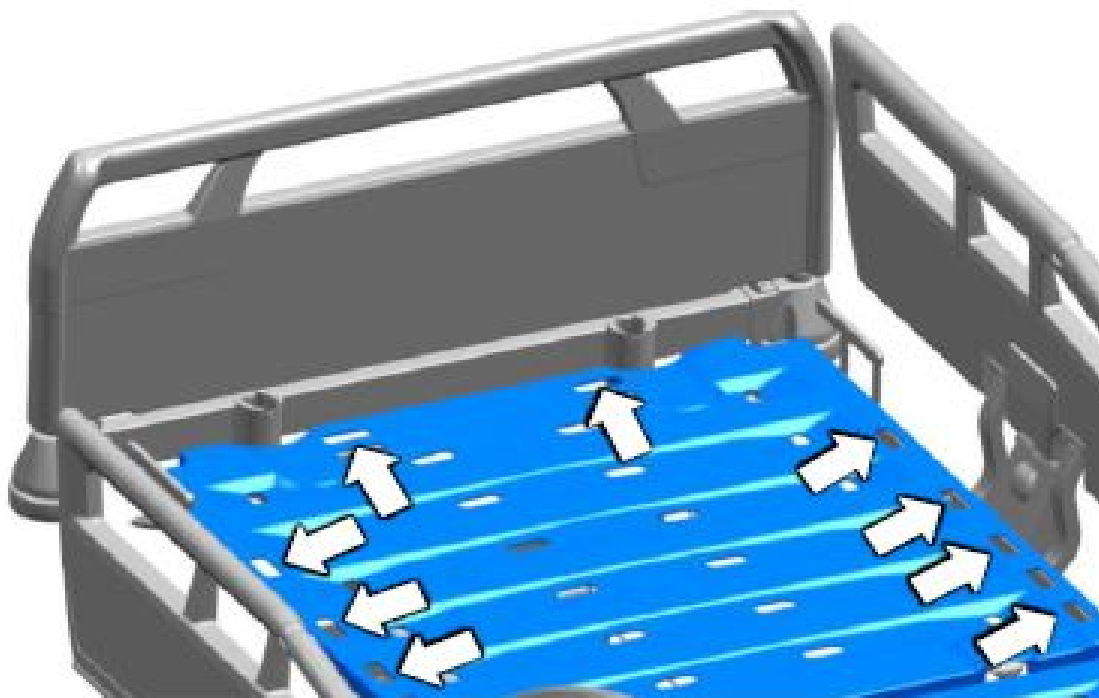


Image18: Slots for posey belts

6.6.14 Li-ion battery

A modern high-capacity lithium ion battery can be used for temporary emergency operation of the electrical drive system. This guarantees that all electric adjustments can be carried out even during a power cut.

Emergency operation

When the bed is occupied by a patient of normal weight (approx. 80 kg), up to 30 full UP/DOWN adjustments can be made if the battery is new and fully charged.

Under emergency conditions, if the battery capacity is depleted, a signal tone will sound and all adjustments will be stopped.

Charging/charge indicator

The batteries are automatically fully charged when the bed has been connected to the mains supply for at least 10 to 12 hours.

It is impossible to overcharge the battery.





During the charging process, the bed can be adjusted using the existing control units.

Lithium ion batteries have a considerably longer lifetime than conventional lead-acid batteries. In normal use, this service life is up to eight years.




Batteries need to be replaced when operation cycles become very short. For safety reasons, at least one more height adjustment (up + down) should always be possible. Otherwise, the batteries must be replaced. In this case, contact Stiegemeyer's service centre. We will replace rechargeable batteries and dispose of the old batteries correctly.

A multi-stage charge indicator on the LCD handset/control box display keeps you informed about the current charge status:

Bed is in battery operation (Li-ion battery):

Button	Explanation
	Battery fully charged
	Battery approx. 2/3 charged
	Battery approx. 1/3 charged - connect bed to power supply as soon as possible
	Battery empty - connect bed to power supply as soon as possible

Bed connected to power supply:

Control box indication	Indication on the display	Explanation
	No indication	The battery is full, or a fully depleted battery is preparing for charging.
		Yellow LED on, battery charging

6.7 Technical data

6.7.1 Type plate

The type plate is at the head end of the mattress base (inner side) and contains the following information:

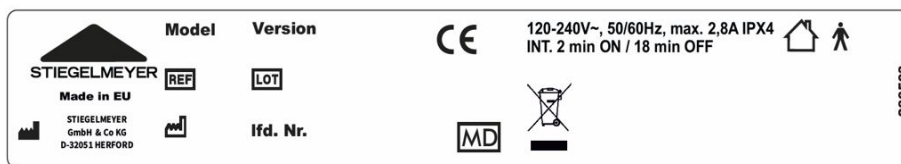















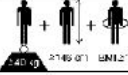


Image19: Type plate(example)

Symbol	Explanation	Symbol	Explanation
Model	Name of product	Version	Variant (if applicable); e.g. brevo, lino, etc.
	Item number		Order number
	Date of manufacture (week/year)	Lf.-Nr./seq. no.	Bed identification from order number: Individual bed no./Total no. of beds
	Only for use in enclosed spaces. Do not use outdoors!		Article is a medical device
	Device with type B applied part in accordance with EN 60601-1 (special protection against electric shock)		Product is in accordance with European WEEE Directive 2012/19/EU (avoidance of waste electrical and electronic equipment) Do not dispose of electrical parts in household waste
PID bar code The additional PID bar code on the bed includes a number that clearly identifies each particular bed.			

6.7.2 Other labelling on the product

Symbol	Explanation	Symbol	Explanation
	Caution! Follow the operating instructions		Safe working load = max. patient weight + accessories
	Only use mattresses that are approved by the manufacturer.		Max. patient weight
	Lock the hand control if the patient could be at risk due to inadvertent electric adjustments		Maximum total weight of bed = dead weight + safe working load
	Suitable for machine cleaning (optional extra)		Minimum patient dimensions/weight: Height: 146 cm, weight: 40 kg; body mass index "BMI": 17

6.7.3 Materials used

The bed is made predominantly of steel sections coated with a polyester powder finish or a zinc or chromium metal finish.


Depending on the bed model, the mattress base is made of high-quality, PVC-free plastics, or HPL laminated panels.

The chassis is made of steel sections.

The headboard and footboard panels consist of HPL laminated panels.

All surfaces that can be touched during normal use have been tested for bio-compatibility and are harmless to humans when in contact with the skin.

6.7.4 Dimensions

 All indications of dimensions and weights in this manual are approximate.

Description	Mattress base size (width x length)	
	90x210 (cm)	90x200 (cm)
Overall dimensions	103.8x227	103.8x219
Min. mattress dimensions * (LxWXH)	90x 210x12	90x200x12
Bed extension	20	28
Mattress base division	83-15-33-53	83-15-33-53
Backrest length compensation	10	10
Ground clearance of chassis	3.5 to 7	3.5 to 7
Max. mattress dimensions (LxWxH) with Protega safety sides	90x210x19	90x200x19
<p>* More information about mattress:</p> <ul style="list-style-type: none"> - Density: min. 40 kg/m³ - Compression hardness: min 4.5 KPa (in edge area) 		

6.7.5 Weight

Description	90x200 (cm)	90x210 (cm)
Safe working load	260 kg	
Patient weight, maximum *	220-250 kg *	
Empty bed weight, maximum	220 kg	
Total bed weight, maximum	480 kg	
*: See also Information on loading capacity of bed » 63		

6.7.6 Adjustment ranges

Description	90x200 (cm)	90x210 (cm)
Tilting to Trendelenburg position	16°	

Description	90x200 (cm)	90x210 (cm)
Tilting to reverse-Trendelenburg position	18°	
Lateral tilting	25°	
Mattress base height	48–84 cm	
Mattress base height with castor type: Steinco (double castor, low)	45–81 cm	
Backrest angle	70°	
Thigh rest angle	40°	
Fowler position angle	16°	

6.7.7 Operating noise

The operating noise of an electrically adjustable bed is not more than 47 dB (A).

6.7.8 Ambient conditions

The following ambient conditions must be maintained:

Ambient conditions for storage	Minimum	Maximum
Storage temperature	- 10°C	+ 50°C
Relative humidity	20%	80 % (non-condensing)
Air pressure	700 hPa	1060 hPa (at altitude of ≤ 3000 m)

Ambient operating conditions	Minimum	Maximum
Ambient temperature	+ 5°C	+ 40°C
Relative humidity	20%	80 % (non-condensing)
Air pressure	700 hPa	1060 hPa (at altitude of ≤ 3000 m)

6.7.9 Medical device classification

This bed fulfils all the requirements of the Medical Device REGULATION (EU) 2017/745 (MDR) and is considered a Class I medical device in accordance with the classification rules.

UMDNS code: 10-347; Bed (electrically adjustable)

CDN-Code:Z12030702: MEDICAL EQUIPMENT AND RELATED ACCESSORIES AND MATERIALS: INTENSIVE CARE BEDS

For use in the following application groups according to IEC 60601-2-52:

Group	Description
1	Intensive care in a hospital in which 24-hour medical supervision and constant monitoring are necessary. The provision of a life support system/device for use in medical procedures is very important for the support of the patient's vital functions.
2	Acute care in a hospital or in another medical facility in which medical supervision and monitoring are required. A medical electrical (ME) device used in medical procedures is often used to provide support in maintaining or improving the condition of the patient.
5	Outpatient care facility, which is provided in a hospital or other medical establishment under medical supervision. A medical electric device is provided for the needs of persons with an illness, injury or handicap for the purpose of treatment, diagnosis or monitoring.

6.7.10 Electrical data

Mains cable: (coiled, anti-kink, with strain relief)	
Type	H05 BQ-F 3 x 1 mm 2 (EPR quality)

Control panel	
Type	LINAK IHS Openbus™
Operating voltage	DC 24 V
Protection category	IP X6, suitable for automatic washing systems

Control box	
Type	LINAK ACO Openbus™
Operating voltage	DC 24 V

Control box	
Protection category	IP X6, suitable for automatic washing systems

Control unit	
Type	LINAK CO71xxx Openbus™
Input voltage	AC 100 – 240V -15% /+10 %, 50/60 Hz
Current input	Max. 4.5 A
Standby current consumption	< 0.5 W
Power pack	Wide range switch mode power supply; high-efficiency power management for optimum speed under every load; compact, lightweight, energy-efficient, for global use
Safety systems	Thermal protection, short-circuit and electronic overload protection (individually for each drive); hot-plugging protection
Output voltage	DC 24 V
Output current	Max. 10 A (electronic monitoring and cut-out)
Duty cycle	Intermittent duty: 2 min ON / 18 min OFF
Classification	Protection class I, IEC 60601-1-compliant type B device with internal power supply (if fitted with batteries), not for use in explosive atmospheres
Protection category	IP X6, suitable for automatic washing systems

LCD handset (optional equipment)	
Type	SHS003, not suitable for automatic washing systems SHS004, suitable for automatic washing systems
Operating voltage	DC 24 V
Protection category	SHS003: IP X6, not suitable for automatic washing systems SHS004: IP X6, suitable for automatic washing systems

Li-ion battery, external	
Type	LINAK BA21xxx

Li-ion battery, external	
Type	Lithium ion technology: Nickel manganese cobalt oxide (NMC); environmentally-friendly without heavy metals; integrated electronic charger unit with balancer and extended battery monitoring
Weight	0.7 kg
Capacity	2.25 Ah/ 58.28 Wh
Charging time	Approx. 10 hours
Voltage	DC 25.9 V
Protection category	IP X6, suitable for automatic washing systems
Classification	IEC 60601-1, 3rd Ed.; IEC 62133, 2nd Ed.; UL2054; UN38.3
Classification for transport	UN3480: Shipping name: "LITHIUM ION BATTERIES"
Lifespan	Up to 8 years under optimum conditions

Junction Box	
Type	PJ2
Operating voltage	DC 24 V
Protection category	IP X6, suitable for automatic washing systems

drive M1: (Electrical motor) thigh rest	
Type	LINAK LA40, suitable for automatic washing systems
Force/installation dimension/lift	4000 N / 272 mm / 70 mm
End position cut-out	Micro-switch, with analogue coding
Input voltage	DC 24 V
Duty cycle	Intermittent duty: 2 min ON / 18 min OFF
Protection category	IP X6, suitable for automatic washing systems

Drive M2+M4: (electric) lift motors	
Type	LINAK LA 40 HP
Path feedback	2 Hall sensors; analogue coding

Drive M2+M4: (electric) lift motors	
Force/installation dimension/lift	8000 N/ 350 mm/ 140 mm
End position cut-out	Micro-switch, with analogue coding
Input voltage	DC 24 V
Duty cycle	Intermittent duty: 2 min ON / 18 min OFF
Protection category	IP X6, suitable for automatic washing systems

drive M3: (electric) lateral tilting motor	
Type	LINAK LA 40
Force/installation dimension/lift	4000 N / 345 mm / 140 mm
End position cut-out	Micro-switch, with analogue coding
Input voltage	DC 24 V
Duty cycle	Intermittent duty: 2 min ON / 18 min OFF
Protection category	IP X6, suitable for automatic washing systems

Drive M6: (electric) backrest motor	
Type	LINAK LA 40
Force/installation dimension/lift	4000 N / 433 mm / 205 mm
End position cut-out	Micro-switch, with analogue coding
Input voltage	DC 24 V
Duty cycle	Intermittent duty: 2 min ON / 18 min OFF
Protection category	IP X6, suitable for automatic washing systems

6.8 Electrical connection diagram

This bed can be delivered with standard equipment and also with optional equipment. In the following chapters you will find the connection diagrams of both equipment variants.

The following figure will help you to localise the electrical components on the bed.

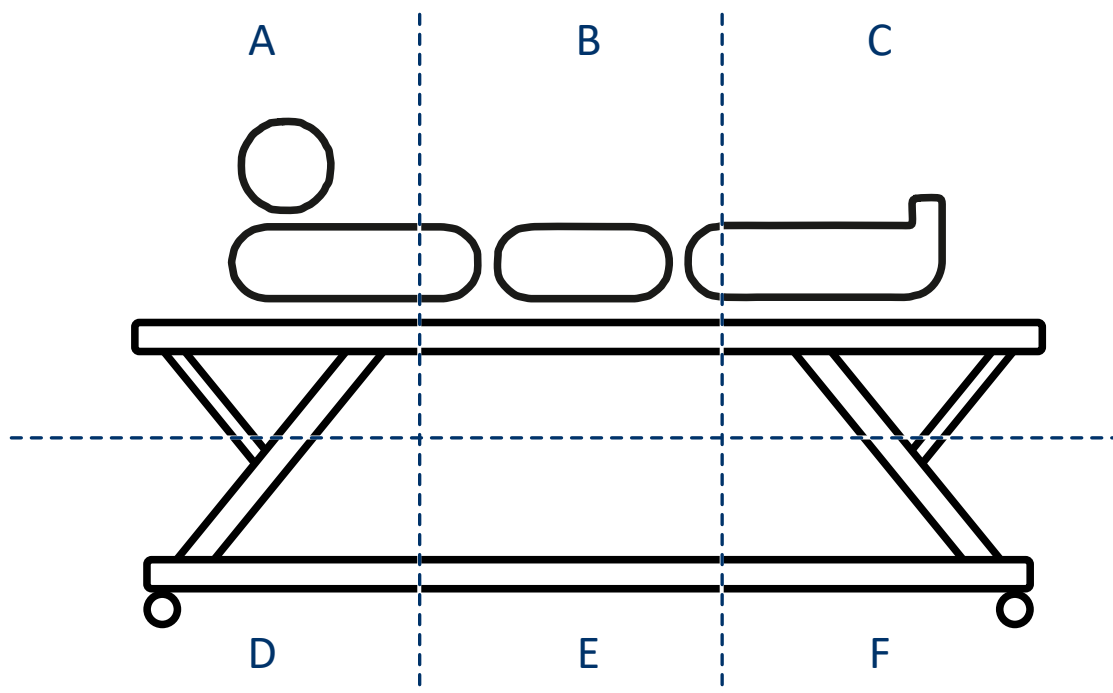


Image20: Location of the electrical components

A: Head end, high up

B: Centre of bed, high up

C: Foot end, high up

D: Head end, low down

E: Centre of bed, low down

F: Foot end, low down

6.8.1 Standard features

i The letters in the following tables refer to the previous picture “Location of the electrical components”. This indicates where the component is located in the bed.

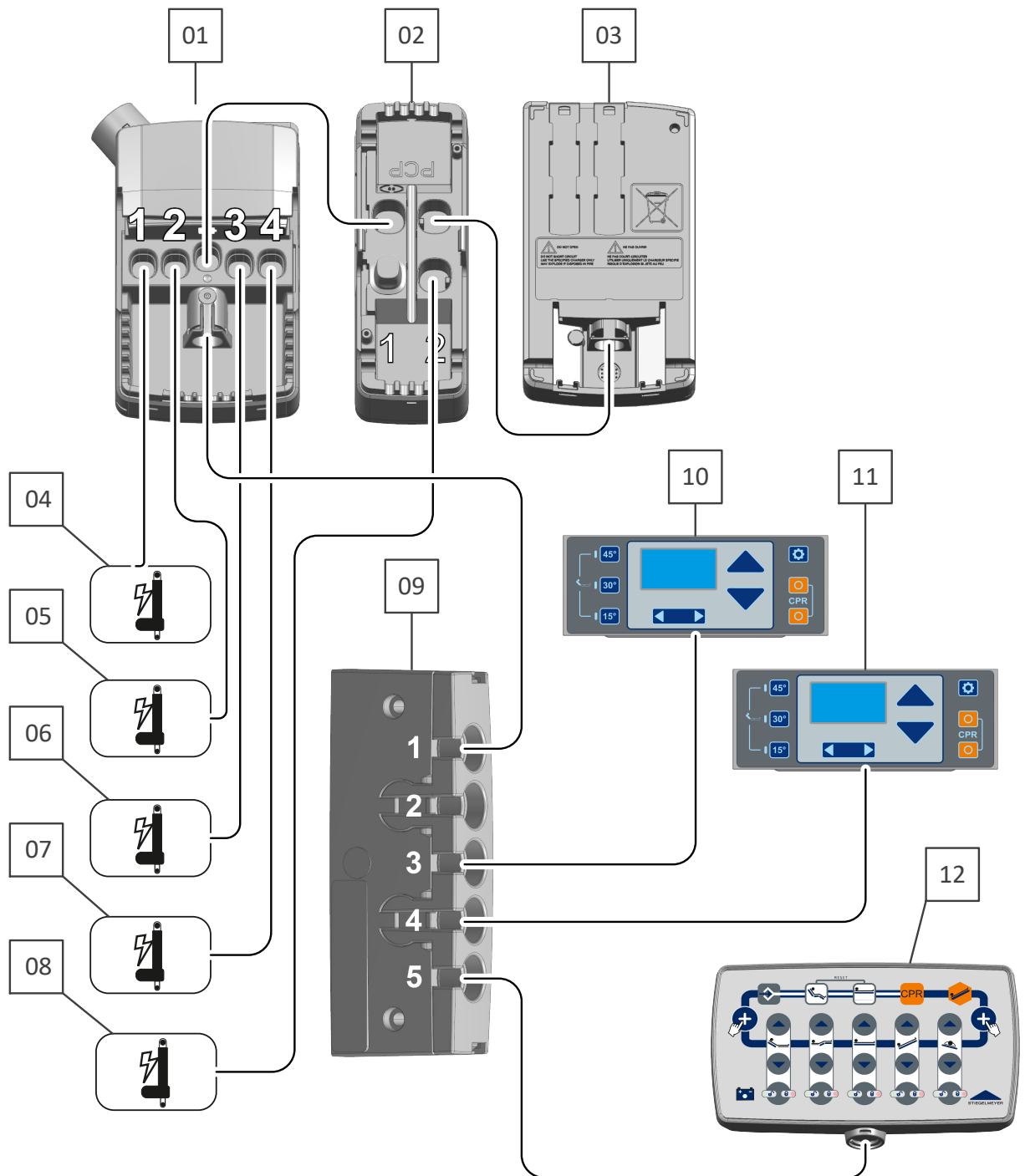


Image21: Standard component features

1: Control unit A

2: Distributor box PJ2 → A

3: Li-ion battery → A

4: Thigh rest motor → B

5: Height adjustment motor (at head end) E

6: Lateral tilting motor B

7: Height adjustment motor (at foot end) E

8: Backrest motor → B

9: Distributor box MJB5 → B

10 and 11: Control panel (outside)

12: Control box C

6.8.2 Optional features

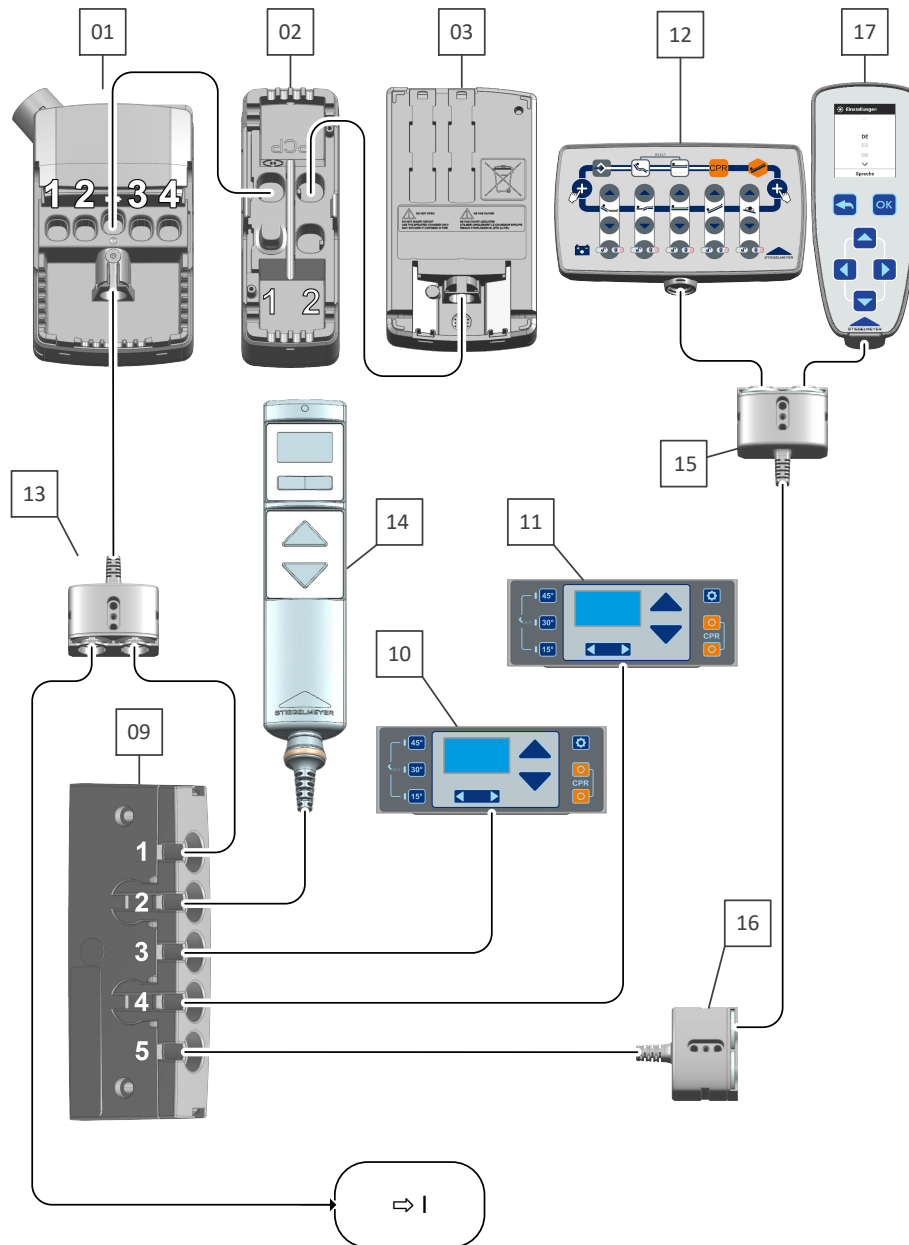


Image22: Components - standard + optional features - 1


13: Distributor box PJ2 → A

14: LCD handset

15: Distributor box MJB2 → C

16: Distributor box MJB2 → B

17: Control unit - patient scales →
C

 Connection → I, see figure “Components - standard + optional features - 2”

Connection → II, see figure “Components - standard + optional features - 3”

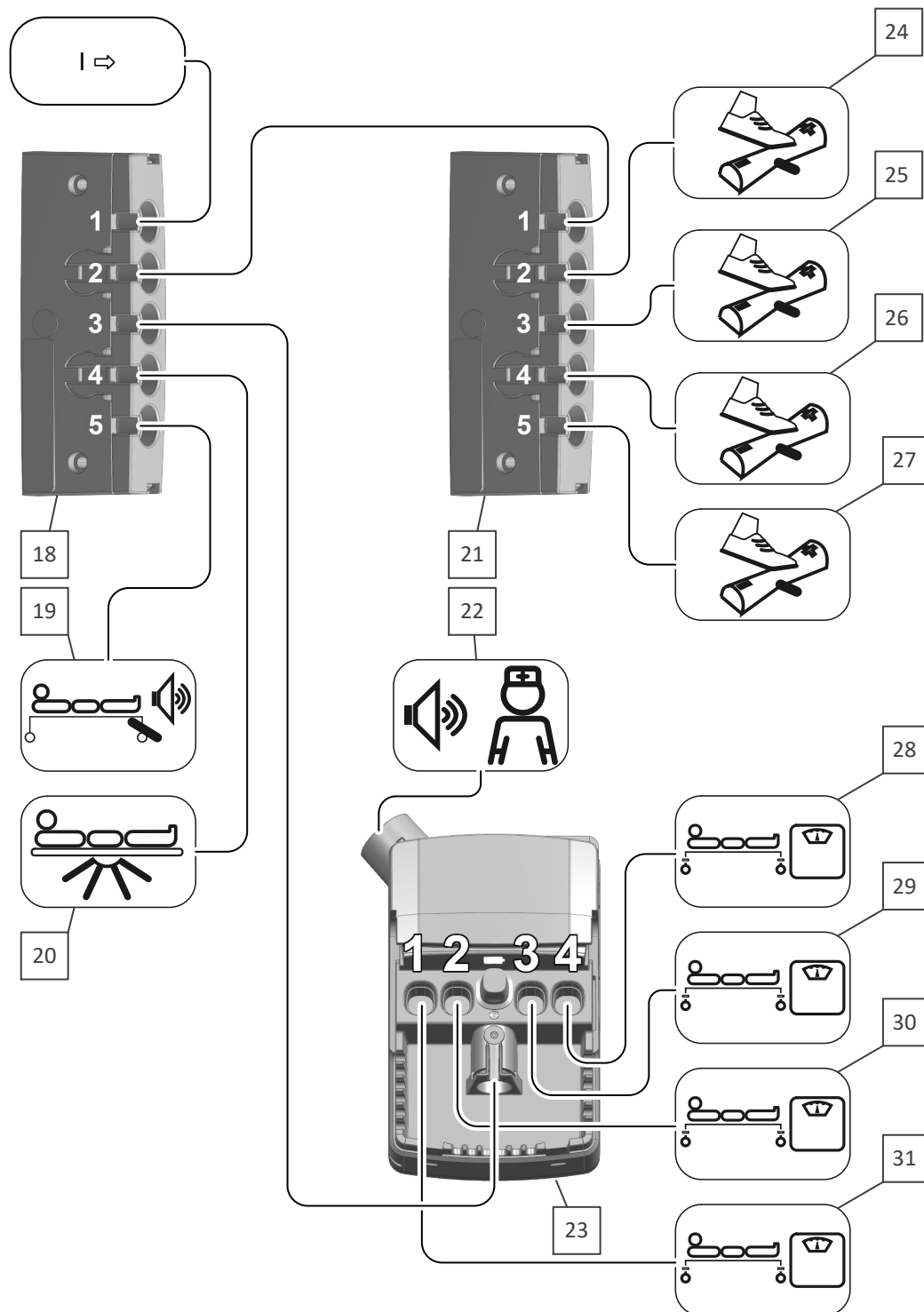


Image23: Components - standard + optional features - 2

18: Distributor box MJB5 → E

19: Brake signal button

20: Under bed light/blue box	21: Distributor box MJB5 → E
22: Call system → D (A detailed connection diagram of the call system can be found in the supplementary instruction manual)	23: QLC12 → D
24 - 27: Connections - foot pedal → E	28 - 31: Connections - weighing cells → D

7 Putting into service

No electrical measurements are necessary prior to putting this bed into service for the first time, since the bed was tested by the manufacturer for electrical safety and functionality and left our factory in perfect condition.

Remove all transport securing devices (from the pedals) and packaging film (from the bed frame). Clean and disinfect the bed.

Additional information on cleaning and disinfection is given in chapter [Cleaning and disinfection](#) » [141](#).

Use only authorised accessories (e.g. mattresses), to minimise endangering patients through entrapment or falling out of bed.

When putting into service for the first time, carry out all measures described in the chapter [New occupancy after a change of patient](#) » [63](#).

If equipped with a battery: When using the bed for the first time, fully charge the built-in batteries to ensure that they have their full capacity. To do so, connect the bed to the mains supply for at least 10 hours. During this charging time, you can already use the electrical adjustment functions on the mains supply without restriction.

7.1 Safety information for putting into service

This hospital bed is designed for multiple re-use. Ensure that the essential conditions specified in the following chapters are met:

- [New occupancy after a change of patient](#) » [63](#)
- [Cleaning and disinfection](#) » [141](#)
- [Maintenance](#) » [151](#) in particular the section entitled ([Periodic inspection](#) » [157](#))

7.2 Safety information concerning the place of use

CAUTION

Tipping hazard

Failure to heed this warning may result in a risk of injury and damage to property if the bed is set up on a surface with more than a 5° incline. This can lead to the bed tipping up when an additional load is exerted on one side of the bed, such as when a person sits down on it.

- Place the bed on a level, horizontal surface only.
- Observe the special safety information on transporting the bed and on moving and immobilising the bed; see [Safety information on moving, braking and immobilising the bed](#) » 76.
- Before using the bed on parquet flooring, check whether the castors will leave stains on the parquet varnish. The manufacturer accepts no liability for such wear. The bed can be used on tiles, carpet, linoleum or laminate flooring without causing any damage.
- A properly installed and earthed mains socket must be available close to the bed, at the head end.
- Place the bed in a position where it is easy to unplug the mains cable from the socket.
- The mains voltage from the socket must be the same as the rating shown on the type plate on the bed.
- If other equipment (e.g. compressors for positioning systems, etc.) is attached, ensure that all items of equipment are securely fixed and function properly. Pay particular attention here to the safe routing of all loose connector cables, tubing, etc.
- If you have any queries or concerns, consult the manufacturer of the equipment or Stiegelmeier.

7.3 Safety information for electric hospital beds

- When the bed is connected to the mains electricity supply, it must always be connected to the hospital's potential equalisation system when intravascular and intracardiac applications are involved.
- When this bed is connected to the mains electricity supply, it must only be used in medical rooms which meet the electrical requirements of the standard VDE 0100 Part 710.

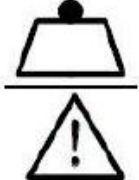

- Position the bed so as to allow easy access to the mains plug at all times so that the bed can be disconnected from the mains, if necessary.
- This hospital bed must not be used in explosive environments caused, for example, by cleaning agents or anaesthetics.
- This hospital bed must not be used in combination with high frequency surgical equipment.
- For use in other countries outside Germany or the EU, please note any special national requirements that may differ.

8 Bed reprocessing/bed adaptation

8.1 New occupancy after a change of patient

8.1.1 Information on loading capacity of bed

The safe working load specified for a bed is always calculated from the weight of the patient plus the weight of any accessories attached. The permissible weight of the patient depends on the total weight of the accessories attached at the same time (e.g. respirators, ventilators, infusions).

	Symbol for safe working load
	Symbol for permissible patient weight

The information applicable for your bed is given on a sticker with the above symbols which is located on the chassis of the bed.

Bed model	Safe working load	Example: with weight of accessories	→ = Permissible weight of patient
Sicuro tera	260 kg	10 kg	250 kg
		40 kg	220 kg

8.1.2 Requirements

Before putting the bed into service or the bed is occupied by a new patient, the user must check that:

- The bed has been cleaned and disinfected

- The castor brakes are applied
- No obstacles such as bedside cabinets, supply rails or chairs will impede bed adjustments
- All adjustments work correctly and have been properly tested
- To carry out the visual inspection and functional checks, use the checklist "Inspection by the user" [Inspection by the user](#) » [203](#)

8.1.2.1 Electric beds

A hospital bed incorporating electric displacement drives can only be taken into service if the following conditions are met:

- The mains voltage from the socket must be the same as the rating shown on the type-plate on the bed
- The mains cable is connected and routed in such a way that it cannot be damaged
- The mains cable, drive cables and LCD handset cable cannot be damaged by moving parts of the bed
- If the bed is equipped with rechargeable batteries, it is constantly connected to the mains supply. This is the only way to ensure that the batteries are fully charged and are available in case of an emergency

8.2 Extending/shortening the mattress base

Please refer to the additional accessory manual supplied with the bed extension.

8.3 Inserting the mattress

Place a suitable mattress on top of the mattress base. Please comply with the permissible dimensions and characteristics of the mattress (for mattress dimensions, see chapter [Technical data](#) » [44](#)).

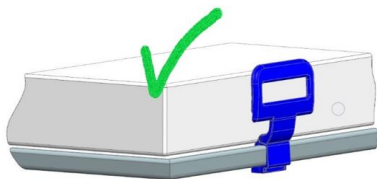
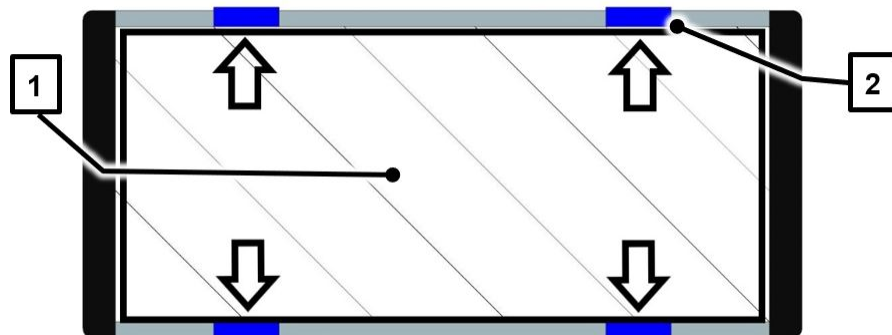
WARNING

Risk of injury

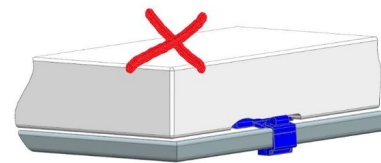
Failure to heed this warning may risk injury to patients from entrapment or suffocation between the displaced mattress and the raised safety sides!

- Only use mattresses with the specified dimensions and characteristics that are approved by the manufacturer for use with this bed.
- Always lay the mattress [1] on the mattress base between the four lateral mattress retain-er bars [2]. This prevents the mattress from moving outwards at the sides of the bed.
- Please also note any other possible position markings on the mattress (such as “Oben/Top”; “Kopf/Head”).
- Always place the mattress onto the mattress base in the way described below.


Top view (shown schematically): Mattress base with properly inserted mattress



Detail (shown schematically): **CORRECT**: Mat-tress lies within the mattress retainer bars



Detail (shown schematically): **INCORRECT**: Mattress lies outside/above the mattress retain-er bars

 Mattress retainer bars are supplied as fixed-position or fold down bars, depend- ing on the features of the bed.

8.4 Insert/remove patient lifting pole

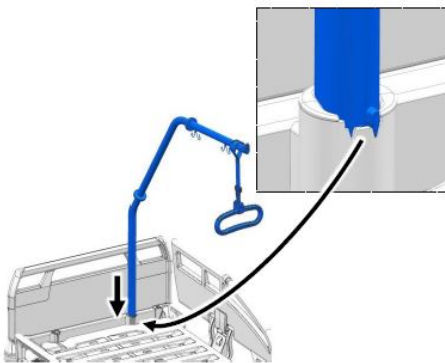
CAUTION

Health risks and material damage

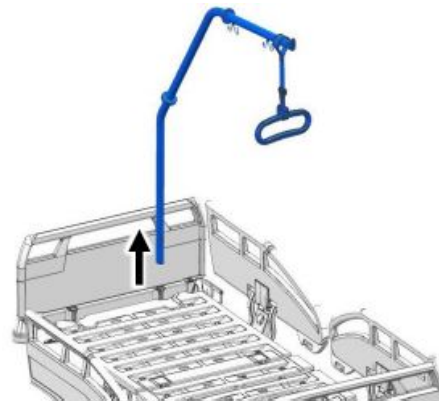
Failure to heed this warning may result in health risks and damage to property!

- The maximum loading capacity at the front end of the patient lifting pole is 75 kg.
- The patient lifting pole is not suitable for rehabilitation exercises.
- Pay attention to door clearances when moving beds with patient lifting poles or infusion stands attached.
- To prevent the bed from tipping over, the patient lifting pole must not be used if the bed is laterally tilted.

 Similar to illustration. Identical procedure.



- 1 Insert the long, straight end of the patient lifting pole into a sleeve without the infusion stand reducing adapter. The metal pins on the patient lifting pole must slot into the adapter sleeve recesses and engage.



- 2 To remove the patient lifting pole, lift it out of the adapter sleeve from above.

8.5 Attaching the grab handle

CAUTION

Risk of injury

Failure to heed this warning may result in physical injuries!

- Check the grab handle and belt regularly for damage.
- Replace damaged grab handles or straps immediately.
- We recommend that the grab handle is replaced at least every 5 years.
- Please also refer to the detailed instruction manual supplied with every grab handle.

A grab handle can be attached to the patient lifting pole. The patient can use this grab handle to sit up and readjust his or her position.

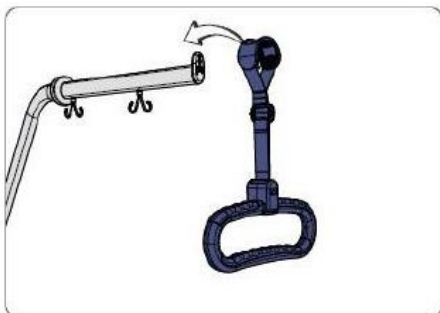
The grab handle can be hooked over the trapeze bars or patient lifting pole when not in use.

CAUTION

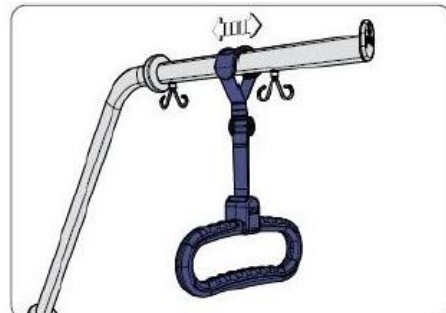
Risk of injury

Failure to heed this warning may result in physical injuries!

- Attach the grab handle between the limit points on the lifting pole to avoid it falling off accidentally.

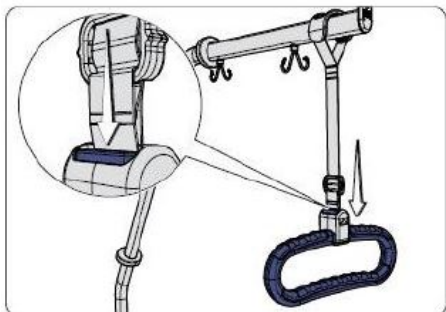


- 1 Attach the grab handle with the strap to the patient lifting pole.

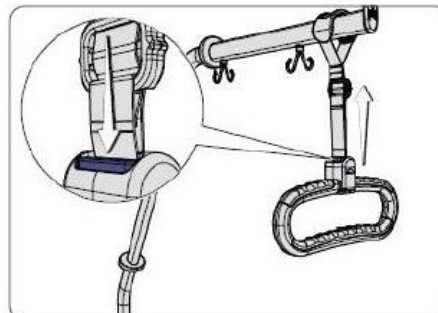


- 2 The integrated anti-slip fitting must be secured properly between the two limit points of the patient lifting pole.

8.5.1 Adjusting the height



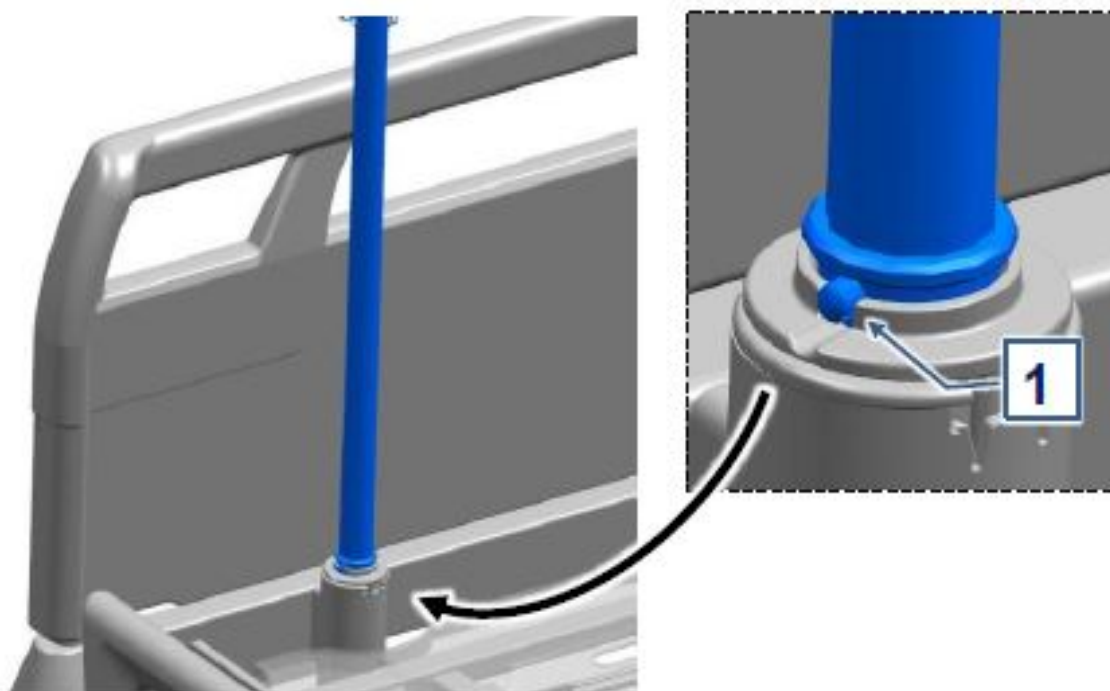
- 1 To adjust the grab handle so that it hangs lower, press the button and continue to press it while you pull the handle downwards.




- 2 To adjust the grab handle so that it hangs higher up, keep the button pressed while you move the strap slider up.

8.6 Attaching an Infusion Stand

The infusion stand can be placed in the adapter sleeves provided at the head and foot end, with the reducing adapter inserted in the sleeve.



-  Infusion stands are fitted in the factory with an anti-twist device (pin) [1] . When using it, ensure that the pin engages with the recesses provided.

WARNING

Danger of collision and injury!

Failure to heed this warning may result in physical injury and damage to property!

- Adjust (reduce/enlarge) telescopic infusion stands so that they cannot cause injury or damage to property when used on beds.

8.7 Attaching and using supply rails (optional)

CAUTION

Risk of crushing

Failure to heed this warning may result in physical injuries!

- Ensure that objects hanging from supply rails do not present a hazard to persons (e.g. through trapping fingers, or infusion or drainage bottles) during electric adjustments to the bed.
- If necessary, lock the particular electric adjustments.

ATTENTION


Material damage

Failure to heed this warning may result in damage to property!

- Ensure that objects attached to or hanging from the supply rails do not cause damage (e.g. to door frames) when the bed is moved.
- Do not use any long infusion stands or similar attachments as handles for pushing the bed.
- Do not apply (perpendicular) loads of more than 20 kg to supply rails. The maximum overhang is 25 cm.

- Do not attach (vertically-acting) loads in a universal holder of more than 15 kg to supply rails along the two sides of the bed.
- Do not attach any long infusion poles or other projecting objects to supply rails.
- Avoid applying any lateral loads to the supply rails.

The parking position for the LCD handset is provided with holders for supply rails. These rails are inserted in the holders. Two holders are attached at the supply rail. Accessories such as urine bottle holders [2] or universal holders [3] can be attached to the holders.

 Similar to illustration. Identical procedure.

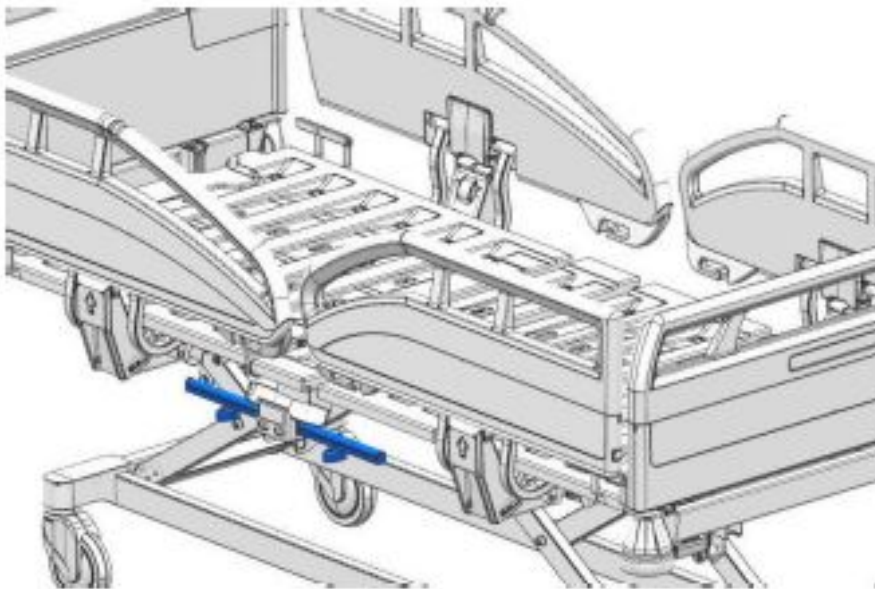


Image24: Supply rail

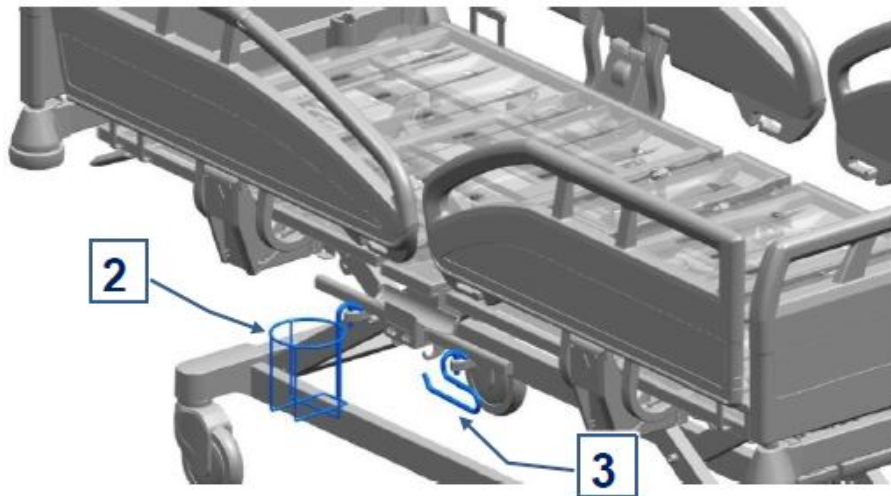


Image25: Universal hook

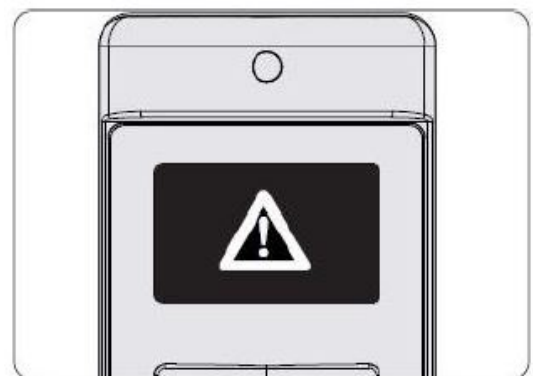
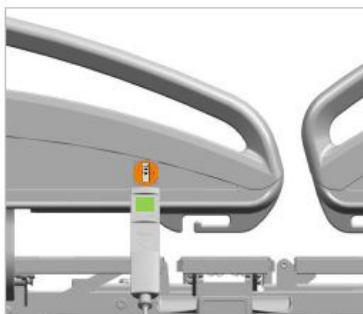
8.8 Restoring factory settings

A reset to factory settings must only be carried out by technicians or qualified medical staff who have been trained by the operator to do so.

As a result of this procedure, all individually programmed special positions such as the reverse-Trendelenburg position, normal position, washing position and any mattress base height limits will be reset to the factory default settings.

A reset to factory settings can be carried out on the LCD handset, on the (outside) control panel or on the control box, depending on the equipment available on the bed.

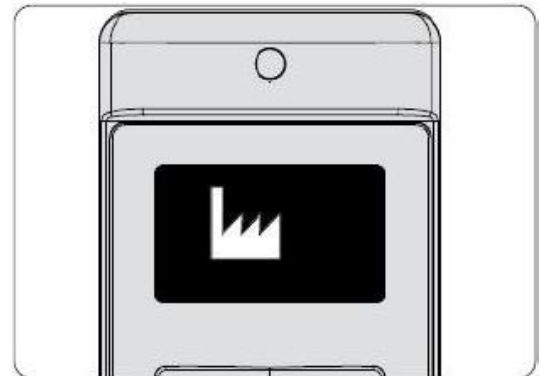
8.8.1 On the LCD handset



- 1 Press the UP and DOWN buttons simultaneously, and keep them pressed while you hold the top end of the handset briefly (for about ½ second) against the orange magnetic unlocking key.

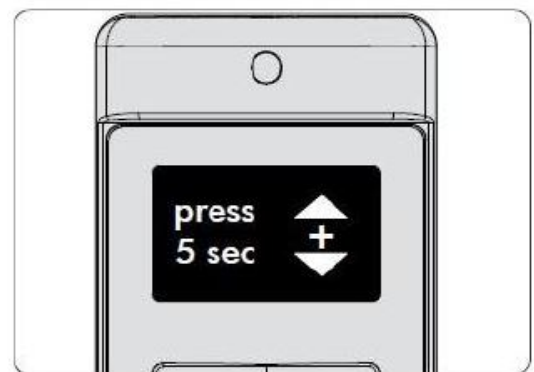
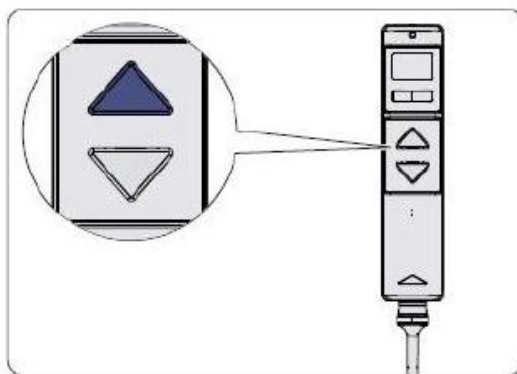


- 2 Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.



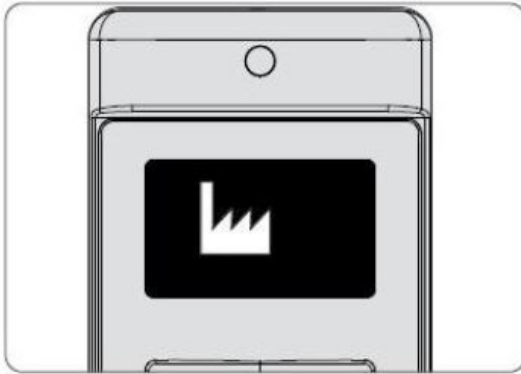
- 3 The OK ! shown on the display confirms the change to the technician control level. Let go of the UP and DOWN buttons.

- 4 Select the factory reset function by pressing the toggle switch. The factory reset symbol will appear on the display.



- 5 Press the UP button to confirm that you wish to select the factory setting function and to continue the procedure. The display changes.

- 6 Press the UP and DOWN buttons simultaneously for approximately 5 seconds until the pulsating signal tone that is heard stops. Let go of the buttons. The process is now completed.



- 7 The display changes again to the factory setting symbol which now indicates successful completion of the reset to factory settings.

8.8.2 On the control panel (outside)



- 1 Press the UP and DOWN buttons together, and keep them pressed while you at the same time press the "Settings" button briefly.

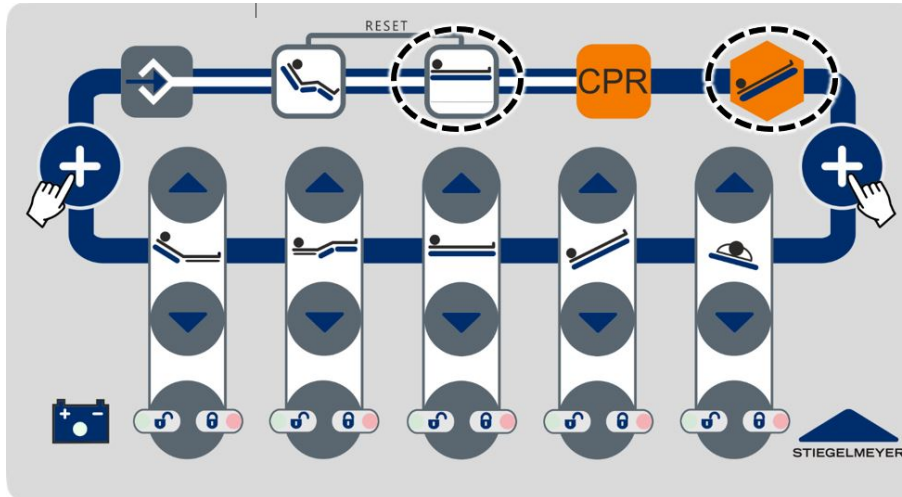


- 2 Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.

The display changes to "OK !" and so confirms the change to the technician control level.

- 3 Proceed now as described in steps 3-7 of chapter [On the LCD handset](#) » [71](#).

8.8.3 On the control box



Press the two marked buttons until the continuous signal tone stops.

8.9 Decommissioning

If the bed is not used for an extended period, please follow the instructions below for taking the bed out of service safely and ensuring ideal conditions for its re-use:


- Clean and disinfect the bed (see [Cleaning and disinfection](#) » 141).
- Adjust the mattress base to a horizontal home position at its lowest level
- Lock the electrical adjustment functions to prevent them from being activated accidentally or by unauthorised persons
- Engage the brakes on the bed
- Pay attention to the ambient conditions required for storage (see [Ambient conditions](#) » 48).
- Charge the integrated lithium ion battery by connecting the bed to the mains electricity supply for about 10-12 hours, and then unplug the mains cable from the socket and hang it on the headboard with the fixing clip.
 - Repeat this procedure **every 6 months** to maintain battery performance.


9 Use/routine

9.1 Move and immobilise the bed

The bed is equipped with four lockable castors which can be centrally operated using a brake pedal at the foot end of the bed.

One of the castors at the head end of the bed has a steering lock that can be activated. This makes it easier to move the bed in a straight line.

 Optionally, the position of the steering lock can be defined as the customer requires.

 **Fifth castor (optional equipment)**

The chassis can be fitted with an optional fifth castor which is located in the centre of the chassis. In this case, the fifth castor takes over the function of the steering lock.

Transport securing device – fifth castor

If the bed is equipped with a fifth castor, the transport securing device must be removed from the fifth castor before using the bed for the first time (refer [Removing the transport securing device](#) » 77).



ATTENTION

Material damage

Failure to heed this warning may result in damage to property due to disregarding the brake signal. If the brake is released without unplugging the mains cable from the socket, a signal tone will sound. This signal tone alerts you:

- To the possibility that the mains cable, the plug and the socket could be damaged.
- To possible risks of falls when getting in or out of bed when the bed is not immobilised.

⇒ The signal tone goes off automatically after 5 minutes.

9.1.1 Safety information on moving, braking and immobilising the bed

WARNING

Risk of injury

Failure to heed this warning may result in life-threatening injuries due to electric shock!
Each time before moving the bed, ensure that:

- The mains cable cannot be stretched, driven over or damaged in any other way.
- The mains cable has been hung up on the bed and is not touching the floor.
- The cables, tubes or wires of any attached equipment are adequately secured and cannot be damaged.

⇒ Otherwise the mains cable could sustain damage as a result of being torn off, crushed or driven over. Such damage could lead to electrical hazards and malfunctions.

CAUTION

Trapping hazard!

Failure to heed this warning may result in crushing injuries when transporting patients!

- When transporting a patient, ensure that the patient's hands and feet do not protrude over the edge of the bed and that they cannot get in the way of the wall deflection rollers.
- As a general rule, always apply the brakes when the bed is not being moved or when a patient is left unattended in the bed.
- Make sure that the mattress base has travelled to its lowest position before leaving the patient unattended. In this way, you greatly reduce the risk of the patient injuring himself/herself as a result of falling when getting in or out of bed.

CAUTION

Tipping hazard!



Failure to heed this warning may result in injury and damage to property due to the bed tipping up! If the unoccupied bed, with the bed extension extended, is moved over a floor with more than a 5° incline, it is possible that the bed may tip up if a very heavy person sits down at the foot end on the edge of the extended mattress base. A warning label on the bed chassis indicates this.

- In such situations, do not sit down on the edge of the mattress base!

ATTENTION

Material damage

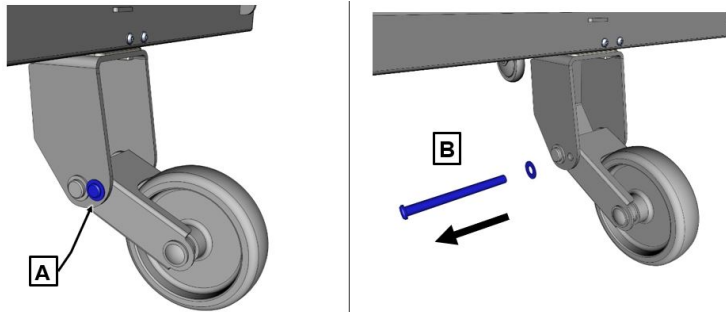
Failure to heed this warning may result in damage to property!

- **Attached accessories** When the bed is moved, ensure that objects hanging in the universal holders do not cause any damage (e.g. to door frames).
- **5. Castor (optional feature):** While moving the bed with a patient, be sure that the mattress base is not in its lowest position, but at least 5 cm higher. In this way, you enable flexible adjustment of the 5th castor when passing over uneven ground while also preventing overstrain.
- Move the bed with a patient in it only at a height not exceeding about 70 cm. Use the factory-set "normal position" for this (see chapter [Setting the normal position](#) » 83)
- **Transport height with Protega safety side fitted:** To move the bed easily outside the patient's room, please adjust the mattress base on the bed to an ergonomic medium height (approx. 50-60 cm). This also prevents the Protega safety sides from becoming soiled

9.1.2 Removing the transport securing device

The transport securing device is used inside the frame of the fifth castor and must be removed before using the bed for the first time.

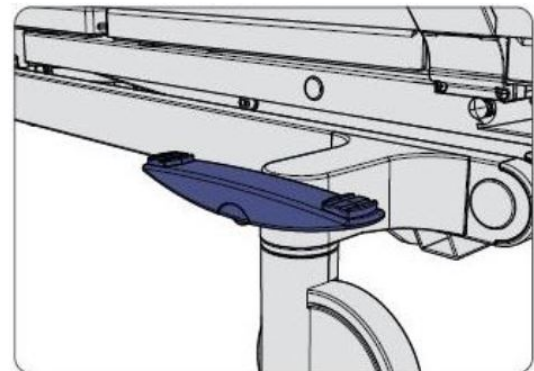
- Remove the transport securing device [A] together with the washer.
- To do so, pull out the transport securing device with your finger [B].



9.1.3 Moving the bed

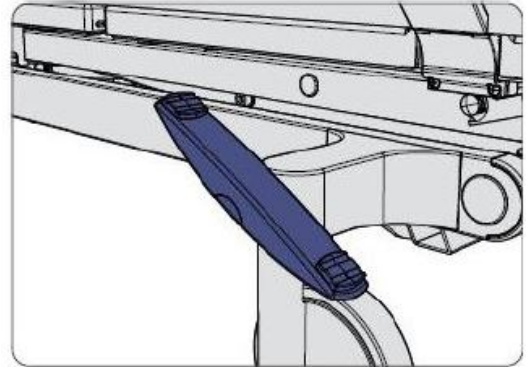
- i** **Please note:** When the bed is fitted with the maximum of equipment and is occupied by a heavy person, the bed can reach a weight of up to 480 kg. In this case, the bed must be pushed by two people in order to steer it in a controlled and safe way
- i** This bed is available in a variety of pedal versions. The following pictures are examples. The operating principle is always identical, however.

- 1 The brake pedal is located at the foot end of the bed.
- 2 Set the brake pedal to a horizontal middle position. All castors are now unlocked. You can now move the bed.



9.1.4 Immobilising the bed

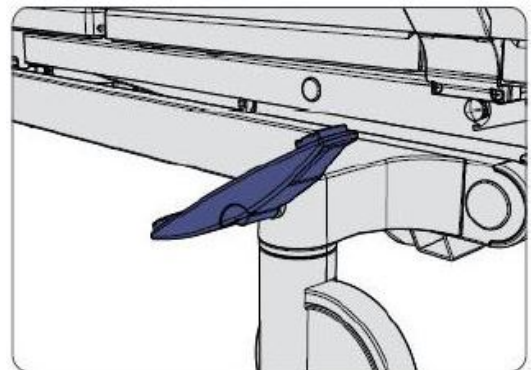
- 1 The brake pedal is located at the foot end of the bed.
- 2 Press the pedal down on the side facing the footboard (if colour coded, the red side of the pedal). All castors are operated with a pedal.



9.1.5 Move with steering lock

One of the castors of the bed can be fitted with a steering lock to make it easier to move the bed in a straight line and negotiate curves.

- 1 The brake pedal is located at the foot end of the bed.
- 2 Set the brake pedal to a horizontal middle position.
- 3 Set the castors to the direction in which you wish to move the bed. Lower the brake pedal on the castor.
- 4 Move the bed from the opposite end to which the steering lock is located. This makes it easier to control.



A castor with steering lock is always pointed forward. Castors without a steering lock are rotatable by 360°.

-  Place the brake pedal in a horizontal position to release the steering lock.

9.2 Locking/unlocking electric adjustment functions

Only users are authorised to lock adjustment functions! Medical personnel must decide which functions, if any, should be locked.

If the clinical condition of the patient is so critical that adjustments using the LCD handset or the control box on the inside of the safety side might be dangerous for her/him, the user must immediately lock the adjustment functions concerned.

The bed remains in the position it was in at the time it was switched off. A sticker on the linen holder draws attention to the fact that:







Locked function sticker



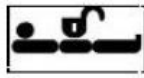
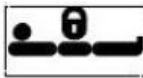


Locking the adjustment functions is necessary in the following situations in particular:

- If the patient is not able to operate the bed safely or to extricate himself from dangerous situations
- If the patient could be harmed by unintentional or inadvertent adjustments made by the drives
- Accessories or other devices are attached that could restrict the adjustment range of the bed, and put the patient at risk or cause damage to equipment
- Safety sides are fitted
- Children are left unattended in a room with the bed

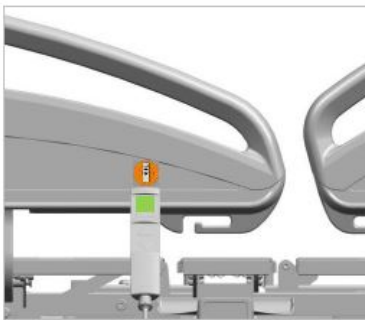
9.2.1 On the LCD handset

 The operating concept is described in chapter [LCD handset](#) » [22](#).

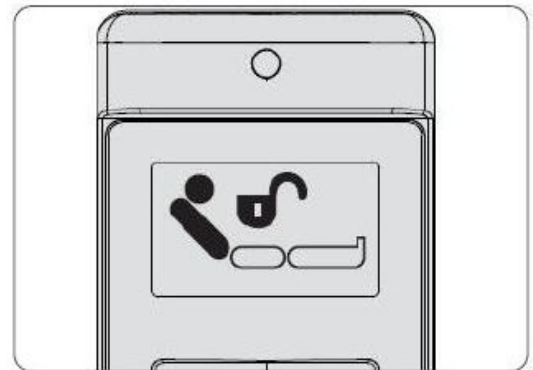
Adjustment function	Enabled function symbol	Locked function symbol
Backrest		
Thigh rest		

Adjustment function	Enabled function symbol	Locked function symbol
Sitting position		
Height adjustment		
Lateral tilting		

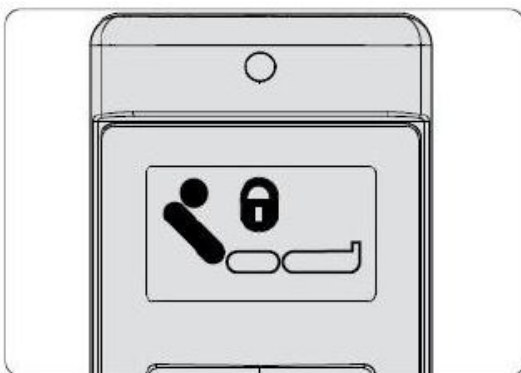
Tab.1: Adjustment functions that can be locked on the LCD handset



- 1 Hold the top end of the LCD handset briefly (for about ½ second) against the orange magnetic unlocking key to gain access to the staff control level on the LCD handset.



- 2 Use the toggle switch to select the adjustment function that you wish to lock. On the display, an opened padlock will appear above the symbol for the unlocked adjustment function.









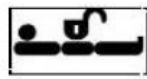


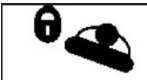
- 1 Press the UP or DOWN button. A closed padlock will appear above the

symbol for the adjustment function.
This adjustment function is now
locked.

i To unlock the adjustment function, press the UP or DOWN button again.

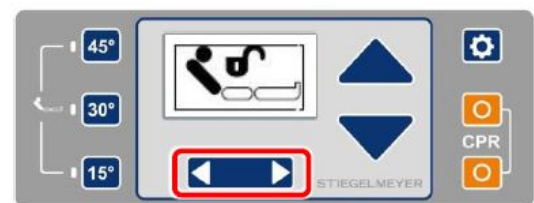
9.2.2 On the control panel (outside)

On the Protega safety side, medical staff can lock or unlock the following adjustment functions on the (outside) control panel, once they have switched to the second control level:

Adjustment function	Enabled function symbol	Locked function symbol
Backrest		
Thigh rest		
Sitting position		
Height adjustment		
Lateral tilting		

Tab.2: Lockable adjustment functions on the (outside) control panel

i An example of locking and unlocking backrest adjustments is shown below. All other adjustment functions are carried out in the same way as shown in the example below.



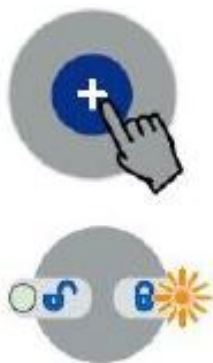
- 1 Press the “Settings” button. The CPR symbol appears on the display.
- 2 Use the toggle switch to select the function and status that you wish to lock. On the display, an opened padlock will appear above the symbol for the unlocked adjustment function.
- 3 Press the UP or DOWN button. A closed padlock will appear above the symbol for the adjustment function. This adjustment function is now locked.



i To unlock the adjustment function, press the UP or DOWN button again.

9.2.3 On the control box

The control box is used to lock the drives for the backrest, thigh rest, reverse-Trendelenburg and mattress base height. The orange LED in the unlock button concerned is on if the function is locked. The green LED is on if the function is unlocked.



- 1 Keep one of the two unlock buttons pressed.
- 2 In addition, press the locking button concerned for an unlocked function (green LED on) to lock the adjustment function. The status can be changed from locked to unlocked and vice versa by alternating between these buttons.

9.3 Setting the normal position

In the normal position, the mattress base, backrest and thigh rest are horizontal, and the mattress base is set to a height of approximately 60 cm.

i The height and the angle of tilt into a reverse-Trendelenburg position from the normal position can be individually set on the control box. The backrest and thigh rest always remain in the horizontal position.

9.3.1 On the control box

This function can be activated when all adjustment functions have been unlocked.

- i** If a height limit has been set for the mattress base (see [Restricting the maximum mattress base height » 128](#) and [Restricting minimum mattress base height » 131](#)), the mattress base only moves as far as the set position when the corresponding button is pressed (either on the control box or the locking box). This is indicated on the control box by flashing LEDs for the height adjustment and the Trendelenburg and reverse-Trendelenburg positions.



- 1 First press the unlock button and then press the normal position button to set the mattress base, backrest and thigh rest to this position.

9.3.2 On the LCD handset and locking box

This function can be activated on both control units on the "Easy Care" level. For detailed instructions for use, see chapter ["Easy Care" function » 112](#).

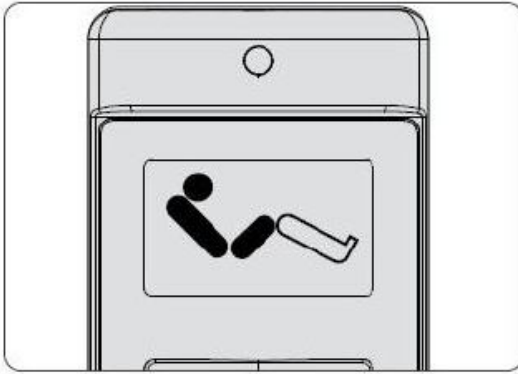
9.4 Setting the auto contour position

In the auto contour UP position, first the thigh rest and directly following, the backrest, are raised.

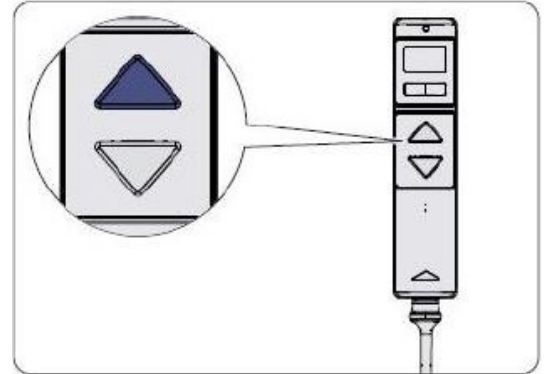
When auto contour DOWN is set, the backrest, and then the thigh rest, are lowered. This prevents the patient from sliding towards the foot end of the bed.

- i** If the thigh rest or backrest is locked, this function cannot be selected.

9.4.1 On the LCD handset



1 Select auto contour using the toggle switch.



2 Press the UP button to set the bed to the auto contour position.

i Press the DOWN button to move the drives back to the normal position.

9.4.2 On the control panel (outside)



1 Select auto contour using the toggle switch.

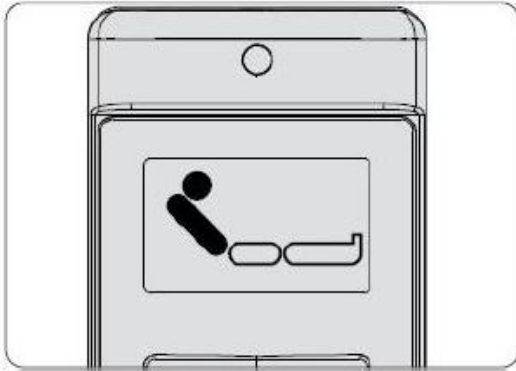
2 Press the UP button to set the bed to the auto contour position.

i Press the DOWN button to move the drives back to the normal position.

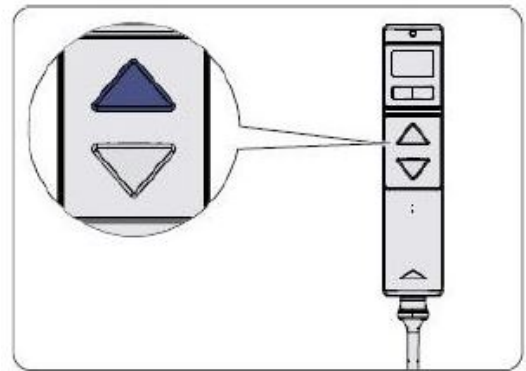
9.5 Setting the backrest

The backrest may be set at any angle between 0° and approx. 70°.

9.5.1 On the LCD handset



- 1 Select auto contour using the toggle switch.



- 2 Press the UP button to set the bed to the auto contour position.

- i** Press the DOWN button to move the drives back to the normal position.

Optional: Multi-stage display of angle with setting facility for automatic intermediate stop

- i** The angle is shown in increments of 15° - 30° - 45° - 60° - maximum.

The angle is only indicated when running through and stopping at these increments; for better readability, other intermediate angles are not indicated. All figures given are approximate values.



Image26: Display 45°

Switching intermediate stop ON/OFF and reprogramming it



- i** This function is factory programmed to an angle of 30°, and switches off at this angle. If necessary, this function can be activated on the handset and on the control panel (on the outside of the Protega safety side) and the intermediate stop angle can be reprogrammed as required.

Switching ON/OFF:

1. Switch to the “medical staff control level”

- Handset: Hold the end of the handset briefly against the magnetic unlocking key.
- Control panel (outside): Press the “Settings” button.




2. Select  or  with the toggle switch and confirm your selection with the UP button

Reprogramming the intermediate stop angle

1. Set the intermediate backrest stop to the desired position
2. Switch to the “technician control level”

- Handset: To find out how to switch to the technician control level, see chapter [On the LCD handset » 71](#), steps 1-3.
- Control panel (outside): Press the UP and DOWN buttons and keep them pressed, then press the SETTINGS button briefly in addition. Finally, keep the UP and DOWN buttons pressed for a further 5 seconds.



3. Select the icon  with the toggle switch and confirm your selection with the UP button

⇒ A conformation beep sounds for one second

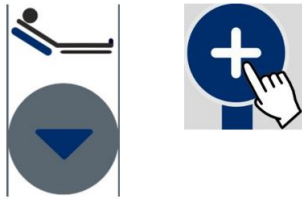
⇒ The original position is overwritten

- i** When the intermediate stop function is activated, the backrest stops in the intermediate stop position that has been set. To continue, release the UP/DOWN adjustment button and then press this button again.

9.5.2 On the control box

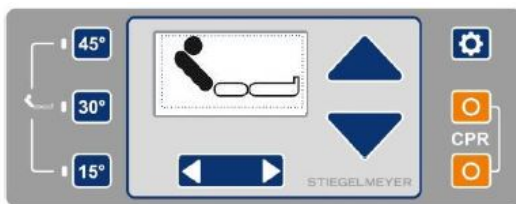


- 1 First press the unlock button and then press the backrest UP button to raise the backrest.



- 2 By pressing the unlock button and then the backrest DOWN button, the thigh rest is lowering to the normal position again.

9.5.3 On the control panel (outside)

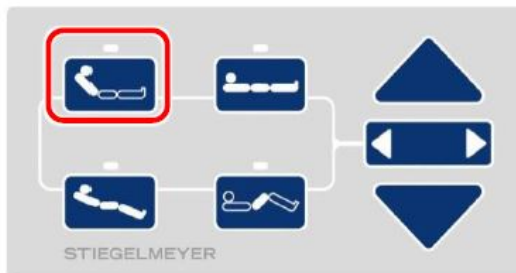


- 1 Select the backrest adjustment function using the toggle switch.



- 2 Press the UP button to raise the backrest.

9.5.4 On the (inside) control panel




- 1 Select the backrest adjustment function using the toggle switch. Alternatively, you can just press the backrest button directly.



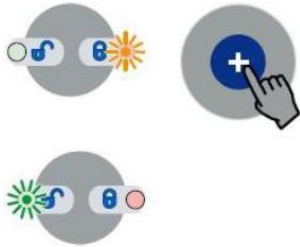
If this adjustment function is unlocked, the LED lights up green. If this function is locked, the LED lights up orange.

- 2 Press the UP button to raise the backrest. Press the DOWN button to lower the backrest again.

9.5.5 On the foot pedal (optional)

-  For safety reasons, foot pedals are always locked initially – even if the height adjustment function is enabled.

9.5.5.1 Unlocking on the control box



- 1 First press the unlock button and then the relevant height adjustment locking button, when alternating between locked (orange LED) and free (green LED), until the green LED starts flashing. Only then is the foot pedal released.

i If the height adjustment is locked again, the foot pedal will also be locked again.

9.5.5.2 Unlocking on the control panel (outside)



- 1 Press the "Settings" button. The CPR symbol appears on the display.
- 3 Press the UP or DOWN button. An opened padlock will appear above the symbol. The foot pedal is now released.



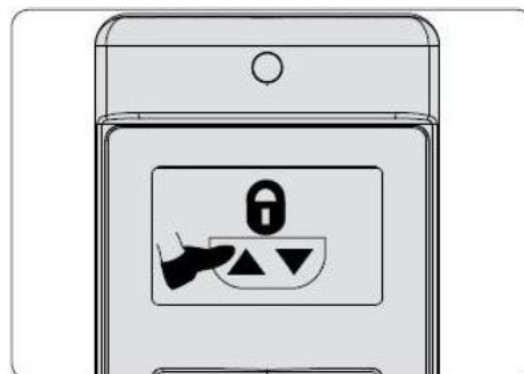
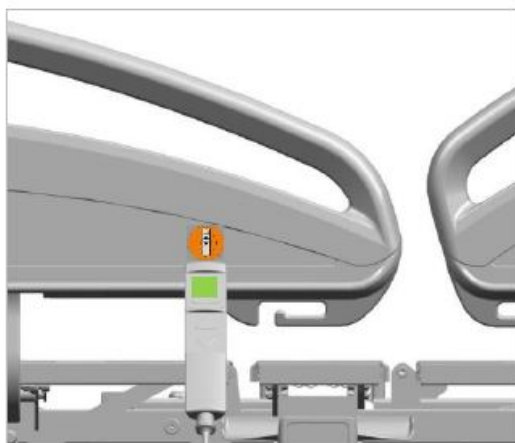
- 2 Select the foot pedal symbol using the toggle switch. A closed padlock above the symbol indicates that the foot pedal is locked.



i To lock the foot pedal, press the DOWN or UP button again.

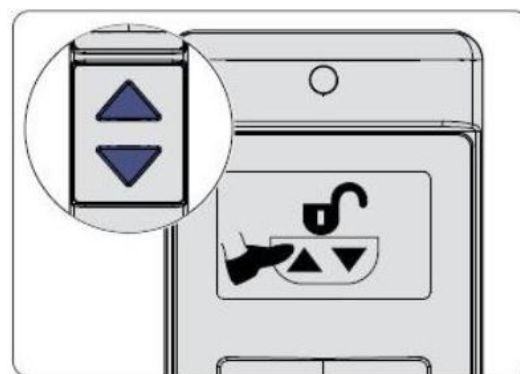
9.5.5.3 On the LCD handset (optional)

This function can only be activated when the adjustment function for the bed height has been enabled.



- 1 Hold the top end of the LCD handset briefly (for about ½ second) against the orange magnetic unlocking key to gain access to the staff control level on the LCD handset.
- 3 Press the UP or DOWN button. An opened padlock will appear above the symbol. The foot pedal is now released.

- 2 Next, select the foot pedal symbol using the toggle switch. A closed padlock above the symbol indicates that the foot pedal is locked.



 To lock the adjustment function again, press the DOWN or UP button again.

9.5.5.4 Using the foot pedal

⚠ ATTENTION

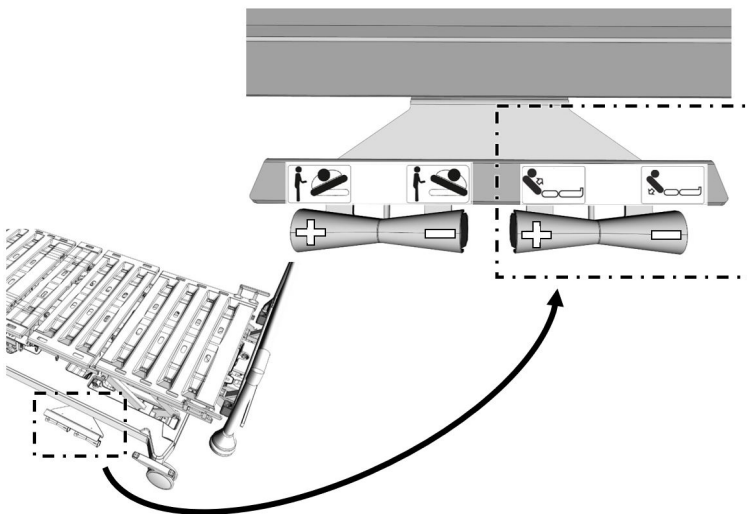
Material damage

Failure to heed this warning may result in damage to property such as bending/deformation of the foot pedal construction.

- Do not stand on the protective cap of the foot pedal.
- The protective cap of the foot pedal must not be used as a step to stand on.

i The foot pedal is protected with a protective cap to prevent accidental use.

1. Tread on the desired end of the foot pedal until the mattress base has reached the required height.
2. Take your foot from the tread on the end of the pedal to stop adjustment.



Button	Explanation
+	Raising the backrest
-	Lowering the backrest

9.6 Setting the bed height

The mattress base height is continuously adjustable. The adjustment range can be restricted electronically on the handset and the control box (see [Special bed adaptations](#) » 126). If the mattress base is tilted, it moves automatically into a horizontal position when it reaches the highest or lowest height setting.



- When the mattress base height is adjusted, an additional intermediate stop is made automatically at a comfortable height for getting in or out of bed of about 41 cm. To continue with the height adjustment, let go of the adjustment button and then press it again.
- If a height limit has been set for the mattress base (see [Restricting the maximum mattress base height](#) » 128 and [Restricting minimum mattress base height](#) » 131), the mattress base only moves as far as the set position when the corresponding button is pressed (either on the control box or the locking box). This is indicated on the control box by flashing LEDs for the height adjustment and the Trendelenburg and reverse-Trendelenburg positions.



CAUTION

Risk of crushing

Failure to heed this warning may result in injury due to crushing. If the mattress base is raised or lowered beyond the pre-set intermediate stopping position (41 cm), a signal tone alerts you to the danger of feet being crushed or entrapped.

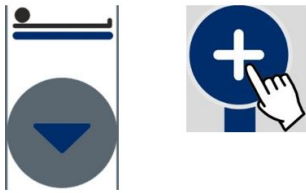
- Make sure that there are no feet or objects under the mattress base of the bed while the adjustment is carried out!

9.6.1 On the control box

This function can only be activated when all adjustment functions have been unlocked. To move the mattress base height to a certain height, proceed as follows:



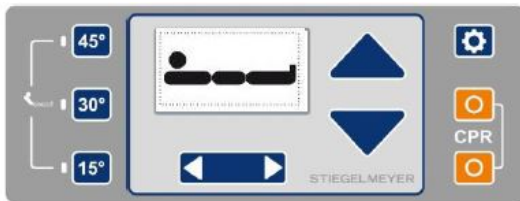
- 1 To raise the mattress base, first press the unlock button and then the height adjustment UP button.



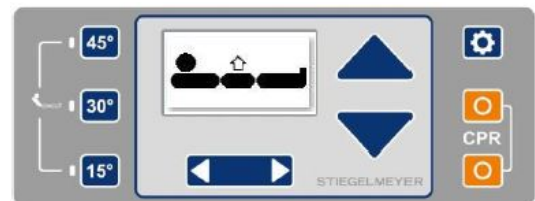
2

To lower the mattress base, first press the unlock button and then the height adjustment DOWN button.

9.6.2 On the control panel (outside)



1 Select the adjustment function for the mattress base height using the toggle switch.

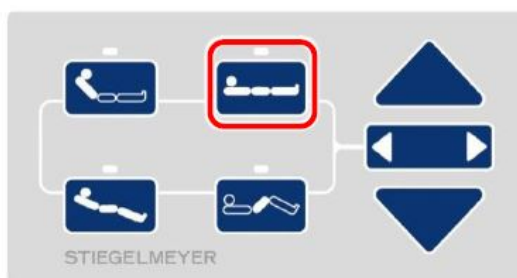


2 Press the UP button to raise the mattress base height.



Press the DOWN button to lower the bed again.

9.6.3 On the (inside) control panel



1

Select the adjustment function for the mattress base height using the toggle switch. Alternatively, you can just press the mattress base height button directly.



If this adjustment function is unlocked, the LED lights up green. If this function is locked, the LED lights up orange.

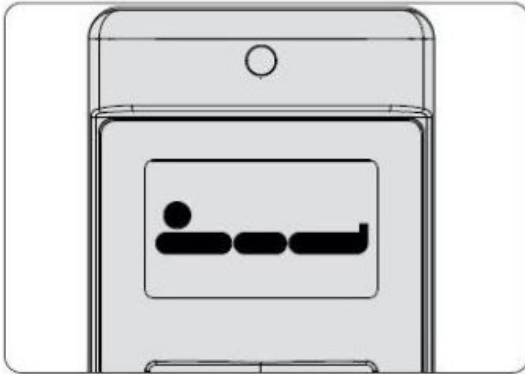
2

Press the UP button to raise the mattress base height.

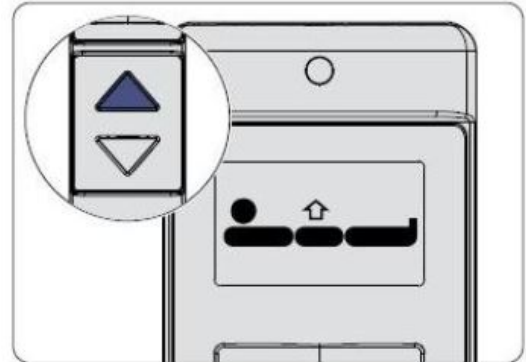


Press the DOWN button to lower the bed again.

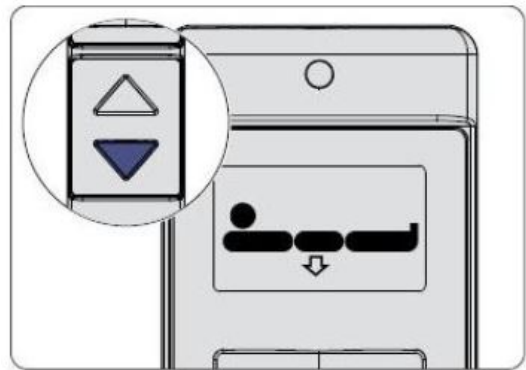
9.6.4 On the LCD handset (optional)



- 1 Select the bed height adjustment function using the toggle switch.
- 3 Press the DOWN button to lower the bed again.



- 2 Press the UP button to raise the bed.



9.6.5 On the foot pedal (optional)

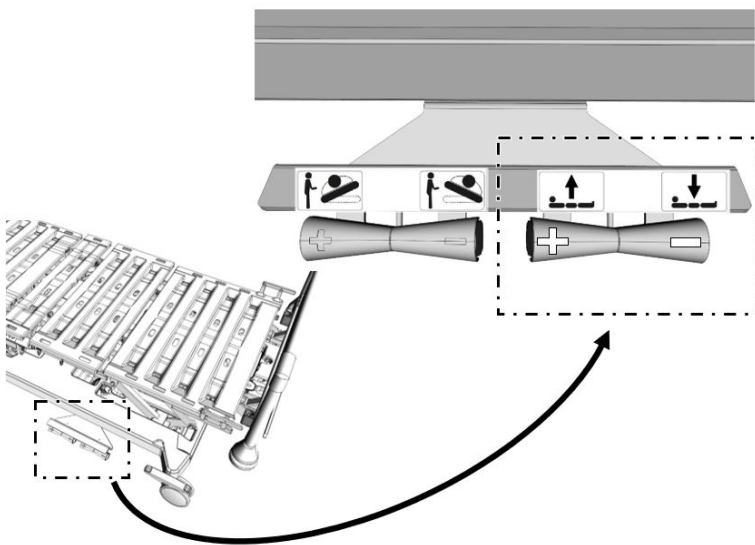
ATTENTION

Material damage

Failure to heed this warning may result in damage to property such as bending/deformation of the foot pedal construction.

- Do not stand on the protective cap of the foot pedal.
- The protective cap of the foot pedal must not be used as a step to stand on.

- i** For safety reasons, foot pedals are always locked initially – even if the height adjustment function is enabled. To unlock, see chapter [On the foot pedal \(optional\)](#) » 88.
- i** The foot pedal is protected with a protective cap to prevent accidental use.
 1. Tread on the desired end of the foot pedal until the mattress base has reached the required height.
 2. Take your foot from the tread on the pedal to stop adjustment.
- i** Similar to illustration



Button	Explanation
+	Raise mattress base
-	Lower mattress base

9.7 Adjusting the lateral tilt

The mattress base can be tilted sideways along its longitudinal axis to an angle of approximately 25°. This adjustment is possible on the control panel (outside), the control box, the foot pedal (optional) and the LCD handset (optional).

 **CAUTION****Risk of injury and tipping over**


Failure to heed this warning may result in injury and damage to property, if:
the bed is standing on a floor inclined at an angle of more than 5° towards the longitudinal axis,
the safe working load of the bed of 260 kg is reached or exceeded and
the "lateral tilt" function is set to an angle of tilt of more than 25°.

- In this case, ensure when setting the "lateral tilt" function that the angle of tilt does not exceed 25°.
- Always avoid placing the bed on a floor that is inclined towards the longitudinal axis of the bed.

 **CAUTION****Risk of injury**






Failure to heed this warning may result in injuries when the longitudinal axis of the bed is tilted, as the patient may fall out of bed.

- Secure the patient before tilting the bed. Use shaped cushions (accessory) or similar preventive measures for this purpose.
- Always raise the safety sides before laterally tilting the bed.
- For safety reasons, this function must be kept locked at all times while not in use. (See [Locking/unlocking electric adjustment functions](#) » 80). This prevents inadvertent adjustments from being made and the patient falling out of bed.


 While the bed is tilting, we recommend that you do not use the patient lifting pole and infusion stand in order to avoid endangering the stability of the bed and prevent any potential injury to the patient.

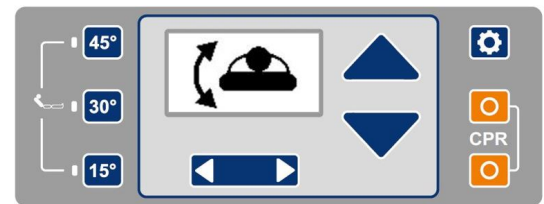
9.7.1 On the control box

This function can only be activated when all adjustment functions have been unlocked.

- | | | |
|---|---|---|
|  |  | <p>1 To tilt the mattress base to the right, first press the unlock button and then the lateral tilting UP button.</p> |
|  |  | <p>2 To tilt the mattress base to the left, first press the unlock button and then the lateral tilting DOWN button.</p> |
- 
- The mattress base moves first into the horizontal position and then tilts to the left.


9.7.2 On the control panel (outside)

-  To tilt the mattress base of the bed laterally around its longitudinal axis, you must first change to the staff control level.

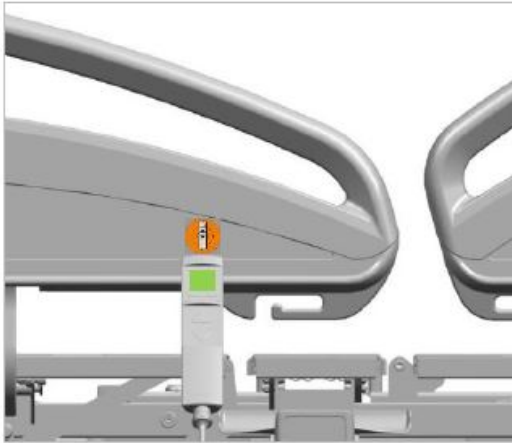


- | | |
|--|---|
| <p>1 Press the “Settings” button. The CPR symbol appears on the display.</p> | <p>2 Select the lateral tilting function using the toggle switch.</p> |
| <p>3 Press the UP button to tilt the mattress base to the right.</p> | |

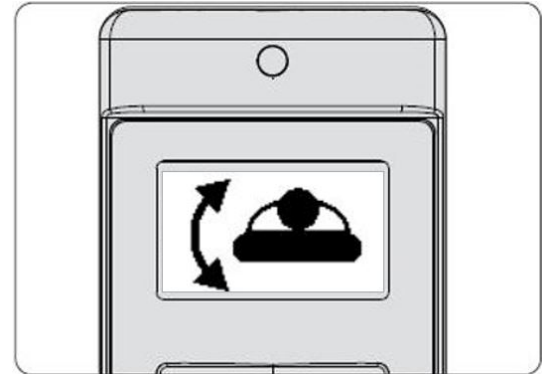
Press the DOWN button to tilt the mattress base to the left.

-  During tilting (to the right/left), the achieved tilting angles of 5°, 10°, 15°, 20° and 25° are briefly shown on the display. At an angle of 10° the tilting stops for safety reasons. Press the button again to tilt the mattress base further.

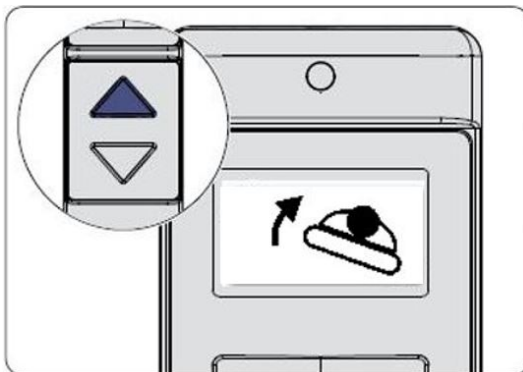
9.7.3 On the LCD handset (optional)



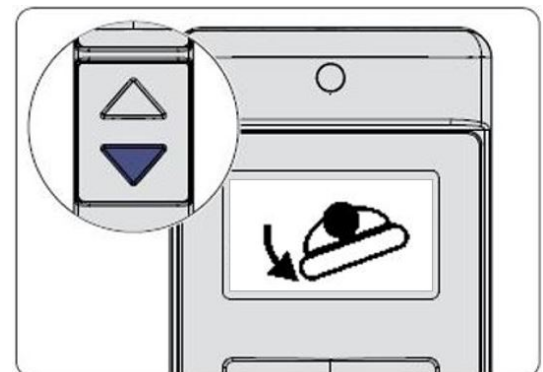
- 1 Hold the top end of the LCD handset briefly (for about ½ second) against the orange magnetic unlocking key to gain access to the staff control level on the LCD handset.




- 2 Next, select the lateral tilting position using the toggle switch.



- 3 Press the UP button to tilt the mattress base to the right.



- 4 Press the DOWN button to tilt the mattress base to the left.

 During tilting (to the right/left), the achieved tilting angles of 5°, 10°, 15°, 20° and 25° are briefly shown on the display. At an angle of 10° the tilting stops for safety reasons. Press the button again to tilt the mattress base further.


9.7.4 On the foot pedal (optional)


ATTENTION

Material damage


Failure to heed this warning may result in damage to property such as bending/deformation of the foot pedal construction.

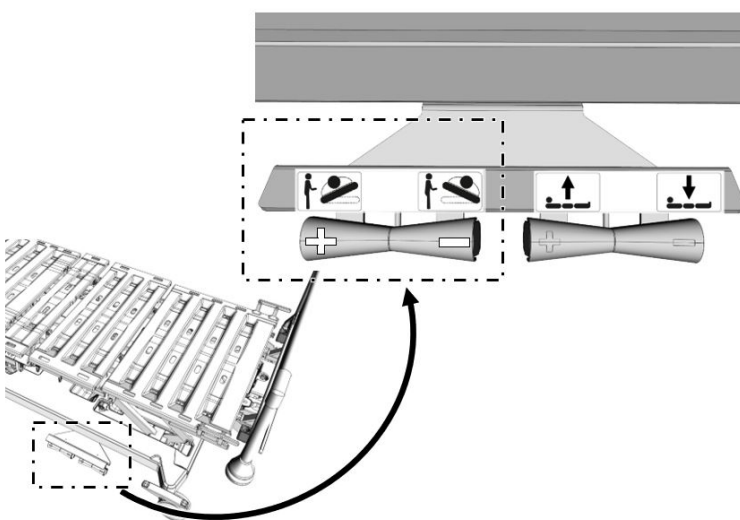
- Do not stand on the protective cap of the foot pedal.
- The protective cap of the foot pedal must not be used as a step to stand on.

 For safety reasons, foot pedals are always locked initially – even if the height adjustment function is enabled. To unlock, see chapter [On the foot pedal \(optional\)](#) » 88.

 The foot pedal is protected with a protective cap to prevent accidental use.

1. To tilt the bed to the right or left, tread on the plus or minus button on the foot pedal until the mattress base has reached the desired angle of tilt.
2. Take your foot from the tread on the pedal to stop adjustment.

 Similar to illustration

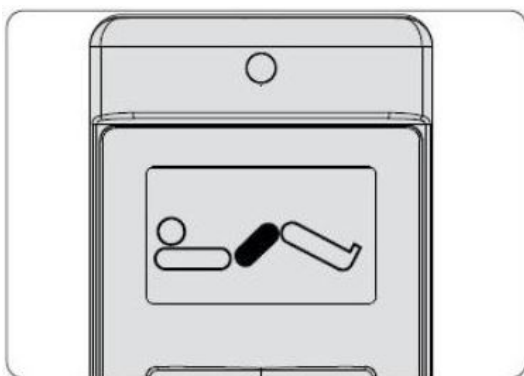


Button	Explanation
+	Tilting to the right
-	Tilting to the left

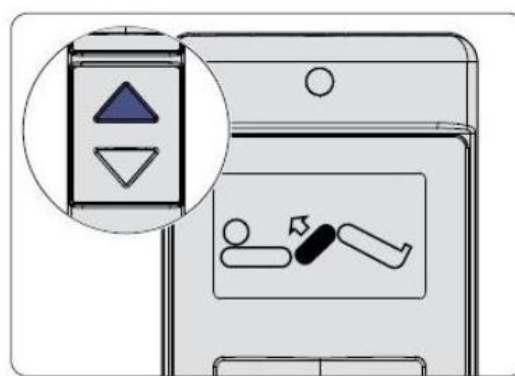
9.8 Setting the thigh rest

The thigh rest can be raised to approximately 40°.

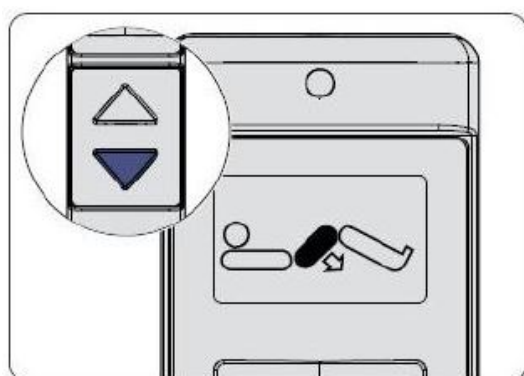
9.8.1 On the LCD handset (optional)



1 Select the thigh rest adjustment function using the toggle switch.



2 Press the UP button to raise the thigh rest.



3 Press the DOWN button to lower the thigh rest to the normal position again.

9.8.2 On the control box



1

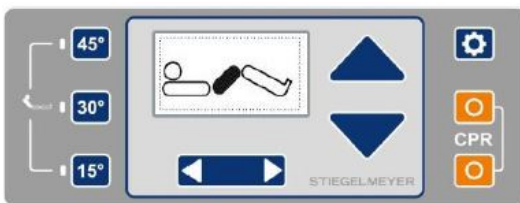
First press the release button and then the UP thigh rest button to raise the thigh rest.



2

By pressing the unlock button and then the thigh rest DOWN button, the thigh rest moves back to the normal position.

9.8.3 On the control panel (outside)



1 Select the thigh rest adjustment function using the toggle switch.

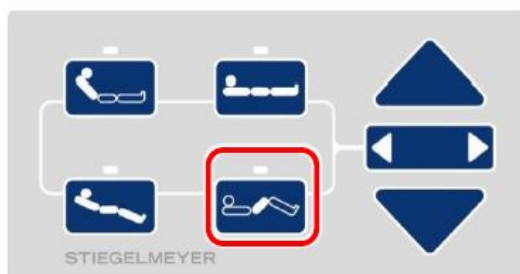


2 Press the UP button to raise the thigh rest.



Press the DOWN button to lower the thigh rest to the normal position again.

9.8.4 On the (inside) control panel



1 Select the thigh rest adjustment function using the toggle switch. Alternatively, you can just press the thigh rest button directly.



If the adjustment function is unlocked, the LED lights up green. If this function is locked, the LED lights up orange.

2 Press the UP button to raise the thigh rest.



Press the DOWN button to lower the thigh rest to the normal position again.

9.9 Setting the lower leg rest

9.9.1 Mechanically

The lower leg rest can be raised and lowered by hand if the thigh rest is raised.

It is possible to adjust the bed to an orthopaedic position (stepped bed) or so that the lower leg rest is inclined downwards.

WARNING

Risk of injury

Failure to heed this warning may result in injury due to abrupt movement of the lower leg rest.

- The lower leg rest must lock into place on both sides once released!
- To raise and lower the lower leg rest, proceed in the order specified in the operating instructions!

ATTENTION

Material damage

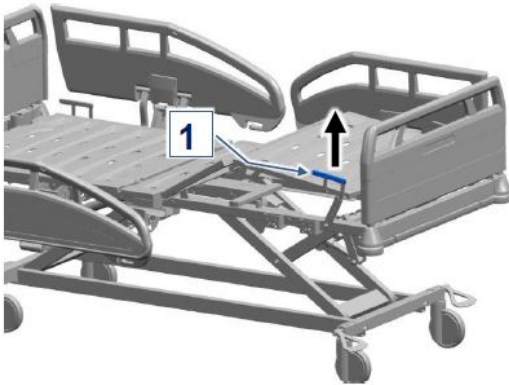
Failure to heed this warning may result in damage to property due to an excessive weight being exerted on the foot end of the raised lower leg rest.

- Avoid damaging the Rastomat mechanism of the lower leg rest due to a heavy person sitting down on it.
- Lower the lower leg rest slowly beforehand.

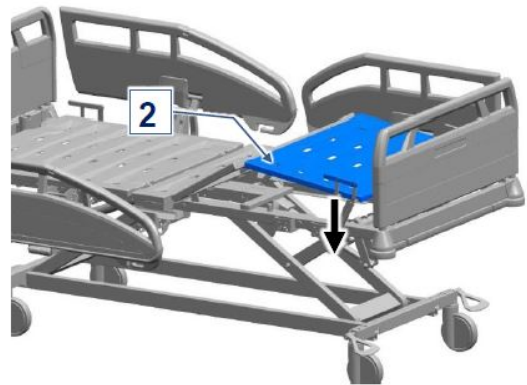
9.9.1.1 Raising/lowering

- The bed must be immobilised by applying the brakes.
- The thigh rest must be raised (only possible electrically).

Raising

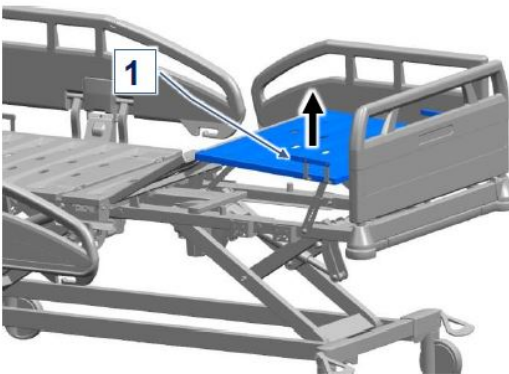


- 1 Raise the lower leg rest using the mattress retainer bar [1] until the desired position is reached.

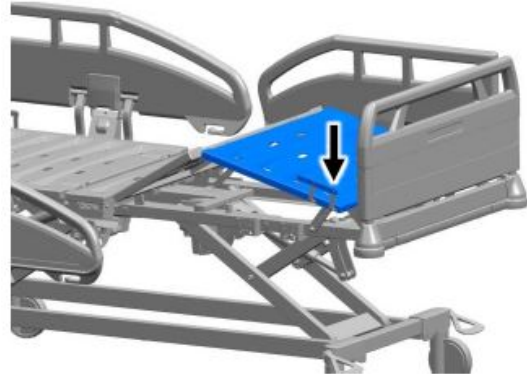


- 2 Then lower the lower leg rest [2] slowly until it clicks into place.

Lowering



- 1 Raise the lower leg rest to its full extent using the mattress retainer bar [1].



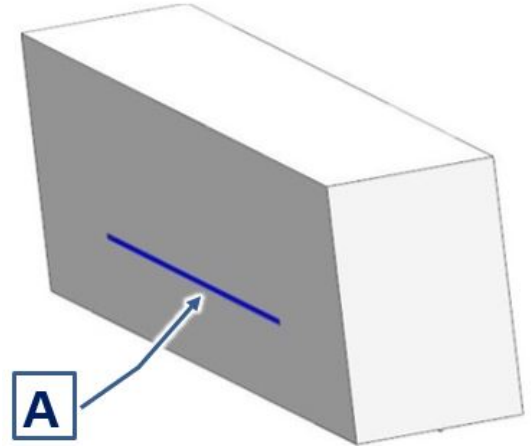
- 2 Then lower the lower leg rest.

9.10 Integrated lower leg rest extension (optional equipment)

The bed can optionally be fitted in the factory with an integrated lower leg rest extension.

It is supplied with a special mattress piece with a slit **[A]** on its underside.

This integrated lower leg rest extension is used when the bed is extended to a length of 220 cm.



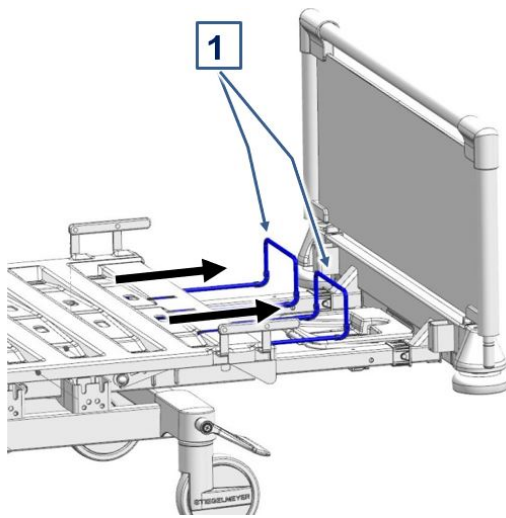
9.10.1 Use for the intended purpose

- The integrated lower leg rest extension is only intended for supporting the feet
- It is not for sitting on
- It must not be subjected to a weight of more than **10 kg** per slide-out bracket
- Exceeding the maximum permissible weight may cause the integrated lower leg rest to break and put it out of service

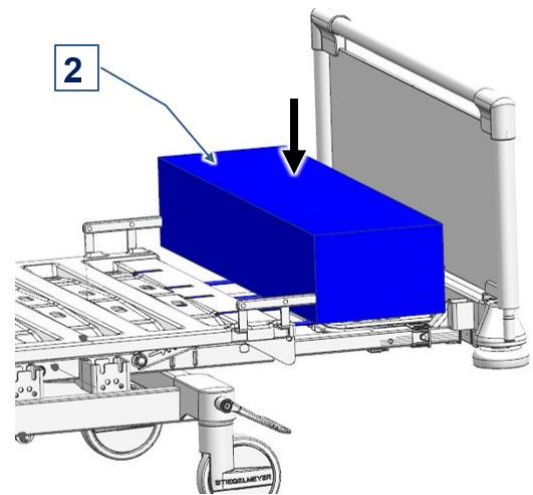
9.10.2 Operation

9.10.2.1 Extending

- 1 Slide out the bed extension. (For details on how to do so, please refer to the additional accessory manual supplied with the bed extension).



2. Slide the two brackets **[1]** of the integrated lower leg rest out to their fullest extent.



3. Place the mattress piece **[2]** with its slit facing downwards onto the brackets.

9.10.2.2 Retracting

Proceed in reverse order to the procedure for extending.

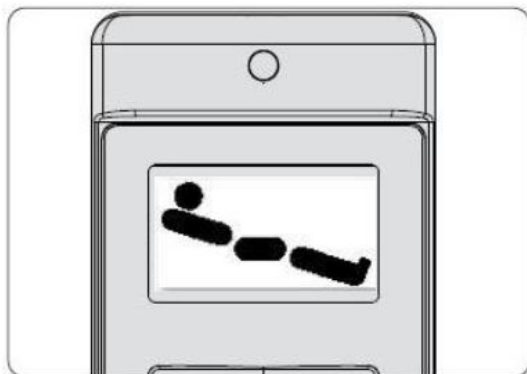
9.11 Setting a sitting position

This function can only be activated when all individual functions have been enabled. The mattress base can be tilted to a reverse-Trendelenburg position of up to about 14°.

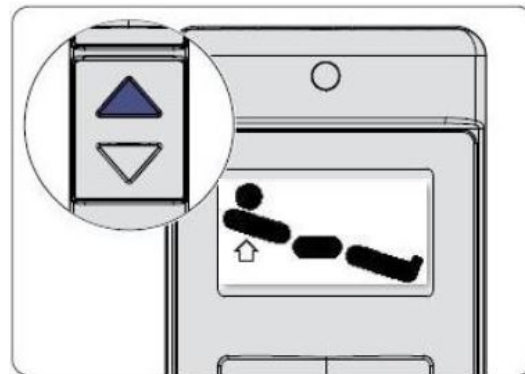
When this adjustment is carried out, the backrest and thigh rest are initially raised (as in auto contour). The mattress base is then tilted to a reverse-Trendelenburg position.

- i** If the height adjustment range is restricted electronically, this also limits the adjustment range for setting the reverse-Trendelenburg position.

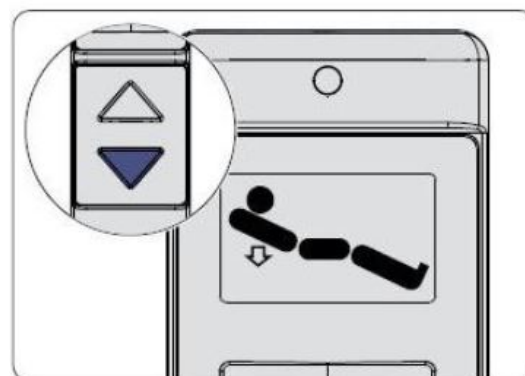
9.11.1 On the LCD handset (optional)



- 1 Select the sitting position adjustment function using the toggle switch.
- 4 Press the DOWN button to initially move the bed back to the lowest mattress base level. After this, the backrest and thigh rest are then lowered.



- 2 Press the UP button until the bed is set to a sitting position.
- 3 Press the UP button again to adjust the backrest.



9.11.2 On the control box

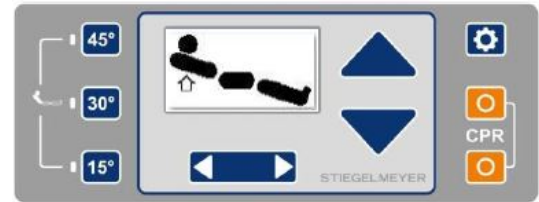


- 1 First press the unlock button and then the sitting position button to move to the sitting position.

9.11.3 On the control panel (outside)



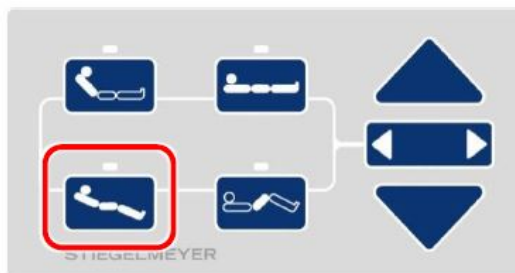
- 1 Select the sitting position adjustment function using the toggle switch.



- 2 Press the UP button until the bed is set to a sitting position.

i Press the DOWN button to initially move the bed back to the lowest mattress base level. After this, the backrest and thigh rest are then lowered.

9.11.4 On the (inside) control panel



- 1 Select the sitting position adjustment function using the toggle switch.

Alternatively, you can just directly press the sitting position button.

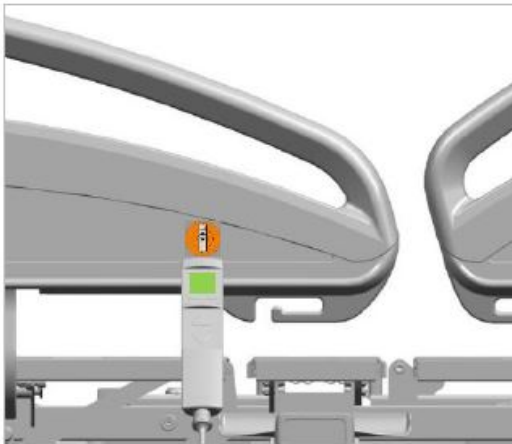
i If this adjustment function is unlocked, the LED lights up green. If this function is locked, the LED lights up orange.

- 2 Press the UP button until the bed is set to a sitting position.

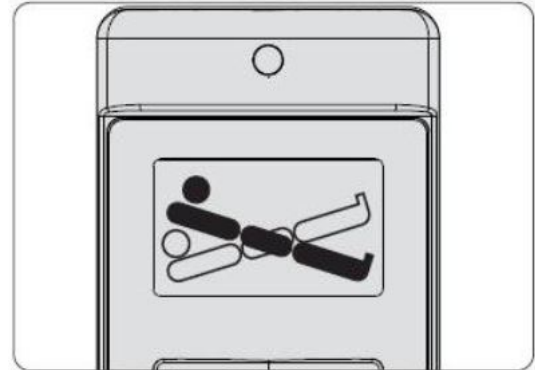
i Press the DOWN button to initially move the bed back to the lowest mattress base level. After this, the backrest and thigh rest are then lowered.

9.12 Setting a Trendelenburg or Reverse-Trendelenburg Position

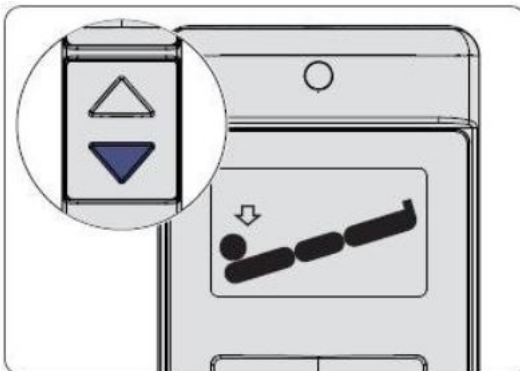
9.12.1 On the LCD handset



- 1 Hold the top end of the LCD handset briefly (for about ½ second) against the orange magnetic unlocking key to gain access to the staff control level on the LCD handset.

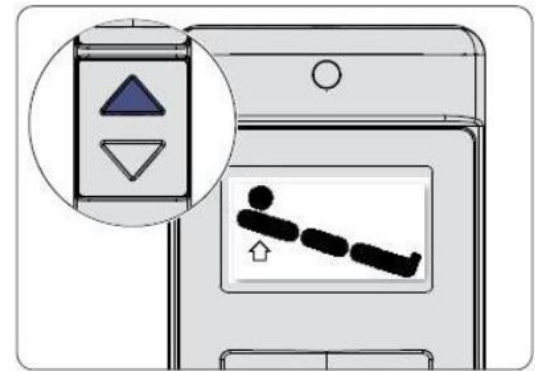


- 2 Next, select the Trendelenburg position using the toggle switch.



- 3 Press the DOWN button until the bed is set to the Trendelenburg position.

i Once the mattress base has reached a horizontal position, an automatic stop is made. Release the button and then press the button again to continue adjustment to a Trendelenburg or reverse-Trendelenburg position.



- 4 To obtain a reverse-Trendelenburg position, press the UP button.

i The display indicates the angle in increments of 6° - 12° and max.

9.12.2 On the control box

i If a height limit has been set for the mattress base (see [Restricting the maximum mattress base height » 128](#) and [Restricting minimum mattress base height » 131](#)), the mattress base only moves as far as the set position when the corresponding button is pressed (either on the control box or the locking box). This is indicated on the control box by flashing LEDs for the height adjustment and the Trendelenburg and reverse-Trendelenburg positions.

- This position can be set from any mattress base height.
- The maximum angle of tilt is up to 15° in every direction.
- If necessary, the height will be automatically adjusted.



- 1 Press the unlock button and then the UP button until the full extent or the desired position is reached.

9.12.2.1 Reverting to horizontal bed position



- 1 First press the unlock button and then the DOWN button.

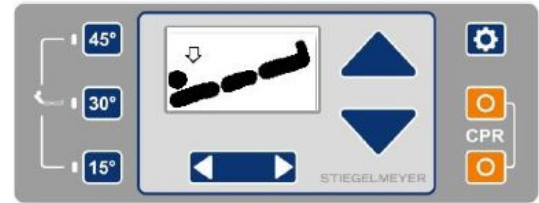
The mattress base automatically moves to the horizontal position, and stops there.


9.12.3 On the control panel (outside)

i To adjust the bed to a Trendelenburg or reverse-Trendelenburg position, you must first of all switch over to the staff control level.



- 1 Press the “Settings” button. The CPR symbol appears on the display.
- 2 Select the Trendelenburg position using the toggle switch.
- 3 Press the DOWN button until the bed is set to the Trendelenburg position.



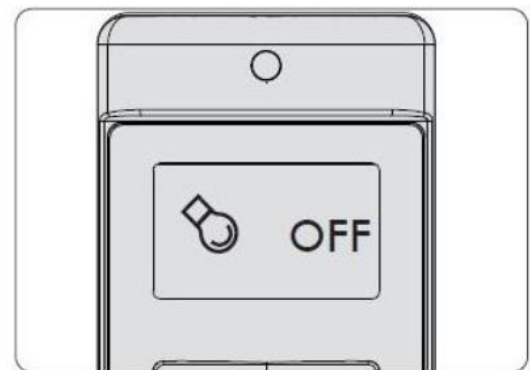
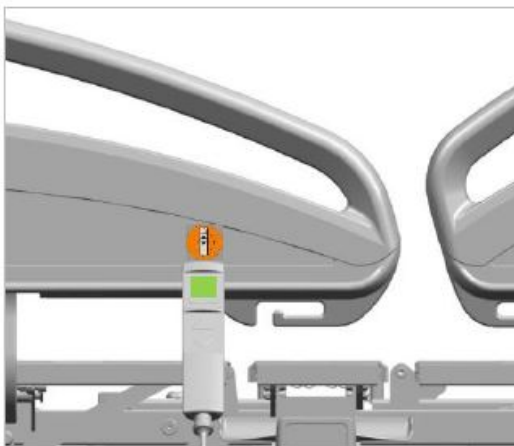
 To obtain a reverse-Trendelenburg position, press the UP button.

9.13 Switching under bed light on/off (optional equipment)

The under bed light is switched on automatically when plugged into the mains electricity supply once the bed reaches its lowest height. The light is switched off automatically once the bed is raised or the mains cable is unplugged.

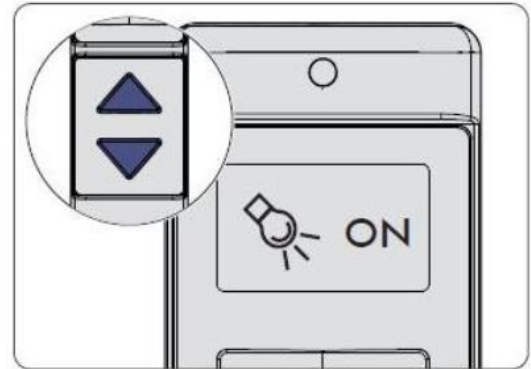
9.13.1 On the LCD handset

It is also possible to switch the light on or off by hand, using the LCD handset.



- 1 Hold the top end of the LCD handset briefly (for about ½ second) against the orange magnetic unlocking key to gain access to the staff control level on the LCD handset.
- 2 Next, select the under bed light adjustment function using the toggle switch. The under bed light symbol will appear on the display and an OFF status will be displayed for the turned off under bed light.

- 3 Press the UP or DOWN button. The under bed light is now switched on and an ON status is displayed.



- i** To switch the under bed light off, press the DOWN or UP button again (OFF status displayed).

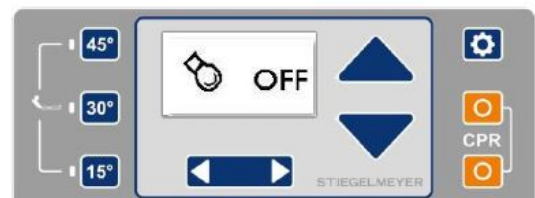
If an OOB system is installed, the OOB system can be set so that the under bed light goes on automatically whenever the patient gets out of bed. (Please refer to the separate instruction manual for the Out-of-Bed (OOB) system).

9.13.2 On the control panel (outside)

- i** To turn the under bed light on or off, you must first of all switch to the staff control level.

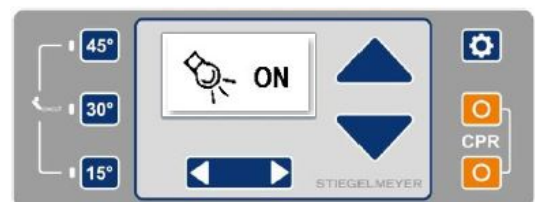


- 1 Press the "Settings" button. The CPR symbol appears on the display.



- 2 Select the under bed light adjustment function using the toggle switch. The under bed light symbol will appear on the display and an OFF status will be displayed for the turned off under bed light.

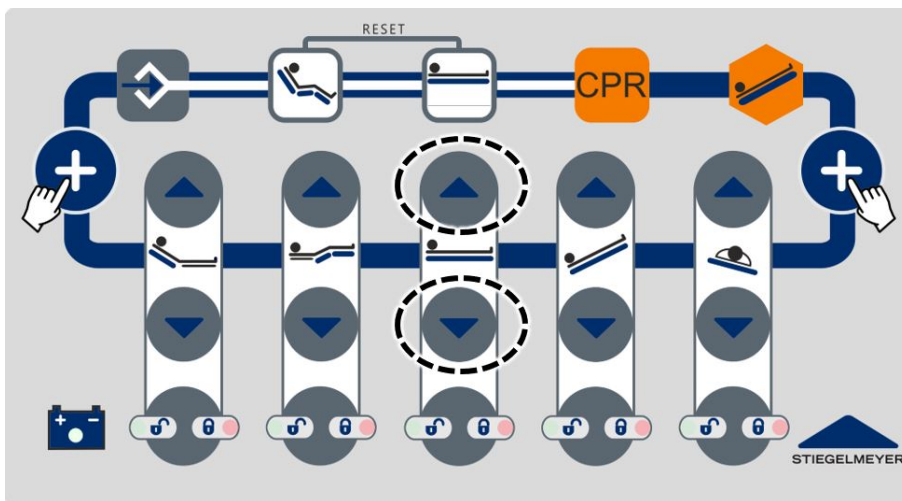
- 3 Press the UP or DOWN button. The under bed light is now switched on and an ON status is displayed.



- i** To switch the under bed light off, press the DOWN or UP button again (OFF status displayed).

If an OOB system is installed, the OOB system can be set so that the under bed light goes on automatically whenever the patient gets out of bed. (Please refer to the separate instruction manual for the Out-of-Bed (OOB) system).

9.13.3 On the control box (optional)



- 1 Press and hold both marked buttons for approximately 3 seconds until the switching status of the under bed light changes.

Repeat the procedure to change the switching status again.

9.14 “Easy Care” function

This function is ideal for carrying out efficient bed adjustments during everyday patient care. All bed adjustment functions that are useful for patient care are available on a single control level for quick selection - including any functions that may be locked for patients' use. When care tasks have been completed, the system automatically returns to the first level after 2 minutes. Alternatively, this can be switched over manually. Previously set function locks for individual adjustments are retained.

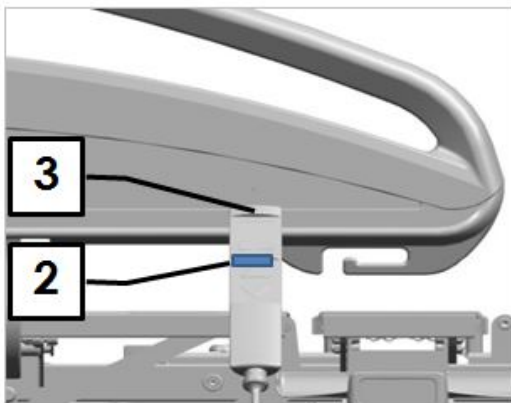
⚠ CAUTION

Risk of injury

Failure to heed this warning may result in injuries to patients due to unintentional activation of bed adjustments that may pose a risk, e.g. the Trendelenburg position!

- Only medical staff are authorised to operate the “Easy Care” function!
- Ensure that patients do not have access to the handset while the Easy Care function is activated, as all bed adjustments are unlocked for use.

9.14.1 Activation on LCD handset



- 1 Press and hold both toggle switches



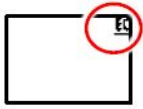
[2] at the same time, then hold the top end of the LCD handset [3] briefly (for about ½ second) against the orange magnetic unlocking key.



- 2 To indicate that the control level has been activated:

- a short tone is emitted,
- the backlit LCD display flashes continuously
- and the “Easy Care” display briefly appears

i The “Easy Care” control level can only be activated from the patient level!



While the " Easy Care" control level is activated, the "EC" logo also always appears in the top right-hand corner of the display

Deactivation

- Automatically: 2 minutes after the last key was pressed or
- Immediately: by briefly holding the handset sensor [3] against the magnet.

i The handset reverts to the last active adjustment function in the "Patient" control level. The function locks originally set in the "patient" control level are retained.

9.14.2 Activation on the control panel



1 Press and hold both toggle switches



additionally press button



2 To indicate that the control level has been activated:

- a short tone is emitted,
- the backlit LCD display flashes continuously
- and the "Easy Care" display briefly appears

i The " Easy Care" control level can only be activated from the patient level!



While the " Easy Care" control level is activated, the "EC" logo also always appears in the top right-hand corner of the display

Deactivation

- Automatically: 2 minutes after the last key was pressed or



- Immediately: by pressing the button again

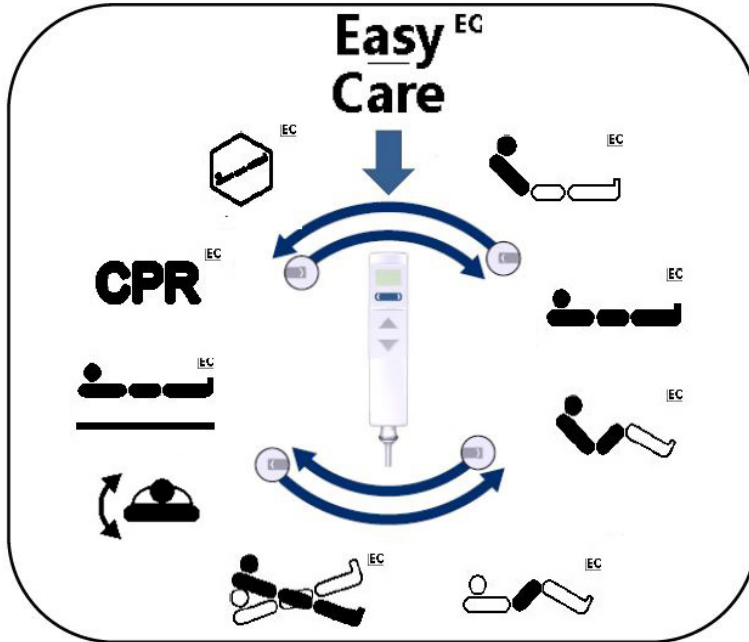












Image27: "Easy Care" control level for medical staff

Symbol	Explanation	Symbol	Explanation
	Backrest adjustment		Trendelenburg/reverse-Trendelenburg position adjustment function
	Mattress base height adjustment function		Normal position adjustment function(only in "Easy Care" control level)
	Auto contour adjustment function		Resuscitation position adjustment function
	Thigh rest adjustment function		Shock position (Trendelenburg position) adjustment function
	Lateral tilting adjustment function		

 For detailed descriptions of the individual functions, see chapter 9 [Use/routine](#) » [75](#).

9.15 Using safety sides

Safety sides provide suitable protection for patients against falling out of bed. They are not intended as a device to prevent the patient from intentionally leaving the bed.

WARNING

Risk of injury

Failure to heed this warning may result in physical injury due to the use of safety sides!

- Only use technically perfect, undamaged safety sides which engage securely!
- Before using the safety sides, assess and take into consideration the clinical condition and particular physical build of the patient:
- For example, if the patient is extremely confused or very restless, avoid using safety sides as far as possible and make use of alternative or additional safety measures such as restraint sheets, fall protection mats, setting the mattress base to the lowest position, etc.
- In the case of particularly small, frail patients it may be necessary to use an additional form of protection to reduce the size of the gaps between the safety sides. In this case, use protective cushions (accessories), posey belts, etc. (This is the only way to ensure effective protection and reduce the risk of the patient getting trapped or slipping through the gaps).
- Only use suitable mattresses (not too soft) complying with DIN 13014 with a volume weight of at least 40 kg/m³ and dimensions complying with the specifications in the instruction manual, to prevent endangering patients through trapping or suffocation.

⇒ The maximum permissible mattress height depends on the model and the position of the safety sides used. An effective safety side height of at least 22 cm above the non-occupied mattress must be guaranteed.

CAUTION

Risk of injury

Failure to heed this warning may result in physical injury if thicker special mattresses, such as anti-decubitus mattresses, are used (for prevention or therapy)! In this case an effective safety side height of at least 22 cm above the non-occupied mattress must still be guaranteed.

If this height (22 cm) is not provided, as a medical professional, it is your duty on your own responsibility to take any additional measures, or other measures you consider suitable, based on your own risk assessment in view of the clinical condition of the patient, and in view of the characteristics of the special mattress, such as additional safety systems for the patient, regular and more frequent monitoring of the patient or internal procedures for users. The patient's risk of falling can be reduced:

- The smaller and more settled the patient is
- The softer the mattress is (the patient sinks deeper into the mattress)

CAUTION

Risk of crushing

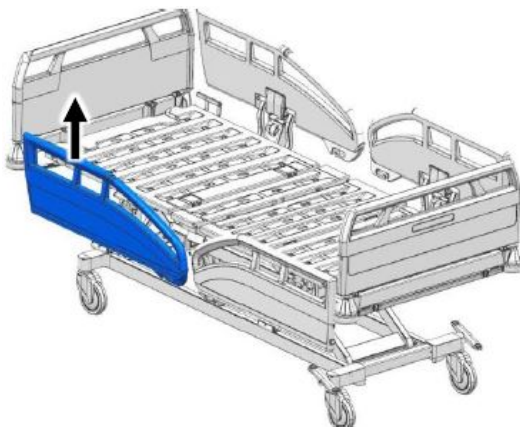
Failure to heed this warning may result in physical injuries!

- Lock the operating functions on the handset for the patient if the safety sides are raised and:
- The patient is unable to operate the bed safely,
- The patient is unable to free himself or herself from potentially dangerous situations,
- The patient is exposed to an increased risk of entrapment during backrest and thigh rest adjustments when the safety sides are raised,

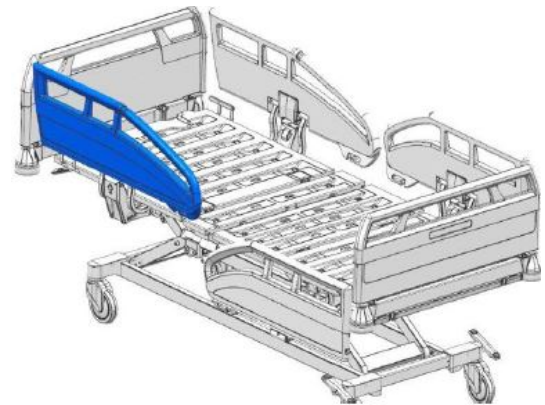
⇒ Otherwise there is a danger of the patient's limbs being crushed or trapped between the safety sides if the patient inadvertently activates the LCD handset. The effectiveness of the safety sides can also be reduced if any mattress base sections are raised to a high level.

9.15.1 Raising

The following section describes how to raise one of the Protega safety sides. The other safety sides are raised in exactly the same way.



- 1 Grasp the top of the safety side and pull it upwards until it audibly engages.



- 2 Check that the safety side is securely fixed by pressing down on it.

9.15.2 Lowering

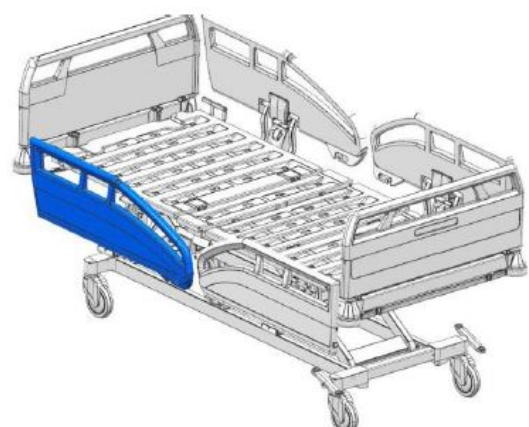
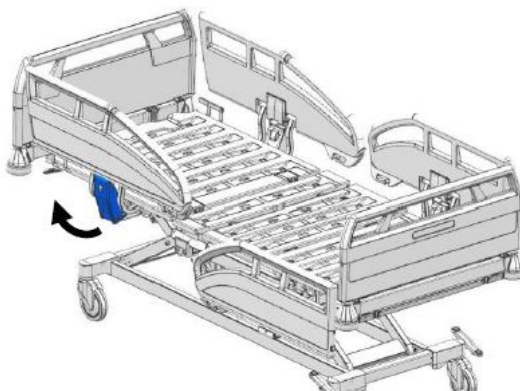
The following section describes how to lower one of the safety sides. The other safety sides are raised in exactly the same way.

CAUTION

Risk of entrapment and crushing

Failure to heed this warning may result in the patient's limbs being entrapped or crushed while lowering the safety sides!

- Before lowering the safety sides, ensure that the patient's limbs are not in the radius of movement of the safety side rails.



- 1 Reach into the release handle for the safety side and pull it upwards.
- 2 Let go of the release handle.
 - The safety side automatically moves into its lowered position.

10 Special functions

10.1 Setting shock recovery position


The bed moves to the shock position at maximum speed. The backrest and thigh rest move simultaneously to the horizontal base position.

WARNING

Risk of injury and material damage

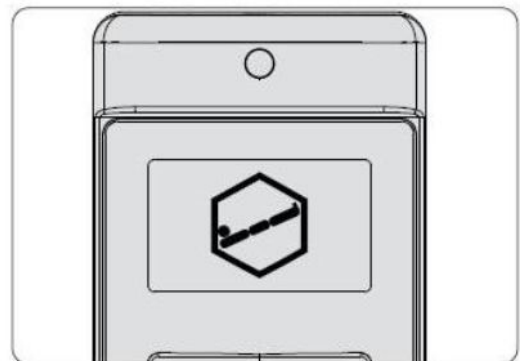
If this warning is disregarded, patients and other people could be exposed to danger and property could be damaged!

- The shock position function demands the user's utmost attention since various adjustments are activated simultaneously.

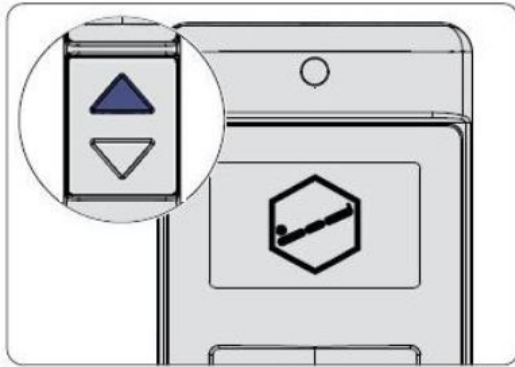
 This special function can always be activated, even when normal bed adjustment functions have been locked or the height adjustment has been electronically restricted.

For this purpose, the bed must be connected to the mains supply or a functional battery must be fitted (optional equipment).

10.1.1 On the LCD handset

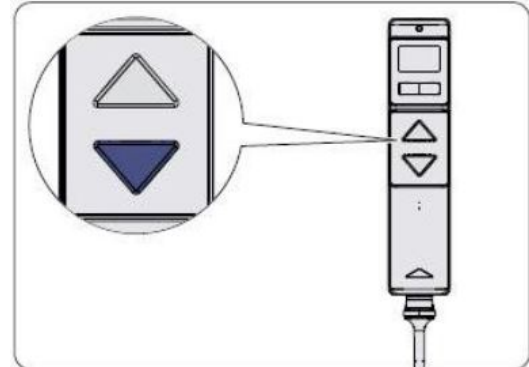


- 1 Hold the top end of the LCD handset briefly (for about ½ second) against the orange magnetic unlocking key to gain access to the staff control level on the LCD handset.



- 2 Next, select the shock position adjustment function using the toggle switch.

The quickest way to access this function is to press 1x left when the "CPR" function is displayed on the toggle switch.




- 3 Press the UP button until the bed is set to the shock position (Trendelenburg position).

- 4 To revert the bed to a horizontal position, press the DOWN button until the bed has reached the horizontal position and automatically stops.

10.1.2 On the control panel (outside)



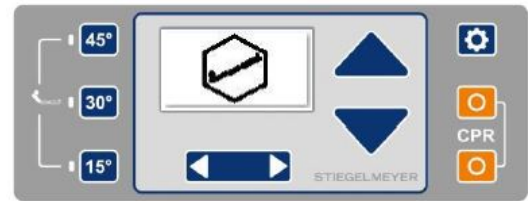
- 1  Press the "Settings" button. The CPR symbol appears on the display.

- 2 Select the shock position adjustment function using the toggle switch.

3



Press the UP button. Press the UP button until the bed is set to the shock position (Trendelenburg position).



To revert the bed to a horizontal position, press the DOWN button until the bed has reached the horizontal position.

10.1.3 On the control box



1 First press the unlock button and then the shock position button.

10.1.3.1 Reverting to horizontal bed position



1 First press the unlock button and then the Trendelenburg position DOWN button.

The mattress base automatically moves to the horizontal position at mid-height.

10.2 Setting CPR position

The CPR position allows all parts of the mattress base to be lowered quickly. It is also suitable for moving the bed to a specific low position for the patient to sleep at night (fall prevention).

The adjustment position is preset in the factory:

- Backrest and thigh rest horizontal, simultaneously
- Mattress base horizontal and into the lowest position

⚠ WARNING

Risk of injury and material damage

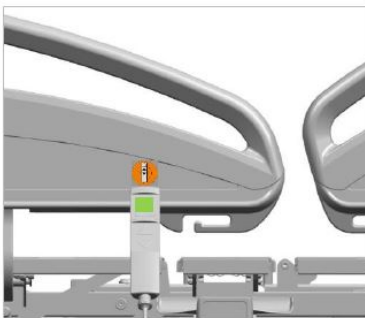
If this warning is disregarded, patients and other people could be exposed to danger and property could be damaged!

- The CPR function demands the user's utmost attention since various adjustments are activated simultaneously.

- i** This function can always be used, even when normal bed adjustment functions have been locked or the height adjustment has been electronically restricted.

This function requires the bed to be connected to a functioning power socket or a functional charged battery (optional equipment) in the bed.

10.2.1 On the LCD handset



- 1 Hold the top end of the LCD handset briefly (for about ½ second) against the orange magnetic unlocking key to gain access to the staff control level on the LCD handset.



- 2 The CPR adjustment function is pre-set.
- 3 Press the UP or DOWN button until the bed has reached the desired position.

10.2.2 On the control box



- 1 First press the unlock button and then the CPR button. The bed moves to the desired position at maximum speed.

10.2.3 On the control panel (outside)

There are two procedures that can be used to lower the bed to the CPR position.

Procedure 1



- 1 Press both CPR buttons at the same time until the bed has reached the desired position.

Procedure 2



- 1 Press the "Settings" button. The CPR symbol appears on the display.



- 2 Press the UP or DOWN button until the bed has reached the desired position.

10.3 Use in an emergency: Lowering the backrest

In an emergency, the backrest can be lowered by hand. The control lever [2] for emergency lowering is used for this purpose. The adjustment speed for lowering the backrest in an emergency depends on the mattress on the bed and the weight of the patient.

- i** This function is possible at any time - even without a battery - in the event of power supply outages or electrical drive system failures.

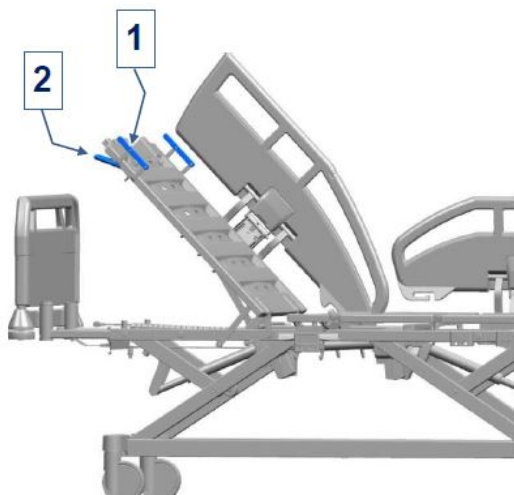
Automatic motion damping: For heavy patients, additional damping of the backrest motor is activated when the operating lever is released. This safety and comfort function is designed to lower the backrest more slowly to prevent falls and injuries.

⚠ WARNING

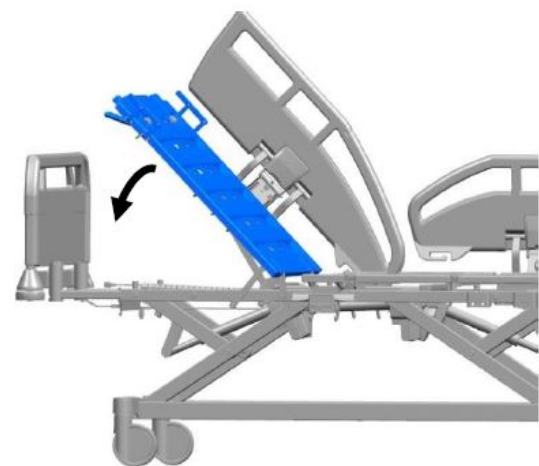
Risk of injury

If this warning is disregarded, patients and other people could be exposed to danger. A heavy patient can cause the backrest to drop suddenly when the red control lever [2] is activated.

- In such cases, carry out this procedure with particular caution.
- Always grip the backrest by the backrest handle [1] with one hand so as to “control” the adjustment.



- 1** Hold the backrest handle [1] with one hand and pull the control lever [2] upwards with the other hand.



- 2** Keep hold of the handle on the backrest [1] and carefully let the backrest down. The backrest will not be held in position until the control lever has been released.

- i** Before lowering the backrest, ensure that neither the patient's limbs nor your own are in the radius of movement of the backrest.

11 Special bed adaptations

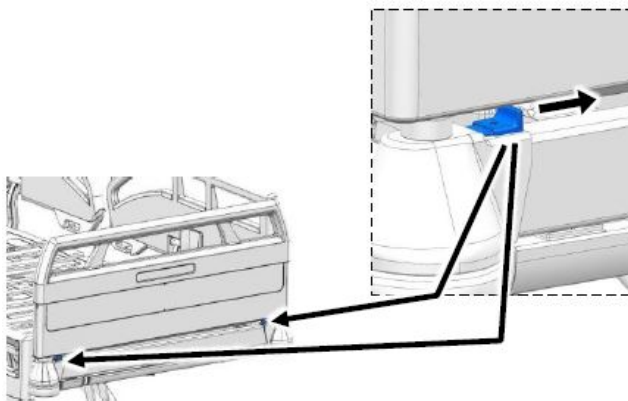
11.1 Removing and inserting headboard and footboard

The infill panel in the headboard and footboard can be removed if required. This may be necessary if the patient has to do rehabilitation exercises in bed, for example.

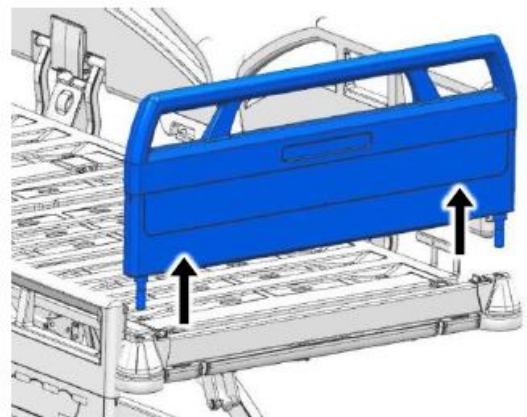
11.1.1 Remove

i Similar to illustration. Identical procedure.

1 Stand behind the headboard/footboard.



2 Slide the two locking levers towards the centre of the headboard or footboard.

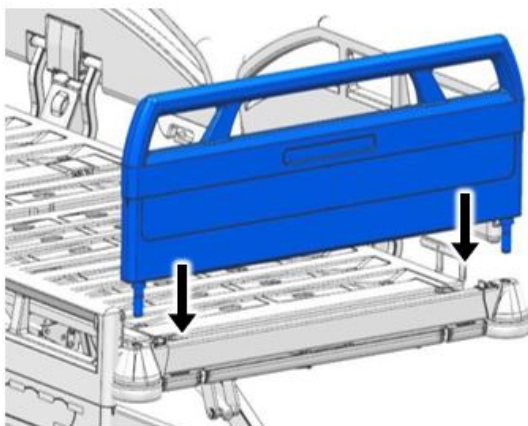


3 Hold the headboard or footboard with both hands and pull it upwards and out of the holders.

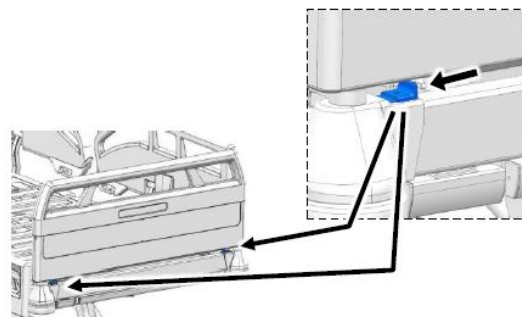
11.1.2 Insert

i Similar to illustration. Identical procedure.

1 Stand behind the headboard/footboard.



- 2** Hold the headboard or footboard with both hands and carefully pull it upwards and out of the holders.



- 3** Slide the two locking levers towards the edges of the headboard or footboard in order to fix the headboard or footboard in place.

11.2 Attaching posey belts

WARNING

Risk of injury

Failure to heed this warning may result in injury.

- Please observe the instruction manual and safety information provided by the manufacturer of the restraint systems before and while restraining a patient, in order to prevent the risk of serious injuries to the patient!
- Always thread the belts round the outer metal frame of the mattress base and not round the plastic handles attached to it.
- Attach the restraint system only to the locations on the hospital bed shown in the following illustration. This will ensure that the patient is restrained safely and is not exposed to danger.

The arrows in the following illustration indicate slots in the plastic mattress base (not applicable for plastic mattress bases with a 100 cm width) through which restraint system belts can be threaded.

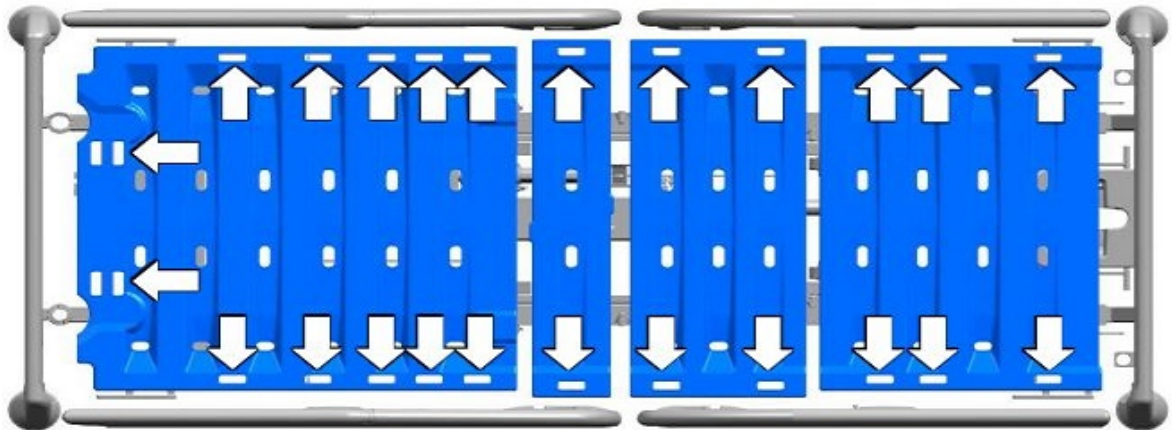


Image28: Attachment points for posey belts

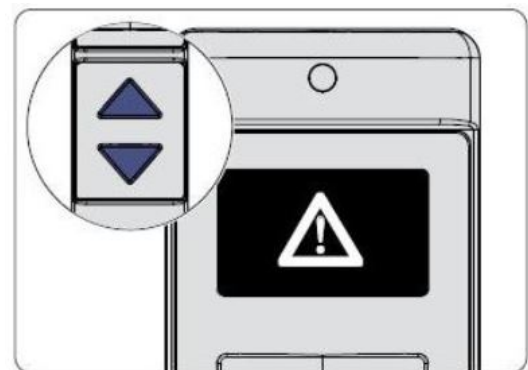
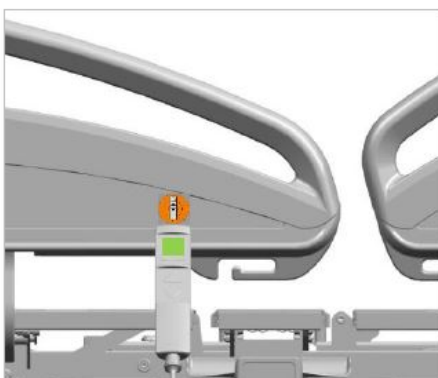
11.3 Restricting the maximum mattress base height

A pre-set maximum mattress base height cannot be exceeded in the daily care routine or by the patient. When the bed is raised, it only moves to this position and then stops. A maximum mattress base height can only be defined by service personnel or qualified medical staff who have been trained by the operator to do so.

- i** The mattress base must be horizontal before a restriction can be defined. An additional "LIMIT" indication on the display panel shows that a limit is active during adjustment.

11.3.1 On the LCD handset

- 1 Set the bed to the position that you wish to define as the maximum mattress base height.

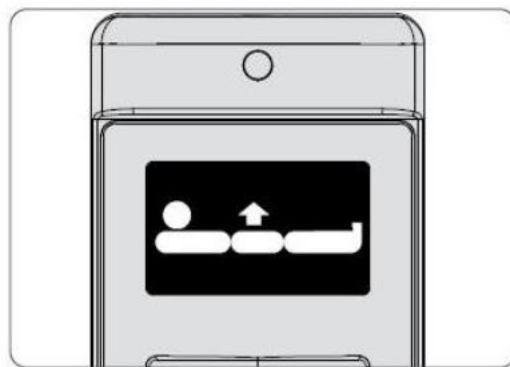


- 2** Press the UP and DOWN buttons simultaneously, and keep them pressed while you hold the top end of the handset briefly (for about ½ second) against the orange magnetic unlocking key.

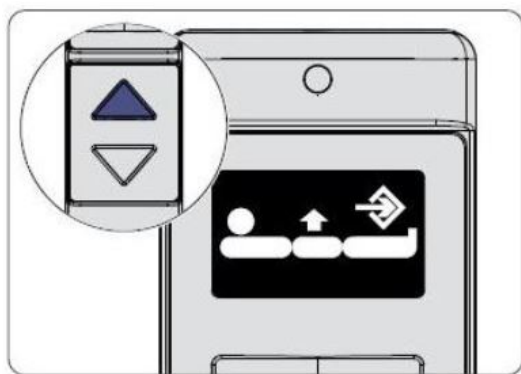


- 4** The OK ! shown on the display confirms the change to the technician control level. Let go of the UP and DOWN buttons.

- 3** Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.



- 5** Select the maximum mattress base height function by pressing the toggle switch.

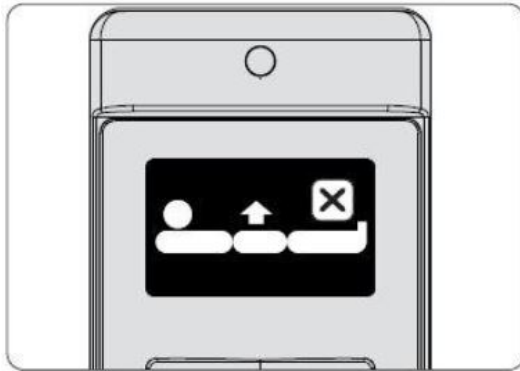


- 6** Press the UP button twice. After pressing the button for the first time, the symbol for the maximum mattress base height appears together with the "Save" symbol.



- 7** After pressing the button for the second time, the OK ! displayed indicates the successful pre-setting of the mattress base height restriction. The symbol for the maximum mattress base height is then displayed again.

11.3.1.1 Deleting the maximum mattress base height setting



- 1 Repeat steps 2-5, see [On the LCD handset » 131](#). Press the UP button. The maximum mattress base height symbol will appear on the display and the status message X will be displayed for the deleted function.



- 2 Press the DOWN button once. After pressing the button, the OK ! displayed indicates the successful deletion of the mattress base height restriction.

11.3.2 On the control panel (outside)



- 1 Press the UP and DOWN buttons simultaneously and keep them pressed, and at the same time press the "Settings" button briefly.



- 2 Keep the "Settings" button pressed for 5 seconds until the warning triangle symbol disappears and OK ! appears.
- 3 Proceed now as described in steps 4-7, see [On the LCD handset » 128](#).

11.3.2.1 Deleting the maximum mattress base height setting




- 1 Repeat steps 1 - 2 , see [On the control panel \(outside\)](#) » 130. The OK ! shown on the display confirms the change to the technician control level.



- 2 The maximum mattress base height symbol will appear on the display and the status message X will be displayed for the deleted function.
- 3 Press the DOWN button once. After pressing the button, the OK ! displayed indicates the successful deletion of the mattress base height restriction.

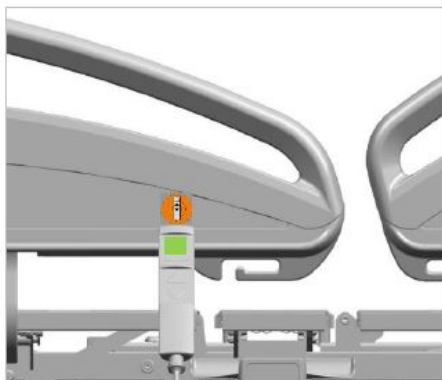
11.4 Restricting minimum mattress base height

A pre-set minimum mattress base height cannot be exceeded in the daily care routine or by the patient. When the bed is lowered, it only moves to this position and then stops. A minimum mattress base height must only be defined by technical staff or qualified medical staff who have been trained by the operator to do so.

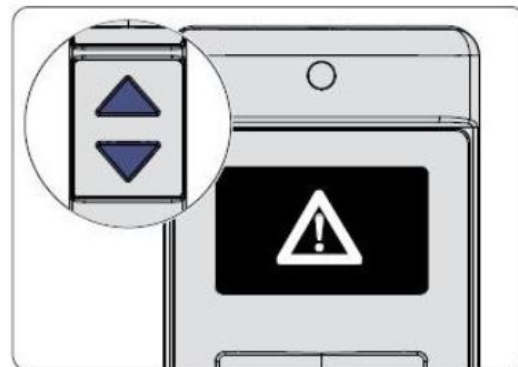
-  The mattress base must be horizontal before a restriction can be defined. An additional "LIMIT" indication on the display panel shows that a limit is active during adjustment.

11.4.1 On the LCD handset

- 1 Set the bed to the position that you wish to define as the minimum mattress base height.



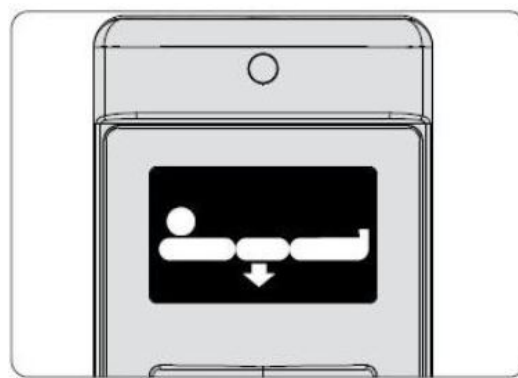
- 2** Press the UP and DOWN buttons simultaneously, and keep them pressed while you hold the top end of the handset briefly (for about ½ second) against the orange magnetic unlocking key.



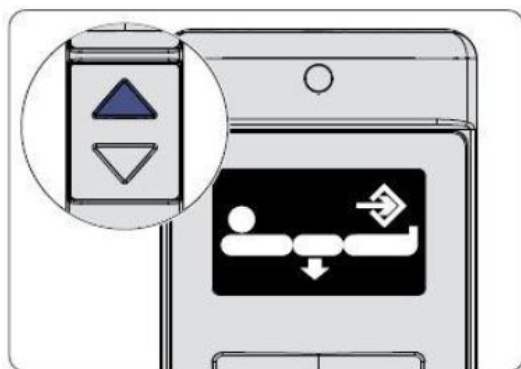
- 3** Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.



- 4** The OK ! shown on the display confirms the change to the technician control level. Let go of the UP and DOWN buttons.

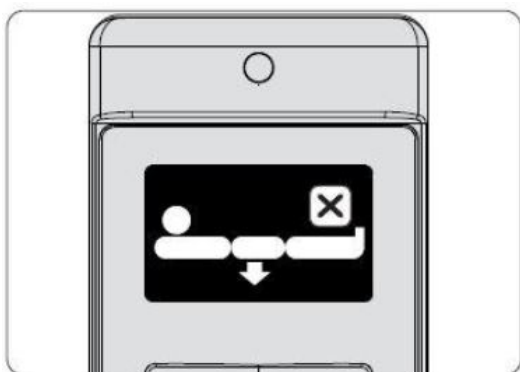


- 5** Select the minimum mattress height function by pressing the toggle switch.



- 6 Press the UP button twice. After pressing the button for the first time, the symbol for the minimum mattress base height appears.
- 7 After pressing the button for the second time, the OK ! displayed indicates the successful pre-setting of the mattress base height restriction. The symbol for the minimum mattress base height is then displayed again.

11.4.1.1 Deleting the minimum mattress base height setting



- 1 Repeat steps 2-5, see [On the LCD handset » 131](#). Press the UP button. The minimum mattress base height symbol will appear on the display and the status message X will be displayed for the deleted function.



- 2 Press the DOWN button once. After pressing the button, the OK ! displayed indicates the successful deletion of the mattress base height restriction.

11.4.2 On the control panel (outside)



- 1 Press the UP and DOWN buttons simultaneously and keep them pressed, and at the same time press the "Settings" button briefly.



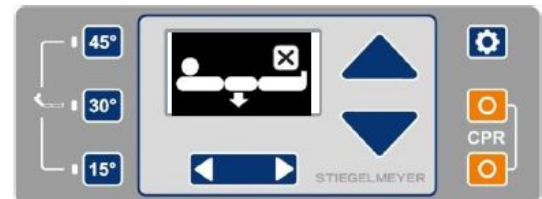
- 2 Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.

- 3 Proceed now as described in steps 4-7, see [On the LCD handset](#) » [131](#).

11.4.2.1 Deleting the minimum mattress base height setting



- 1 Repeat steps 1 - 2 , see [On the control panel \(outside\)](#) » [133](#). The OK ! shown on the display confirms the change to the technician control level.



- 2 The minimum mattress base height symbol will appear on the display and the status message X will be displayed for the deleted function.
- 3 Press the DOWN button once. After pressing the button, the OK ! displayed indicates the successful deletion of the mattress base height restriction.

11.5 Setting an intermediate backrest stopping position (optional)

As an option, when raising or lowering the backrest, the backrest stops at an intermediate position which is at an angle of approximately 30°. Press the UP or DOWN button again to continue raising or lowering the backrest beyond this intermediate stopping position.

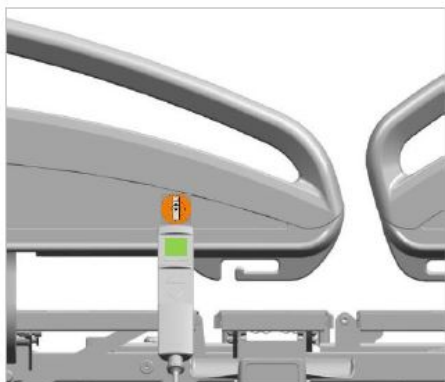
If this factory pre-setting does not meet your wishes, you can individually set this intermediate stopping position.

Furthermore, you can also switch this special function off when not in use without deleting the intermediate stopping position which is saved (see [Setting the backrest](#) » [85](#)).

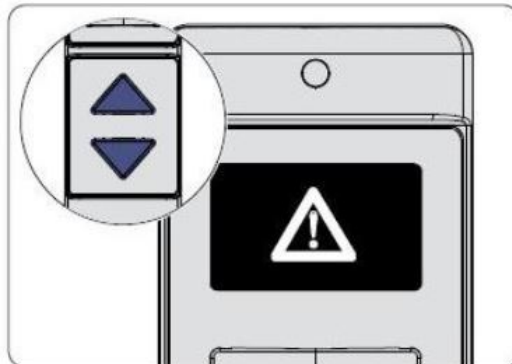
Defining an intermediate stopping position must only be done by technical staff or through qualified medical staff who have been trained by the operator to do so.

11.5.1 On the LCD handset

- 1 Set the backrest to the position that you wish to define as the intermediate stopping position.



- 2** Press the UP and DOWN buttons simultaneously, and keep them pressed while you hold the top end of the handset briefly (for about ½ second) against the orange magnetic unlocking key.



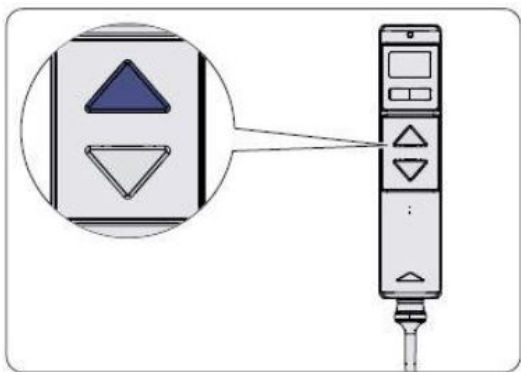
- 3** Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.



- 4** The OK ! shown on the display confirms the change to the technician control level. Let go of the UP and DOWN buttons.



- 5** Select the intermediate stopping position function for the backrest by pressing the toggle switch.



- 6** Press the UP button twice.



- 7** A display of OK ! and a beep acknowledge that an intermediate stopping position has been set.

sition has been successfully set. The symbol for the intermediate stopping position is then displayed again.

11.5.2 On the control panel (outside)



- 1 Press the UP and DOWN buttons simultaneously and keep them pressed, and at the same time press the "Settings" button briefly.

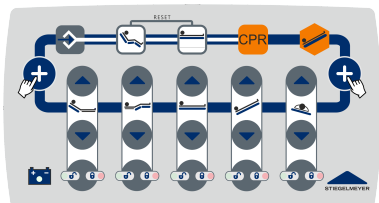


- 2 Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.
- 3 Proceed now as described in steps 4-7, see [On the LCD handset](#) » [134](#).

11.6 Adjusting the sitting position and the normal position

i Only possible when equipped with a control box in the linen holder.

The mattress base height and tilting angle are saved.



For safety reasons, the only tilted position that can be saved is the reverse-Trendelenburg position.

The positions of the backrest and thigh rest are not saved and remain unchanged.



This description applies for both the sitting position button and the normal



position button

1 Set the desired new position for the bed



3X



or

2 Press the **“Save”** button three times in a row, ...

3

... then immediately afterwards **only** press the desired position button.

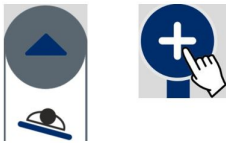
i As soon as the new position has been saved, a short signal tone sounds to confirm the change.

11.7 Setting the home position for the lateral tilt function

Adjustment of the home position is necessary if the lateral tilt drive does not stop automatically when the mattress base is horizontal.

i IMPORTANT: Place the bed on a level floor and place a spirit level on a level surface of the bed. The spirit level helps to achieve a horizontal position when creating the home position. This can then be saved as the home position.

11.7.1 On the control box



1 First press the unlock button and the UP or DOWN lateral tilting button and set the horizontal home position with the help of the spirit level.

or



2 Briefly press the "Save" button **3 times** in succession and then **1 x** the lateral tilt UP button once.

A beep is emitted: Drive M3 is now set to the home position.

11.7.2 On the control panel (outside)



- 1 Press the UP and DOWN buttons simultaneously and keep them pressed, and at the same time press the “Settings” button briefly.



- 2 Keep the “Settings” button pressed for 5 seconds until the warning triangle symbol in the display disappears.



- 3 The OK ! shown on the display confirms the change to the technician control level. Let go of the UP and DOWN buttons.



- 4 Select the lateral tilt home position function by pressing the toggle switch.

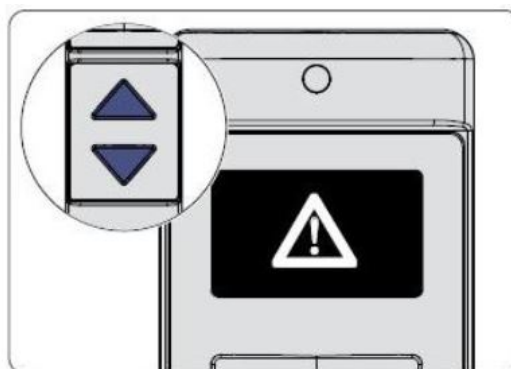
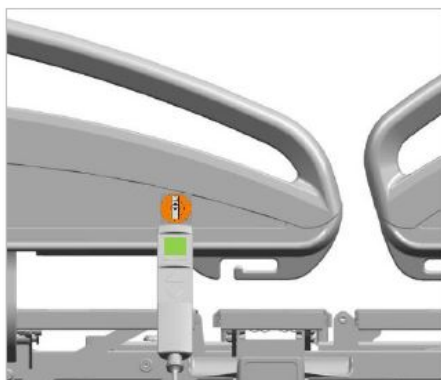
Press the UP or DOWN lateral tilt button and set the horizontal home position with the help of the spirit level.



- 5 Press the UP button twice. After pressing the button for the first time, the lateral tilt symbol appears together with the “Save” symbol.

- 6 After pressing the button for the second time, the OK ! displayed indicates the successful setting of the home position. The lateral tilt symbol is then displayed again.

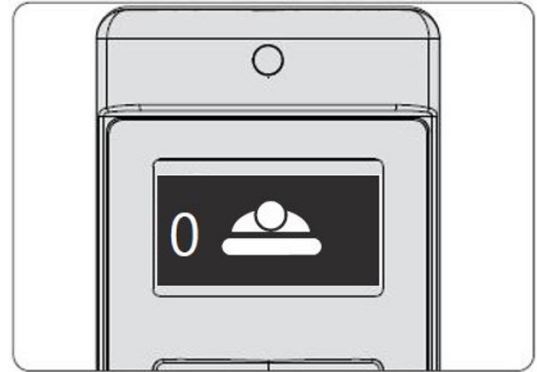
11.7.3 On the LCD handset (optional)



- 1 Press the UP and DOWN buttons simultaneously, and keep them pressed while you hold the top end of the handset briefly (for about ½ second) against the orange magnetic unlocking key.



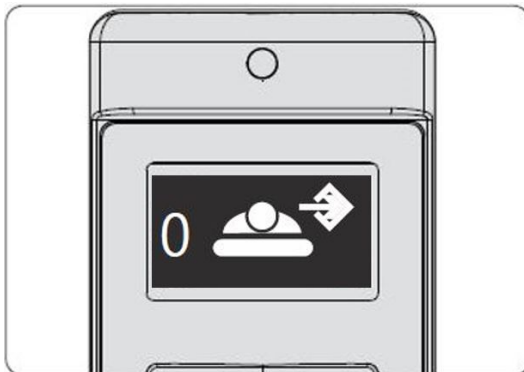
- 2 Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.



- 3 The OK ! shown on the display confirms the change to the technician control level. Let go of the UP and DOWN buttons.

- 4 Select the lateral tilt home position function by pressing the toggle switch.

Press the UP or DOWN lateral tilt button and set the horizontal home position with the help of the spirit level.



- 5 Press the UP button twice. After pressing the button for the first time, the lateral tilt symbol appears together with the "Save" symbol.

- 6 After pressing the button for the second time, the OK ! displayed indicates the successful setting of the home position. The lateral tilt symbol is then displayed again.

12 Cleaning and disinfection

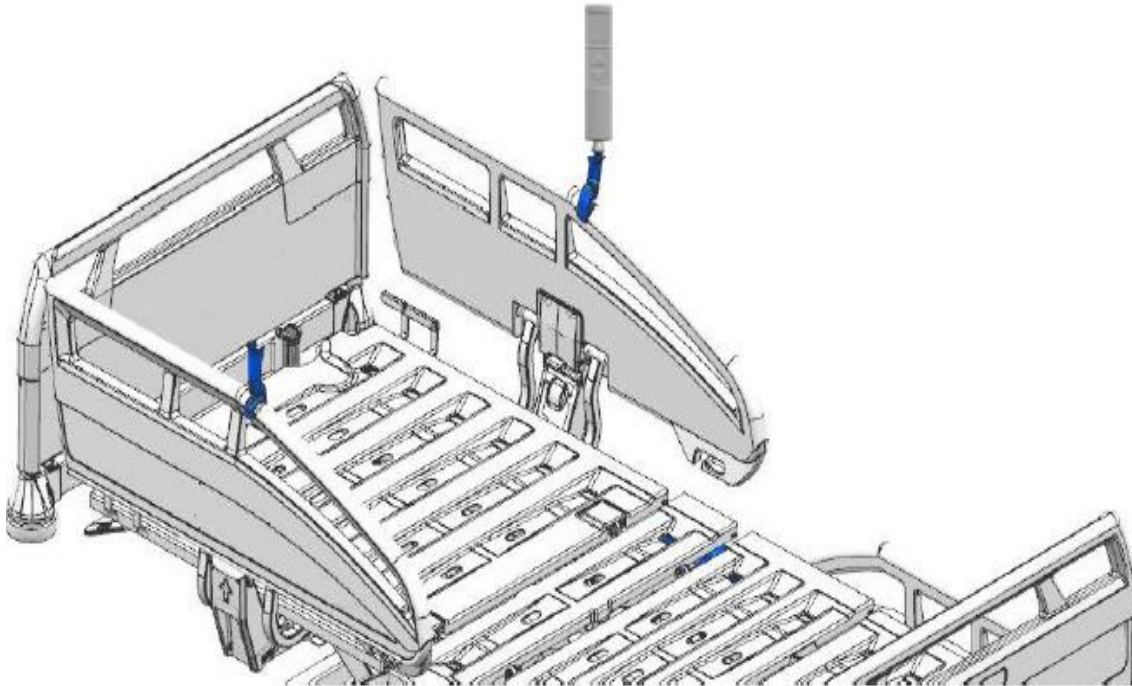
12.1 Safety information on cleaning and disinfection

Failure to follow this safety advice could result in considerable damage to the bed and the electrical components and lead to subsequent malfunctions!

12.1.1 Before starting cleaning

 Similar to illustration. Identical procedure.

- Ensure that all plugs for the drive system are connected as prescribed.
- Lock the electric adjustment functions.
- Hang or insert all handsets in the holders provided on the bed.
- Unplug the mains plug from the electrical socket.
- Store the mains plug so that it does not come into excessive contact with cleaning solutions.
- Ensure that none of the electrical components show any signs of external damage.



12.1.2 After cleaning

- Before operating the bed again, ensure that there is no residual moisture on the electrical contacts by drying or blowing on the power plug.
- If you suspect that water or cleaning solutions have penetrated into electrical components:
 - Unplug the bed immediately from the power socket and do not insert the power plug into the socket again,
 - Label the bed clearly as “OUT OF ORDER”,
 - Take it out of service immediately and report this to the operator without delay.

12.2 Manual cleaning

ATTENTION

Material damage

Failure to heed this warning may result in damage to the bed.

- Do not use scouring agents, abrasive cleaning agents or scouring pads. These products can damage the surface.
- Do not use organic solvents such as halogenated/aromatic hydrocarbons and ketones.
- Do not use acidic cleaning agents.
- It is essential to follow the manufacturer's dosage advice for cleaning agents and disinfectants to prevent damaging any plastic and metal surfaces!
- It is not permitted to clean the bed using a manually operated steel jet nozzle which is, for example, connected to a steam cleaner/high pressure cleaner. A minimum distance of 30 cm from the electrical components cannot be guaranteed in this case.
- For non-washable beds: Avoid direct contact of the bed with splash-water. Do not use a water hose or similar appliance to clean the bed.
- Ensure that no liquid residues remain on any parts of the bed after cleaning or disinfection. Otherwise the surfaces in these areas may become damaged in the long term.
- If, despite its excellent mechanical resistance, the coated surface is damaged by scratches or marks that permeate the entire coating, the affected areas should be resealed using a suitable repair substance to prevent moisture from penetrating. For further information, consult STIEGELMEYER or a specialist dealer of your choice.
- Disinfectants based on compounds that could potentially release chlorine may be corrosive for metals, synthetics, rubbers and other materials over longer contact periods or when concentrations are too high. Use these agents sparingly and only if expressly required.
- Do not use any type of UV light disinfection. As a result of this, plastic elements such as enclosures of electrical components and other bed parts could become damaged and result in hazards due to electrical faults or a deterioration in strength.
- Do not use any type of ozone disinfection. This could lead to the corrosion of metal surfaces and an unsightly visual appearance or irreparable damage to other components

Suitable cleaning and disinfection agents

For disinfection by wiping, most cleaning and disinfection agents usually used in hospitals or care facilities can be used, such as cold and hot water, detergents, alkaline solutions and alcohols.

These agents must not contain any substances that could change the surface structure or the adhesive properties of the plastic materials.

The choice of cleaning agents and disinfectants available on the market may change from time to time. Stieglmeyer therefore routinely tests the most commonly used materials for compatibility. The most up-to-date list of tested cleaning agents and disinfectants can be obtained on request.

Our German customer support:

Stieglmeyer GmbH & Co. KG
Ackerstraße 42, 32051 Herford, Germany
Phone: +49 (0) 5221 185 - 777
Fax: +49 (0) 5221 185 - 219
Email: service@stieglmeyer.com
Internet: www.stieglmeyer.com

Customers outside Germany can contact our distribution companies in their particular country if they have any questions. Contact details can be found on our website.

12.3 Machine cleaning

If this bed is suitable for machine washing in a decontamination facility, the chassis carries this sticker.



i Please note: Immediately after the washing process, the change in temperature may cause the display panel on control devices with an LCD display to fog up slightly. This is technically harmless, however, and does not constitute either a safety risk or a defect.

ATTENTION

Material damage

Failure to heed this warning may result in damage to property.

Our hospital beds designed for automated cleaning ensure a high level of safety and hygiene. Follow our instructions to ensure that they remain in perfect condition for a very long time. Our instructions are based on the guidelines of the “Working group for bed frame and trolley decontamination systems (AK-BWA)” and on product-specific requirements.

- Adjust the drives to the prescribed washing position: Mattress base elements flat; set the mattress base to at least 10° Trendelenburg position (see also [Setting the washing position](#) » 146).
- Before washing the bed, remove any accessories that are attached, unless they are suitable for machine washing.
- Please dispense the **concentrations** of decontamination products according to manufacturer specifications. Check that the specified pH values are respected (Bed Frame and Chassis Decontamination Systems Working Group - AK-BWA: pH 5-8).
- The **temperature** of all **spray water systems** used must only be such that beds do not heat up beyond the recommended maximum temperature of 70°C during reprocessing. **(70°C does not refer to the water temperature itself but to the maximum surface temperature of the item being washed!).**
- Several factors influence the automated reprocessing procedure – the configuration of washing and rinsing nozzles, their distance to our products as well as the quantity of water used. Therefore, the **maximum temperature** of the beds must be **checked** at regular intervals.
- **Note: We recommend using an infrared thermometer for contactless measuring.**
- The heating of the beds during processing must be sufficient to allow their internal heat to **dry** them with sufficient ventilation. Please ensure that the bed is completely dry before fitting it with a mattress, bed linen or a plastic foil covering.
- **Note: If, at the beginning of your shift at the washing system, you start by processing and letting dry 2 beds, you will have enough time to wash all other beds and simultaneously fit the dry beds with mattresses and bed linens.**
- After completing the washing procedure, the bed must cool down for an appropriate period of time (10 to 20 minutes) before it may be put into service again.
- Our products shall undergo maintenance after each interval of **25 wash cycles**. Please ensure that the wash cycle and maintenance are recorded and documented.
- Please validate and document the washing process in your establishment at regular intervals. Ensure that the indicated times, temperatures and chemical specifications are kept consistent during the washing, disinfection and drying steps. This will ensure that your beds will remain in good condition and will offer great hygienic results.

Warranty

If the user is able to prove the number of wash cycles per bed, regular maintenance after 25 cycles as well as compliance with the specifications and guidelines of the AK-BWA, Stiegemeyer guarantees that the washed material will remain in perfect condition. Stiegemeyer hospital beds designed for automated cleaning can be processed automatically considerably more often than is stipulated by the IEC 60-601-2-52 standard.

The proof of wash cycles, maintenance and washing parameters is required for the validity of the Stiegemeyer warranty.

 **Stiegemeyer offers professional support for organising and documenting all processes related to hospital beds.**

For more information, please contact our service centre:

Stiegemeyer GmbH & Co. KG

Ackerstraße 42, 32051 Herford, Germany

Phone: +49 (0) 5221 185 - 0

Fax: +49 (0) 5221 185 - 219

Email: service@stiegemeyer.com

Internet: www.stiegemeyer.com

Customers outside Germany can contact our distribution companies in their particular country if they have any questions. Contact details can be found on our website.

12.3.1 Setting the washing position



ATTENTION

Material damage

Failure to heed this warning may result in damage to property.

To ensure that cleaning fluids can drain off unhindered, the bed must not be washed in a horizontal or reverse-Trendelenburg position. The bed settings to be established as the washing position in the washing machine are:

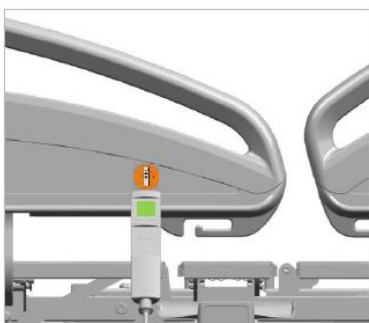
- Trendelenburg position (angle of tilt at least 10°),
- All rests set to the lowest position,
- All safety sides manually raised,

- The control unit for the patient scales, if available, is hung on the top rail of the footboard.
- The LCD handset must be placed in the holder on the upper rail of the safety side (see [Before starting cleaning](#) » [141](#)).

12.3.1.1 On the LCD handset

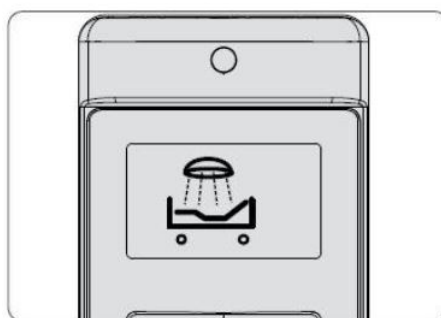
The factory default washing position can be set at the touch of a button:

- Mattress base in Trendelenburg position (10°)
- Backrest and thigh rest horizontal

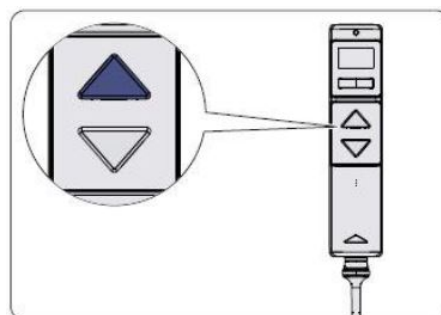


1 Activate the staff control level on the LCD handset by holding the top end of the LCD handset briefly (for about ½ second) against the orange magnetic unlocking key.

3 Press the DOWN or UP button. The bed moves into the washing position.



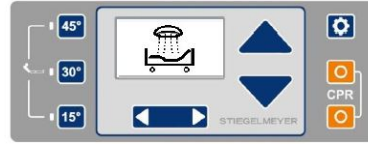
2 Next, select the washing position adjustment function using the toggle switch.



12.3.1.2 On the control panel (outside)



1 Press the “Settings” button. The CPR symbol appears on the display.



2 Select the washing position adjustment function using the toggle switch.

3 Press the DOWN or UP button. The bed moves into the washing position.

12.3.1.3 On the control box



1 First press the unlock button and then the Trendelenburg position button until the end position or the full extent of the desired position is reached.

12.3.2 Defining an alternative washing position

The height and angle of tilt of the bed in the factory default washing position can be adapted to the particular washing system used. The backrest and thigh rest always move into the lowest position.

ATTENTION

Material damage

Failure to heed this warning may result in damage to property!

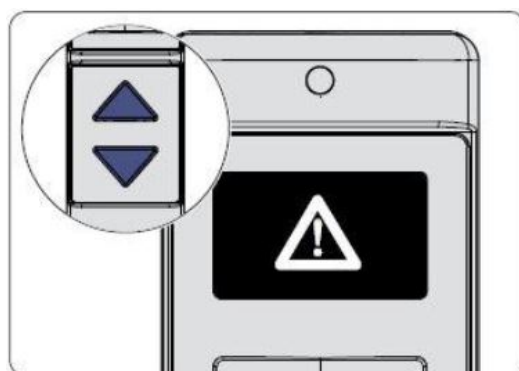
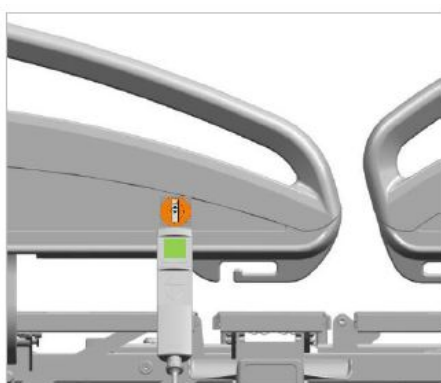
To ensure that cleaning fluids can drain off unhindered, the bed must not be washed in a horizontal or reverse-Trendelenburg position. The bed settings to be established as the washing position in the washing machine are:

- Trendelenburg position (angle of tilt at least 10°),
- All rests set to the lowest position,

- All safety sides manually raised.
- The LCD handset must be placed in the holder on the upper rail of the safety side (see [Before starting cleaning » 141](#)).

12.3.2.1 On the LCD handset

- 1 Set the bed to the position that you wish to define as the maximum mattress base height.



- 2 Press the UP and DOWN buttons simultaneously, and keep them pressed while you hold the top end of the handset briefly (for about ½ second) against the orange magnetic unlocking key.

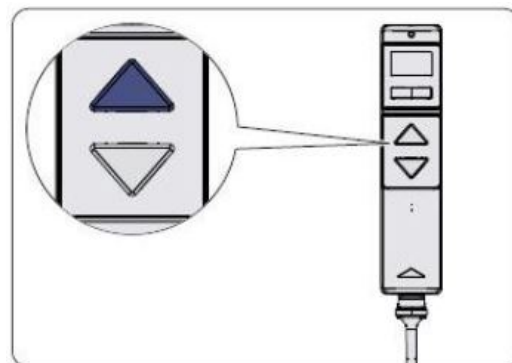
- 3 Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.



- 4 The OK! shown on the display confirms the change to the "technician" control level. Let go of the UP and DOWN buttons.

- 5 Select the washing position function by pressing the toggle switch. The washing position symbol will appear on the display.

- 6 Press the DOWN or UP button twice. An acoustic signal confirms that: The position set is now saved as the washing position.



- i** If you wish to define a different washing position, set the bed to the new washing position and then carry out the steps described. If you wish to delete the washing position, you can reset the control unit to the factory settings (see [Restoring factory settings » 71](#)), but note that by doing so, all settings will be reset to the factory default settings.

13 Maintenance

As a guideline, we recommend that annual maintenance is carried out by our qualified service engineers. Please consult our service centre.

If the bed is cleaned in an automatic washing system, it may be necessary to carry out inspections and servicing more frequently, depending on the intensity and number of washing procedures. We recommend in any case that the bed is serviced once a year. If cleaning is carried out frequently in an automatic washing system, servicing must be carried out at more frequent intervals and inspections and maintenance after every 25 cleaning cycles.

13.1 Service address

To order replacement parts in Germany and for any customer service requirements or other questions, please contact our service centre:

Stieglmeyer GmbH & Co. KG

Ackerstraße 42, D-32051 Herford, Germany

Phone: +49 (0) 5221 185 - 777

Fax: +49 (0) 5221 185 - 219

Email: service@stieglmeyer.com

Internet: www.stieglmeyer.com

Customers outside Germany can contact our distribution companies in their particular country if they have any questions. Contact details can be found on our website.

13.2 Safety instructions on maintenance



WARNING

Health risks and material damage

Failure to heed this warning may result in damage to health and property!

- Damage, defects and wear resulting from improper operation and after long-term use cannot be ruled out. These deficiencies can cause hazards if they are not recognised and corrected immediately.
- Before carrying out any maintenance work, please bear in mind that in order to make any adjustments, the bed must be connected to the mains supply. Remember to disconnect the power plug from the mains socket when maintenance work is finished. In addition, switch off all the drives using the control box.

- Set the bed to the desired position for maintenance, and unplug the mains cable from the socket before beginning any maintenance work.
- Only carry out maintenance work on unoccupied beds.
- If any damage or malfunction is suspected, take the bed out of service at once until it has been repaired or the damaged component has been replaced!
- This bed must not be modified without authorisation by the manufacturer.

13.2.1 Legal principles

In Europe: Operators of medical beds in Europe are obliged, in accordance with the new Medical Device Regulation (EU) 2017/745 (MDR) and existing relevant national laws/regulations, e.g. in Germany currently the

- German Medical Devices Operator Ordinance § 7 (Maintenance)
- DGUV 3 (Testing of Mobile Electrical Equipment in Commercial Use) of the German Employers' Liability Insurance Association

to preserve the safe operating condition of medical devices throughout their entire service life. This also includes regularly carrying out expert maintenance and safety checks.

i All "serious incidents" * relating to the device must be reported to the manufacturer and the competent authority of the member state in which the user and/or patient is established (in Germany: www.BfArM.de).

In other countries outside Germany or the EU, the relevant national regulations must be complied with!

i *: *Incident that had, could have had, or could have one of the following direct or indirect consequences: a) the death of a patient, user or other person, b) the temporary or permanent serious deterioration in the health of a patient, user or other person, c) presented a serious risk for public health, (source: MDR (Medical Device Regulation), Art. 2(65)).*

13.3 Recommended lubricants

Designation in Lubrication Instructions Table	Manufacturer/product	Stieglmeyer order number
A	Weicon: Allround Lubricant AL-W	190507 (400 ml spray can) 193231 (1000 ml spray can)

Designation in Lubrication Instructions Table	Manufacturer/product	Stieglmeyer order number
B	Klüber: Polylub Gly 801020199	203807 (400 ml cartridge)
C	InnoSelf: Mega Öl with PTFE	212871 (300 ml spray can)
D	Weicon: Biofluid	111926 (500 ml spray can)

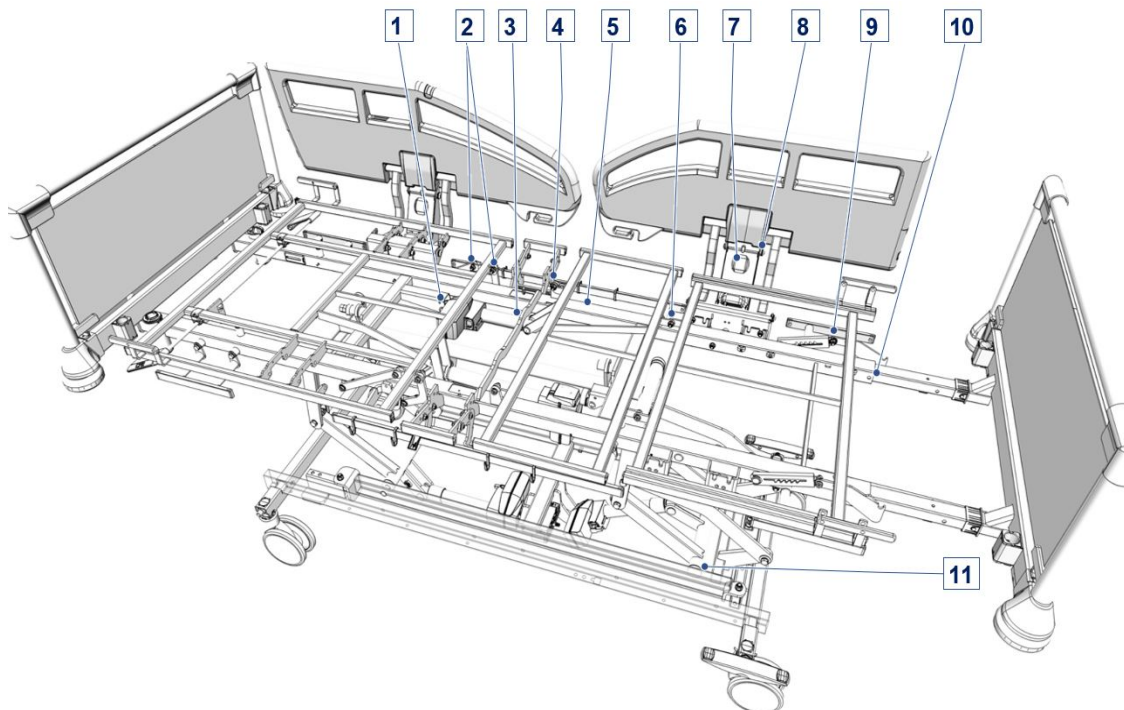
Tab.3: Lubricants

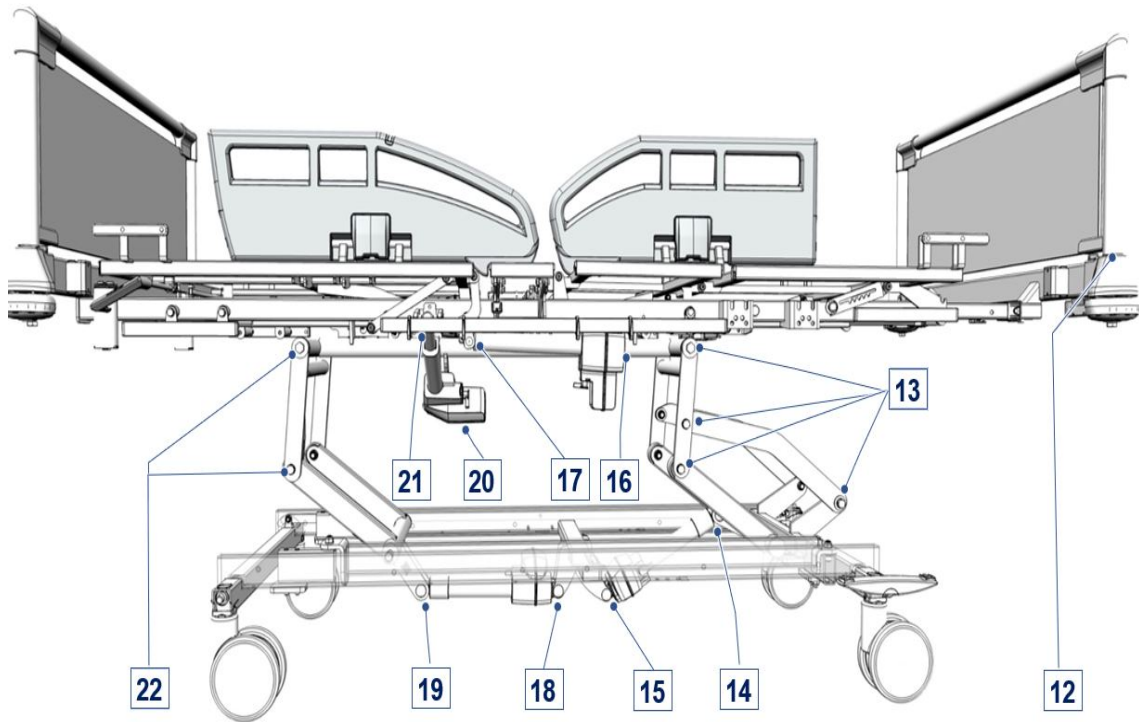
13.4 Recommended special varnishes

Colour	Description	Stieglmeyer order number
White	Varnish (500 g tin)	203804

Tab.4: Special varnishes

13.5 Servicing points





i This overview applies only for the lubrication that is necessary if the bed is cleaned in an automatic washing system.

Item	Description	Lubrication spots	Lubricant
1	Motor eye take-up, thigh rest motor	1	C
2	Pivot between backrest and mattress base frame handlebar strap	4	C
3	Lifting pipe take-up, thigh rest motor	1	C
4	Pivot between mattress base frame and thigh rest	2	C
5	Ball-bearings, mattress base frame (check support rails and/or support rail bearing screws for play - Important: Do not lubricate the rail and screws!)	4	A
6	Pivot between thigh rest and lower leg rest	2	C
7	Engagement of Protega safety sides	4	A
8	Pivot points for Protega safety sides	24	C
9	Pivot between lower leg rest and Rastomat	4	C

Item	Description	Lubrication spots	Lubricant
10	Bed extension guide (lubrication from inside through two holes lower down along the long sides of the bed)	4	D
11	Ball bearings, chassis	4	A
12	Sleeves on headboard/footboard	4	D
13	Chassis support and mattress frame crank (at the foot end)	8	C
14	Lifting pipe take-up, height adjustment motor (at the foot end)	1	C
15	Motor eye take-up, height adjustment motor (at the foot end)	1	C
16	Motor eye take-up, backrest motor	1	C
17	Lifting pipe take-up, backrest motor	1	C
18	Motor eye take-up, height adjustment motor (at the head end)	1	C
19	Lifting pipe take-up, height adjustment motor (at the head end)	1	C
20	Motor eye take-up, lateral tilting motor	1	C
21	Lifting pipe take-up, lateral tilting motor	1	C
22	Chassis support and mattress frame crank (at the head end)	4	C
23	Lubricate the lifting pipes of the electric adjustment motors and take them once through their entire adjustment travel (not visible in image)	5	B

13.6 Servicing plan

Components	Action	Interval	Information
All screw connections and/or metal safety caps	Check that they are firmly positioned; tighten and/or replace if necessary.	At least once a year	Use suitable tools.

Components	Action	Interval	Information
Connecting bolts on the removable headboard and footboard	Clean and slightly grease, if necessary.	At least once a year If machine washed, at least after every 25 washes .	Use resin-free and acid-free grease (e.g. grease C).
Pivot and friction bearings	Clean and lightly spray.	As necessary	Use resin-free and acid-free oil spray (e.g. lubricant A).
Bowden cable for CPR release of backrest	Check that they are correctly adjusted and routed.	At least once a year	There must be no sharp bends or kinks!
Li-ion batteries	Check whether charged and ready for use.	Recommendation: Replace rechargeable batteries after 8 years (wear and tear part).	Connect bed to mains supply.
Earth wires	Check for tears and tightness of screws.	At least once a year	Replace torn or damaged earth wires.
Damaged coating	Touch up any damaged areas of the coating:	As necessary	Matching colour special-purpose paint (mechanically stable corrosion protection).
O-rings ("sealing rings") on the electric plugs	Always check whether they are present and/or damaged.	Whenever plugs have been disconnected (e.g. after replacing drives or during troubleshooting)	The plugs of new components are always fitted with a new O-ring.

- i** Replace O-rings with original LINAK O-rings only. Check the corresponding recesses in the plug for dirt or damage, and lubricate with Vaseline, before reinserting the plugs.

We recommend supplementing the specified maintenance work with appropriate preventive measures to further enhance trouble-free and fail-safe operation of the bed. A guide to preventive replacement of potentially relevant components can be obtained from the following address:

Stieglmeyer GmbH & Co. KG

Ackerstraße 42, D-32051 Herford, Germany

Phone: +49 (0) 5221 185 - 777

Fax: +49 (0) 5221 185 - 219

Email: service@stiegemeyer.com

13.6.1 Periodic inspection

For electric beds we recommend, as a guideline, that an annual DGUV 3 inspection be carried out by our qualified customer service staff, with verification of adherence to the 2% error rate (see also the DGUV 3 accident prevention regulations: § 5, Table 1B).

CAUTION

Risk of injury and material damage

Failure to heed this warning may result in injuries and damage to property due to improper inspection!

- In accordance with DIN EN 62353 (VDE 0751-1) (Association of German Electrical Engineers – Regulation 0751-1), the inspection results may only be evaluated and documented by experts (a qualified electrician or, with the use of suitable measuring devices, a person instructed in electrical matters as defined by DGUV 3) with the corresponding knowledge, training and experience. Such persons must also attest that they have knowledge of the beds that are to be inspected and of the relevant regulations (medical products act, operator ordinance, safety regulations, instruction manuals, etc.).

Proceed in the following order when testing according to EN 62353 (VDE 0751-1):

1. Visual inspection
2. Electrical measurement
3. Functional check

CAUTION

Risk of injury and material damage

Failure to heed this warning may result in injuries and damage to property!

- If any safety-relevant damage or malfunction is suspected during testing in accordance with DIN EN 62353 (VDE 0751-1), take the bed out of service at once until it has been repaired or the damaged components have been replaced! A repeat inspection must be carried out in accordance with the test sheet to determine whether the damage or malfunction has been rectified. Only then have the requirements for continued operation been met.

An inspection sheet template for testing in accordance with DIN EN 62353 (VDE 0751-1) is given in [Inspection report](#) » [198](#).

14 Replacement of electrical components

14.1 Safety instructions

WARNING

Risk of injury

Failure to heed this warning may result in injury due to electric shock!

- Any work and/or repairs to the electrical equipment may only be carried out by Stiegelmeier service engineers, the actuator manufacturer or qualified and authorised electricians in compliance with all relevant VDE and safety regulations!
- On no account should the user attempt to rectify malfunctions in the electrical system!
- Before commencing any work on electrical equipment, always unplug the mains cable from the electrical socket!

WARNING

Risk of injury

Failure to heed this warning may result in physical injury due to crushing!


- The bed must be in the home position (with the mattress base horizontal) in order to remove the control unit and the drives.
- Before removing drives, secure the affected adjustable bed elements against unintentional falling (e.g. using suitable support stands).


WARNING


Risk of injury

Failure to heed this warning may result in physical injury due to faulty maintenance!


- The components (control unit, drives, control box, control panel, LCD handset) of the electrical actuator system are maintenance-free and must not be opened. If a malfunction occurs, the relevant component must be replaced in its entirety!
- When replacing individual components, make sure that the plugs have undamaged O-rings (for sealing) and are pushed into the control unit as far as they will go. This is the only way to ensure proper sealing and faultless operation.
- Ensure the polarity is correct when inserting plugs and do not apply excessive force if the plug does not fit. The plugs have a groove and therefore only fit into the corresponding connection sockets with one polarity.
- Do not wrongly connect the motor connections at the control unit. This can lead to malfunctions or even result in mechanical damage to the drives due to the system not switching off at the end position.
- After replacing the control units and/or the attached drives for adjusting the mattress base height, always initialise the control unit (= re-align the electronic path measurement for these drives). This sets a new reference point in the control unit for correctly measuring the path and avoids faults or damage to the lifting mechanism.

 The plugs for the components are connected to the appropriate control unit. To prevent the plugs from being inadvertently disconnected, they are secured with a locking device. This device can be carefully lifted off using a screwdriver if necessary.

 The control unit sockets should be lightly greased inside with Vaseline. The plugs can then be inserted more easily and the O-rings provide a better seal.

 The locking device must always be properly refastened.

14.2 Replacing the battery (Li-ion)

 For safety reasons, only the complete battery units can be exchanged.

Their housings are fully welded and cannot be opened.

Spare parts can be obtained from Stiegemeyer.

CAUTION

Risk of injury

Failure to heed this warning may result in physical injury due to crushing!

- For safe and easy installation, move the mattress base and the backrest to the highest position.


WARNING

Risk of injury and material damage

Failure to heed this warning may result in physical injury and material damage!

When using Li-ion batteries (type BA21), please observe the special safety precautions for storage, operation and shipping which this technology always requires:

- Do not short-circuit batteries, do not expose them to high temperatures (no direct sunlight, do not burn) and do not damage them mechanically.
- Stop using the battery immediately if it emits an unusual smell, feels hot, changes colour or shape, shows signs of damage or corrosion, or appears abnormal in any other way.
- The battery housings are welded and cannot be opened - the battery cells contained in them and the corresponding charging electronics cannot be repaired and must always be replaced in their entirety with original parts.
- Batteries with a damaged housing/open connecting socket can release liquid and must be replaced immediately.
- Store Li-ion batteries in their original protective transport packaging and away from other combustible materials.
- When shipping batteries/beds equipped with these batteries, please observe the special requirements of international transport law concerning dangerous goods, based on the UN classifications of the relevant safety data sheet for the battery (UN3480) and the bed equipped with it (UN3481).
- The safety data sheet of the battery is enclosed with every replacement delivery. The safety data sheets for the bed and the battery are also available on request from our service centre.

 In order to reconnect the electrical components correctly after replacement, it is essential to observe the information in the chapter [Electrical connection diagram](#) » [52](#).

1. Engage the brakes on the bed and for easy installation, move the mattress base to the highest position.
2. Raise the backrest to the fully upright position, and remove the plastic cover located on the mattress base frame.
Note: The battery will be visible once the plastic cover has been removed.
3. Unplug the mains plug from the electrical socket.
4. Open the cover of PJ2. To do so, unlock both snap-in catches from the cover lock (use a fine flat-head screwdriver to do so).
5. Disconnect the battery plug from the PJ2.
6. **Note:** The battery is attached under PJ2 with a snap system.
Press the lower clip of the battery upwards and push the battery a few centimetres away from the clip and towards the head end until the battery can be removed downwards.
7. Replace the battery with an identical one.
8. Attach the battery (carry out installation in reverse order).
9. Test the electric adjustments to ensure they work correctly!
10. Charge the batteries. To do so, connect the bed to the mains supply for at least 10 -12 hours. Only then is the battery ready for emergency use without restriction.


14.3 Mains cable replacement

1. For easy installation, move the mattress base to the highest position.
2. Raise the backrest to the fully upright position, and remove the plastic cover located on the mattress base frame.
Note: The control unit will be visible once the plastic cover has been removed.
3. Unplug the mains plug from the electrical socket.
4. At the head end of the mattress base frame, release the strain relief for the mains cable.
5. Remove the mains cable from the holders.
Disconnect the earth connection (see [Connect the earth conductor » 163](#)).
6. Unplug the IEC connector from the control unit. To do this, use a screwdriver to slightly press the red securing clips together on the IEC connector.
Note: To reach the lower securing hooks, first of all remove the control unit from its holder. Press the lower clip of the control unit upwards and push the battery a few centimetres away from the clip and towards the head end until the battery can be removed downwards.
7. Plug the new IEC connector into the control unit.

8. The red securing clips prevent the plug from being unintentionally disconnected from the control unit!
9. Attach the control unit back onto its holder and make sure it is locked in place.
10. Reconnect the earth connection (see [Connect the earth conductor](#) » 163).
11. Replace the mains cable in the holders.
12. Screw the mains cable strain relief back in place.
13. Plug the mains cable into an electrical socket. The control unit LED must light up green.
14. Carry out an electrical measurement of the protective earth conductor!
15. Test the electric adjustments to ensure they work correctly!

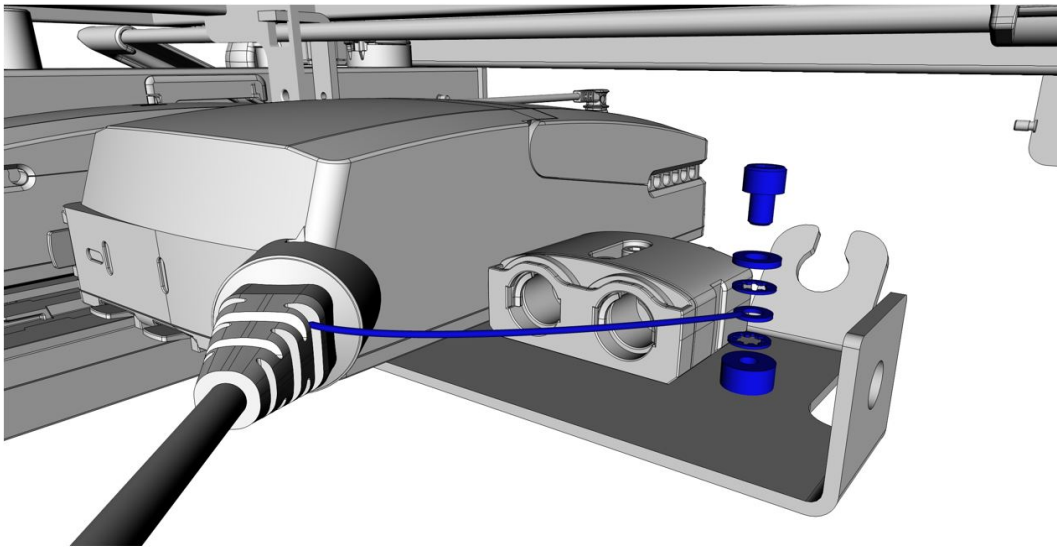
14.4 Connect the earth conductor

The control unit has a mains cable with a protective earth conductor. The earth conductor is connected to the mattress base frame. After replacing the mains cable, this connection must be re-established and an electrical protective earth conductor measurement must be carried out to test its effectiveness.

-  Not all metal parts of the bed are earthed, as all electrical components always have double or reinforced electrical insulation and all motors and operating devices operate with a non-hazardous protective low voltage.

Proceed as follows:

1. Insert the protective earth conductor, serrated washers (serrations towards the mattress base frame) and plain washer onto the threaded grounding point screw in the order shown.
2. Tighten the screw in the threaded sleeve [C] on the mattress base frame (torque: 1.5 Nm).



14.5 Replace the LCD handset

i In order to reconnect the electrical components correctly after replacement, it is essential to observe the information in the chapter [Electrical connection diagram](#) » [52](#).

1. If possible, raise the bed to its highest position to make work easier.
2. Unplug the mains plug from the electrical socket.
3. Trace the handset cable to distributor box MJB5 and cut the cable tie at the MJB5.
4. Open the locking clip of the MJB5 by engaging both snap-in catches of its cover lock. Please use a 4 mm Allen key.
5. Disconnect the LCD handset plug from the control unit.
6. Insert the new LCD handset plug into the open socket as far as it will go. Make sure that the plug is correctly aligned (plug groove aligned with the protrusion in the socket).
7. Make sure that the O-ring on the plug is not damaged. This O-ring ensures that the plug is tightly sealed.
8. Secure the cables on the MJB5 with the locking clip. The locking clip must engage.
9. Connect all cables on the MJB5 with a cable tie as before.
10. When routing the LCD handset cable, ensure that it cannot be damaged by any moving parts of the bed.
11. Programming the LCD handset, see [Programming the LCD handset](#) » [171](#).
12. Test the electric adjustments to ensure they work correctly!

14.6 Replacing the control panel

1. Unplug the mains plug from the electrical socket.
Note: In order to close the gap, the integrated control panel has a plastic locking device fitted from the inside (above the control panel).
2. First of all, remove the locking device from the gap using a screwdriver. The locking device can be disposed of since the control panel is supplied with a new one!
3. Loosen the 2 screws with a long Philips screwdriver.
The two screws can be disposed of since the control panel is supplied with new screws!
4. From the inside of the bed, press the integrated control panel out and remove it together with its cable.
Note: The cable is provided with a cable lock!
5. Press the cable lock together and unplug the cable from the control panel.
6. Install the new control panel in reverse order.
Note: Make sure that the new locking device and the new screws are fitted.
7. Programming the control panel, see [Teaching the integrated control panel \(outside\) » 173](#).

14.7 Replace the control box

i In order to reconnect the electrical components correctly after replacement, it is essential to observe the information in the chapter [Electrical connection diagram » 52](#).

1. Unplug the mains plug from the electrical socket.
2. Remove the retaining ring on the connection socket on the control box and unplug the OpenBus[®] connector.
3. Replace the control box with a new one. Insert the OpenBus[®] plug back into the open socket as far as it will go. Make sure that the plug is correctly aligned (plug groove aligned with the protrusion in the socket) and that the O-ring on the plug is not damaged. This ring ensures that the plug is tightly sealed.
4. Re-attach the retaining ring. Programme the control box, see [RESET: Acknowledge faults on LCD handset/control panel » 180](#).
5. Test the electric adjustments to ensure they work correctly!

14.8 Replace the control unit

i In order to reconnect the electrical components correctly after replacement, it is essential to observe the information in the chapter [Electrical connection diagram](#) » [52](#).

1. Engage the brakes on the bed and for easy installation, move the mattress base to the highest position.
2. Raise the backrest to the fully upright position, and open up the plastic cover located on the mattress base frame.
Note: The battery will be visible once the plastic cover has been opened up.
3. Open the cover by pressing both securing clips [8] in with a screwdriver and lift the cover flap up until it engages in an upright position; this also unlocks all plug connections.
4. To avoid problems with assignment when re-reconnecting, mark all motor connectors with the corresponding socket numbers attached to the control unit.
5. Pull all plugs straight out. A certain amount of force is required due to the integrated O-ring seals.
6. Release the terminals of the control from the locking fitting on the bed: To do so, use your fingers to press down on the protruding snap-in catch located on the centre front of the housing near to the power input and slide the control unit off.
7. Unplug the IEC connector from the control unit. To do this, use a screwdriver to slightly press the red securing hooks together on the IEC connector. The earthing conductor can remain connected to the bed frame.
8. Plug the power plug into the new control unit. Make sure that the red securing clip of the power plug fits and engages correctly. This prevents the plug from being accidentally pulled out.
9. Reconnect the previously disconnected plugs. Take particular care to ensure the groove on the handset plug is in the correct position in relation to its counterpart in the socket.
10. Clip the leads back into the appropriate places in the control unit housing and close the cover again. Make sure that the cover engages to securely lock the plug connections.
11. Plug the mains cable into an electrical socket. The control unit LED [9] must light up green.
12. Perform a new initialisation of the control; see [Initialising the control](#) » [166](#).
13. Test the electric adjustments to ensure they work correctly!

14.9 Initialising the control

This is necessary after installing a new control or when replacing one or both lifting drives of the mattress base height adjustment.

This involves assigning the path impulses of the lifting drives to a reference point by means of a reference run.

ATTENTION

Risk of malfunctions

Failure to heed this warning may result in a malfunction!

- The initialisation procedure must only be carried out by technical personnel (technician control level on the LCD handset).

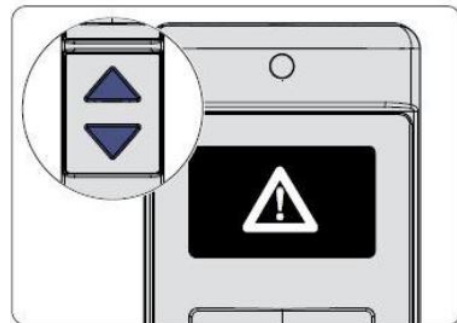
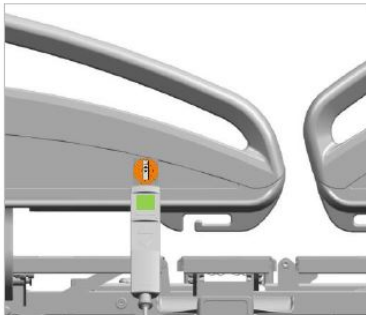
Depending on the control devices available, an initialisation is possible in different ways:

14.9.1 On the LCD handset

1



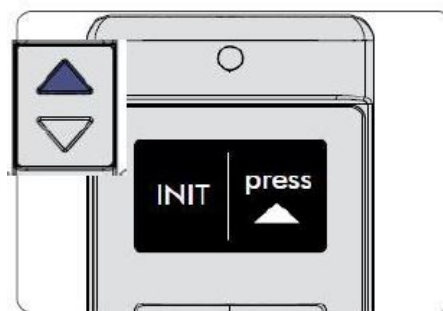
Plug the mains cable from the control into the electric socket. If "INIT" appears immediately, go to step 5. Otherwise continue with step 2.



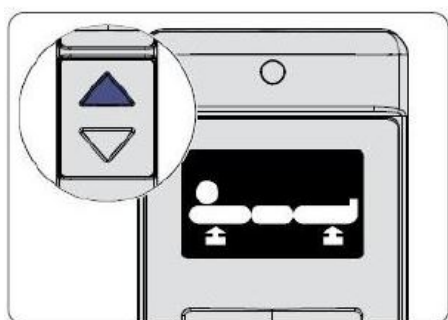
- 2 Press the UP and DOWN buttons simultaneously and at the same time hold the top end of the LCD handset briefly (for about ½ second) against the magnetic unlocking key.
- 3 Keep both the UP and DOWN buttons pressed for a further 5 seconds while the flashing warning triangle symbol and then OK is displayed!



- 4 Press the toggle left button once to change the display to the next image INIT (step 5).

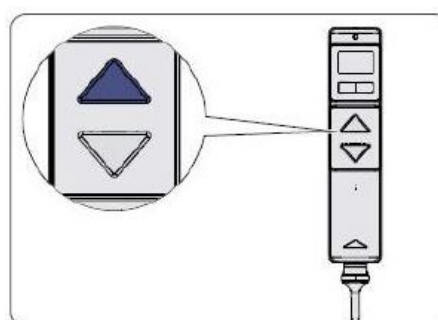


- 5 Select the initialisation function by pressing the UP button.



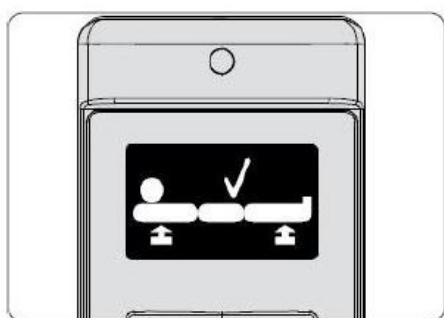
- 6 Press the UP button.

The height adjustment drive symbol will appear on the display.



- 7 Press the UP button until the bed is raised to its full extent. A signal tone will sound during the adjustment procedure.

Note: Do not release the button while the bed is moving, otherwise the process will not finish correctly!



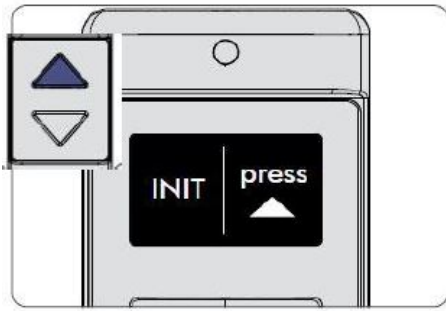
- 8 As soon as the bed is in its highest position, the Lift Drive OK symbol appears.

(If this symbol does not appear, this means the control was already successfully initialised once before).

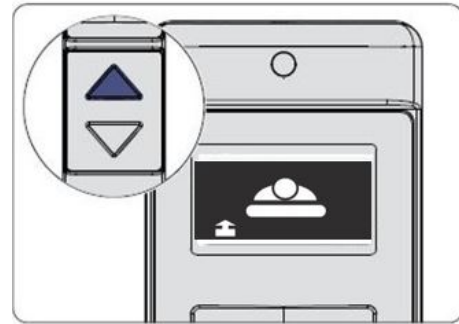


- 9 Press the UP button on the LCD handset.

The lateral tilting drive symbol will appear on the display.

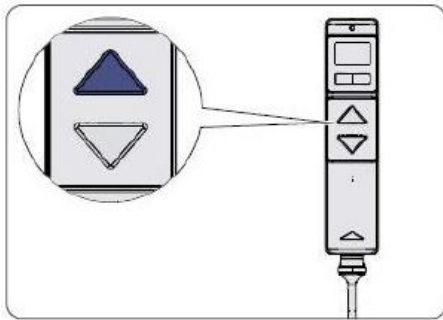


- 10** Select the initialisation function by pressing the UP button.



- 11** Press the UP button on the LCD handset.

The lateral tilting drive symbol will appear on the display.



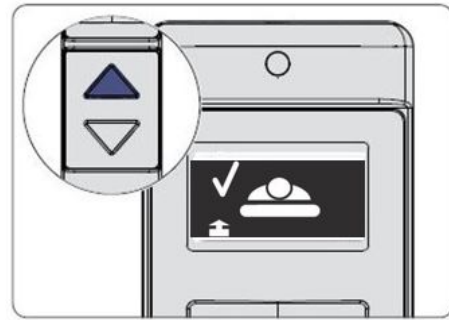
- 12** Press and hold the UP button.

The bed moves to the lateral tilting position and then back into the horizontal position.

During the adjustment procedure, a signal tone indicates that a reference run is being carried out.

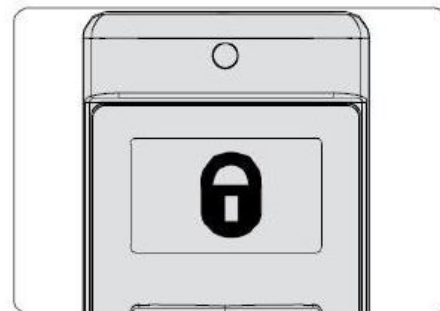
Note: Do not release the button while the bed is moving, otherwise the process will not finish correctly!

- 14** The padlock symbol appears on the display. You can now unlock the functions you wish to release for the patient, see chapter [Locking/unlocking electric adjustment functions](#) » [80](#).



- 13** As soon as the bed is in the horizontal position again, the Lateral tilting-OK symbol appears.

(If this symbol does not appear, this means the control was already successfully initialised once before).



15 Now, perform these steps on every available control unit:

Chapter [Programming the LCD handset](#) » 171 and/or chapter [Teaching the integrated control panel \(outside\)](#) » 173, and chapter [RESET: Acknowledge faults on control box](#) » 187. [RE-SET: Acknowledge faults on control box](#) » 187)

14.9.2 On the control panel (outside)



1 Press the UP and DOWN buttons simultaneously and keep them pressed, and at the same time press the “Settings” button briefly.

2 Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.

3 Proceed now as described in steps 4-9, see [On the LCD handset](#) » 167.

14.9.3 On the control box



1

Press both RESET buttons at the same time and keep them pressed.

2

A signal tone will sound. The reset is successfully completed once the signal tone has stopped.

3

Let go of the buttons; a pulsating beeping sound can then be heard for 5 seconds.

During these 5 seconds:



4

First press the unlock button and then the height adjustment UP button until the bed is raised to its full extent.

A signal tone will sound during the adjustment procedure.

Attention: Do not release the button while the bed is moving, otherwise the process will not finish correctly!



5

First press the unlock button and then the Lateral tilting UP button until the bed is moved to the Lateral tilting position and then back to the horizontal position.

During the adjustment procedure, a signal tone indicates that a reference run is being carried out.

Attention: Do not release the button while the bed is moving, otherwise the process will not finish correctly!

- Initialisation is completed.
- All adjustment options are initially locked.

You can now unlock the functions you wish to release for the patient, see chapter [Locking/unlocking electric adjustment functions](#) » 80.

6 Now, perform these steps on every available control unit:

Chapter [Programming the LCD handset](#) » 171 and/or chapter [Teaching the integrated control panel \(outside\)](#) » 173 and chapter [RESET: Acknowledge faults on control box](#) » 187.[RESET: Acknowledge faults on control box](#) » 187)

14.10 Programming the LCD handset

It is necessary to programme the LCD handset in the following cases:

- If you are connecting a new or different handset to the existing control,

During the programming procedure, the LCD handset recognises the range of functions of the control and is adapted accordingly. The LCD handset will not work unless it has been programmed!

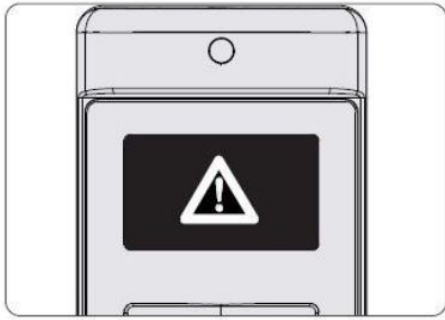


ATTENTION

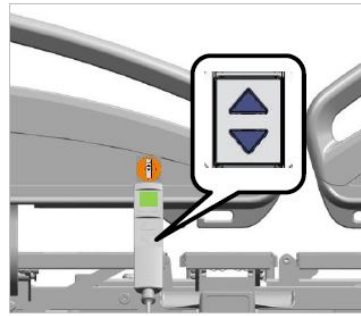
Risk of malfunctions

Failure to heed this warning may result in a malfunction.

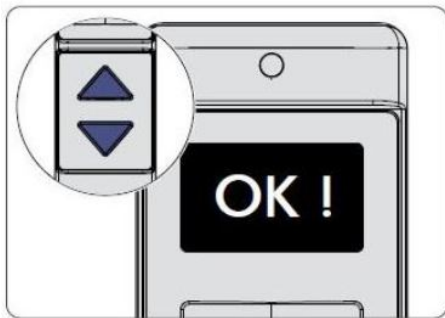
- The LCD handset must only be programmed by technical staff or qualified medical staff who have been trained by the operator to do so.



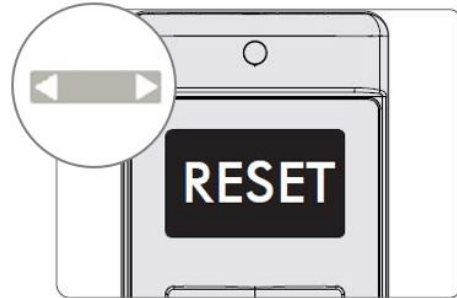
1 The warning triangle symbol is displayed on the LCD handset. All adjustment options are locked.



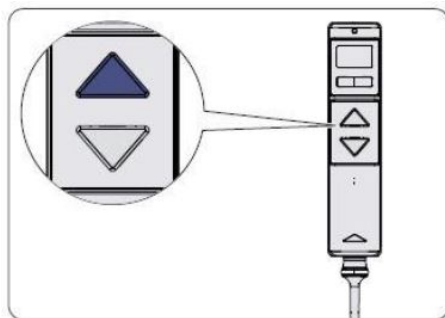
2 Press the UP and DOWN buttons simultaneously and at the same time hold the top end of the LCD handset briefly (for about ½ second) against the orange magnetic unlocking key.



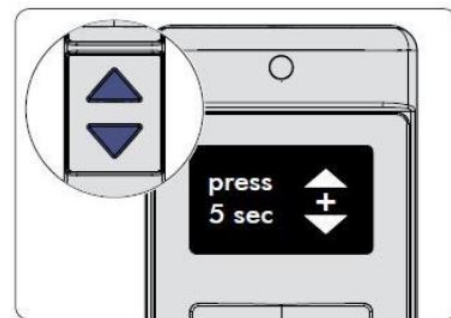
3 Keep both the UP and DOWN buttons pressed for a further 5 seconds until OK ! is displayed.



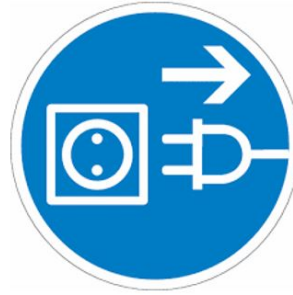
4 Select the RESET function by pressing the toggle switch.



5 Press the UP button to confirm that you wish to select the RESET function and to continue the procedure. The display changes.

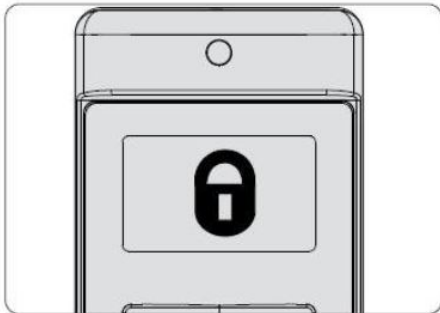


6 Press the UP and DOWN buttons at the same time for 5 seconds.



7 The display changes again to the RESET symbol. Keep both buttons pressed until the display changes from RESET to OK!

8 Unplug the bed from the power socket for about 30 seconds and then plug it in again.



9 The padlock symbol is displayed. **The RESET is now successfully completed.** You can now unlock the functions you wish to release for the patient, see chapter [Locking/unlocking electric adjustment functions](#) » 80.

14.11 Teaching the integrated control panel (outside)

Teaching the integrated control panel is necessary in the following cases:

- If you are connecting a new or different control panel to the existing control.

During the teaching procedure, the control panel recognises the range of functions of the control and is adapted accordingly. Control panels (1x pro safety side) will not work unless they have been taught-in! The teaching procedure is carried out on the outside of the control panel. The integrated (inside) control panel is taught-in automatically.

ATTENTION

Risk of malfunctions

Failure to heed this warning may result in a malfunction.

- The control panel must only be taught-in by service personnel or qualified medical personnel who have been trained by the operator to do so.

Option 1 (only if this is the first control unit to be registered)



- 1 The warning triangle symbol will appear on the display. All adjustment options are locked.
- 2 Keep both the UP and DOWN buttons pressed for a further 2 seconds approximately until OK ! is displayed.



- 3 Proceed now as described in steps 4-9, see [Programming the LCD handset](#) » 171.

If this does not work, use option 2:



- 1 The warning triangle symbol will appear on the display. All adjustment options are locked.
- 2 Press the UP and DOWN buttons simultaneously and keep them pressed, and at the same time press the "Settings" button briefly.




- 3 Keep both the UP and DOWN buttons pressed for a further 5 seconds until OK ! is displayed.
- 4 Proceed now as described in steps 4-9, see [Programming the LCD handset](#) » 171.

15 Troubleshooting

15.1 Faults and their rectification

Problem	Possible causes	Rectification
LCD handset/drive system not working	Mains cable not plugged in	Plug mains cable in; mains power LED must light up (green) on the control unit
	No power supply to mains socket	Check socket and fuse box socket
	Plug not inserted properly	Check plug connections
	Drives are locked	Unlock the functions
	LCD handset, mains cable or control unit is defective	Inform your operator about any necessary repairs
LCD handset/foot pedal not functioning, adjustments are enabled	LCD handset faulty	Replace the LCD handset
	Foot pedal has not been separately enabled	Unlock the foot pedal Inform your operator to arrange for the necessary repairs
Battery-powered operation not possible	Battery discharged	Connect the bed to the mains supply for approx. 10-12 hours
	Battery not inserted properly	Check the plug/cable routing
	There is no rechargeable battery	Retrofit a battery
Only when equipped with Li-ion battery: no battery charge indicator/no charge when connected to mains power and or when battery empty	Completely empty battery is carefully prepared for a new charge	<p>Leave the bed connected to the mains for up to 12 hours until charging starts and the battery charge indicator lights up</p> <p>Then leave the bed connected to the mains for a further 10-12 hours until charging is complete</p>

Problem	Possible causes	Rectification
Constant signal tone sounds during adjustment	Battery capacity depleted	Connect bed to the mains supply to recharge the battery as soon as possible
Operation only possible for a short time despite sufficiently charged battery	End of battery life reached	Exchange the control unit; inform your operator about any necessary repairs
Operation is not possible despite proper power supply	Control unit has shut down temporarily due to overheating	Observe max. duty cycle: Intermittent duty 2 min ON/18 min OFF Let control unit cool down for about 20 minutes, then test it again
	Control unit defective	Exchange the control unit; inform your operator about any necessary repairs
Manual CPR release of backrest is not possible	Bowden cables are too loose or not attached	Readjust at the release lever or secure them
	Bowden cable is kinked	Insert new Bowden cables; inform your operator about any necessary repairs
Integrated lower leg rest extension does not work	Plastic bracket holders are broken	Inform Stiegemeyer's service centre; integrated lower leg rest needs to be replaced
Mains control lamp in control unit does not light up	No power supply to socket	Use an electric socket that is working properly
	Mains cable damaged	Replace the mains cable
	Fuses in control unit defective	Exchange the control unit; inform your operator about any necessary repairs
Drive runs for a brief time only, then stops; can then only be activated in the opposite direction.	Drive overloaded	Remove the overload (briefly operate drive in the opposite direction), then retest
	One or more motors are not connected	Connect all motors



Problem	Possible causes	Rectification
<p>Control unit not working: Display screen</p>  <p>If available: Locking LEDs flashing on control box.</p>	<p>There is a problem with the control unit. For safety reasons, all functions are locked.</p>	<p>Troubleshooting</p> <p>→ chapter Fault message on LCD handset/control panel (outside) » 178 to Fault messages on control box » 185), then: RESET control unit: preferably via control box (→ chapter RESET: Acknowledge faults on control box » 187) ; alternatively also via LCD handset/control panel (→ chapter RESET: Acknowledge faults on LCD handset/control panel » 180) If they occur again: Have drive system checked. Inform your operator</p>
<p>Control unit not working: Mains indicator light in the control unit is on No display indications No LED indications on any control unit</p>	<p>OpenBus® power supply short-circuit in the cables on the bed for operating devices/signal switches/sensors:</p> <p>Cable squeezed/tightly stretched?</p> <p>Short-circuit in plugs due to highly stretched cables?</p>	<p>Disconnect OpenBus® plug connections systematically one after the other until a message appears again on the display/LED: The cable/component of the last disconnected plug connection was defective → replace</p> <p>Then check the function of the entire system: in case of further malfunctions/fault messages, continue troubleshooting (→ chapter Fault message on LCD handset/control panel (outside) » 178 up to RESET: Acknowledge faults on control box » 187.</p>
<p>Height adjustment and tilting do not work; signal tone sounds during adjustment</p>	<p>Control unit has “forgotten” the drive positions</p> <p>Drives are overloaded, e.g. due to patient airlock use</p>	<p>Initialising the control unit (→ chapter Initialising the control » 166)</p> <p>Troubleshoot and resolve, see:</p> <p>→ chapter Fault message on LCD handset/control panel (outside) » 178 to Fault messages on control box » 185),</p>


Problem	Possible causes	Rectification
		then: RESET control unit: preferably via control box (→ chapter RESET: Acknowledge faults on control box » 187) ; alternatively also via LCD handset/control panel (→ chapter RESET: Acknowledge faults on LCD handset/control panel » 180) If they occur again: Have drive system checked. Inform your operator





Tab.5: Faults and their rectification

15.2 Fault message on LCD handset/control panel (outside)

Faults in the adjustment drives and the control units are indicated on the display.

Display screen	Type of fault	Solution
	<p>General fault indication on the display.</p> <p>Adjustment drive cannot be activated.</p> <p>A signal tone sounds when a button is pressed.</p>	<ol style="list-style-type: none"> 1. Start the first step A or B of the RESET procedure to display the exact fault according to the troubleshooting guide (→ chapter RESET: Acknowledge faults on LCD handset/control panel » 180) 2. Resolve the fault according to the troubleshooting guide 3. Conduct the entire RESET process completely to acknowledge the fault (→ chapter RESET: Acknowledge faults on LCD handset/control panel » 180)
	<p>Malfunction in external data bus (OpenBus®): of connected control units/bus junction boxes (MJB). Most likely causes:</p> <ol style="list-style-type: none"> 1. Malfunction of a handset/control unit (e.g. jammed button, broken cable/short-circuit) 	<p>Systematic troubleshooting:</p> <ol style="list-style-type: none"> 1. Identify + replace defective LCD handset/control unit (→ chapter Replace the LCD handset » 164); Replacing the control panel » 165+ perform RESET with the replaced LCD handset/control panel (→ chapter RESET: Acknowledge faults on LCD handset/control panel » 180)

Display screen	Type of fault	Solution
	<ol style="list-style-type: none"> Unintended extended activation of a button (e.g. through sitting/lying on handset, solid objects on the linen holder) Loose connection/moisture ingress in an OpenBus® plug connection (MJB; control unit; under bed light) 	<p>set/control panel » 180)RESET: Acknowledge faults on LCD handset/control panel » 180; RESET: Acknowledge faults on control box » 187. Next, disconnect the bed from the mains power supply for about 30 seconds and then reconnect it.</p> <ol style="list-style-type: none"> Find and eliminate cause of extended activation of button + perform RESET on control unit (→ chapter RESET: Acknowledge faults on LCD handset/control panel » 180; RESET: Acknowledge faults on control box » 187) Check all internal plug connections/components; replace defective parts: <ul style="list-style-type: none"> O-seal ring present/correctly inserted? Plug fully inserted as far as it will go and secured against loosening with retaining clips engaged? <p>+ perform RESET on control unit (→ chapter Fault message on LCD handset/control panel (outside) » 178; RESET: Acknowledge faults on control box » 187)</p>
	Internal control fault (very rare)	Replace control → chapter Replace the control unit » 166
	Height adjustment fault (drive at head end)	<ol style="list-style-type: none"> Replace cable/check or replace plug + perform RESET on control unit (→ chapter RESET: Acknowledge faults on LCD handset/control panel » 180; RESET: Acknowledge faults on control box » 187) + initialisation (→ chapter Initialising the control » 166) If error still persists: Replace motor + perform RESET on control unit (→ chapter RESET: Acknowl-
	Height adjustment fault (drive at foot end)	<ol style="list-style-type: none"> Replace cable/check or replace plug + perform RESET on control unit (→ chapter RESET: Acknowledge faults on LCD handset/control panel » 180; RESET: Acknowledge faults on control box » 187) + initialisation (→ chapter Initialising the control » 166) If error still persists: Replace motor + perform RESET on control unit (→ chapter RESET: Acknowl-

Display screen	Type of fault	Solution
	Height adjustment fault in both drives	edge faults on LCD handset/control panel » 180 ; RESET: Acknowledge faults on control box » 187 + initialisation (→ chapter Initialising the control » 166)
	Backrest drive fault	
	Thigh rest drive fault	
	Fault in lateral tilt drive	

15.3 RESET: Acknowledge faults on LCD handset/control panel

For safety reasons, if a serious error is detected by the control unit all functions are electronically locked.

WARNING


Risk of injury

Failure to heed this warning may result in injuries due to unintended functions of the control unit!

- Acknowledge the fault as described below.
- If the control unit automatically locks again within a short space, contact Stiegemeyer's service centre to rectify the cause of the fault.

Depending on the bed fixtures, the locked function is indicated by:



- an appropriate warning symbol  on the display panel of connected control units

- the locking buttons concerned on the control box will alternately flash green and orange.


If the patient presses a button, a signal tone indicates a fault. If after a RESET, it is still not possible to carry out a mattress base height adjustment, please additionally carry out a new initialisation.

ATTENTION

Risk of malfunctions

Failure to heed this warning may result in a malfunction.

- Faults must only be rectified by service personnel.
- Rectify faults as instructed in the fault rectification table. Faults must not be acknowledged until they have been rectified.

 Alternatively, a RESET can also be carried out very easily via the control box instead of on the LCD handset (optional equipment) /control panel (see [RESET: Acknowledge faults on control box](#) » [187](#)).

A: Procedure using LCD handset:



Press the UP and DOWN buttons simultaneously and at the same time hold the top end of the LCD handset against the orange magnetic un-

locking key  until the warning symbol




disappears and the current fault appears (see [Fault message on LCD handset/control panel \(outside\)](#) » [178](#))

or

B: Procedure using control panel:











Press the  button until the warning symbol



disappears and the current fault appears (example shows: Symbol for height adjustment of drive faults; see [Fault message on LCD handset/control panel \(outside\)](#) » 178)

From this point on, the basic procedure is identical for both control units (A + B):

No.	Display	Press the buttons	Display	Description
1	Current fault, e.g.: 			Advance to the next view
2			RESET	Press both buttons until display >RESET< Keep pressed for 5 s until >OK !< If other faults are present, the next fault is shown instead of >OK< and must be acknowledged by repeating steps 1+2
3	Additional fault, if available, or OK !	--		5 short signal tones until display of >  < RE-SET is complete, all errors are acknowledged; all functions are locked

 After the acknowledgement procedure has been completed, the padlock symbol appears. You can now unlock the functions you wish to release for the patient (see [Locking/unlocking electric adjustment functions](#) » 80).

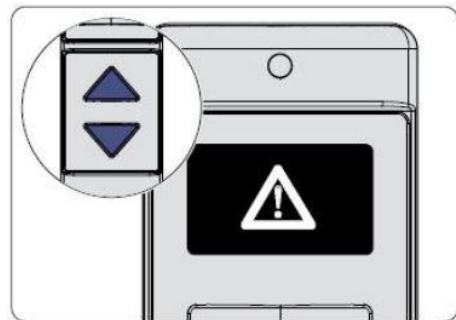
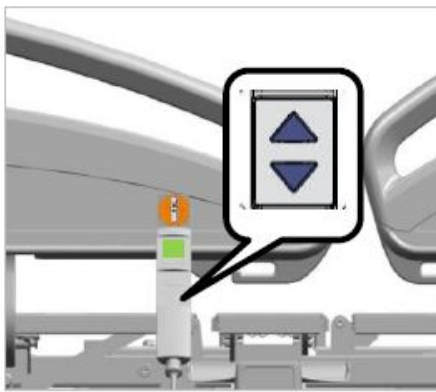
15.4 Indicate/delete last error

Displaying the last fault that occurred can be helpful in error analysis.

The fault messages can only be called up and deleted by service personnel.

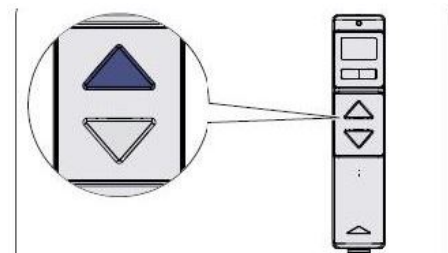
15.4.1 On the LCD handset

Call up and display the last fault on the LCD handset as follows:



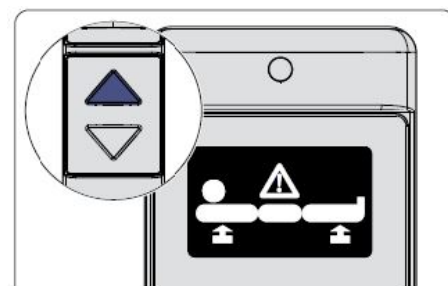
1 Press the UP and DOWN buttons simultaneously and at the same time hold the top end of the LCD handset briefly (for about ½ second) against the magnetic unlocking key.

2 Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.



3 Select the initialisation function by pressing the toggle switch.

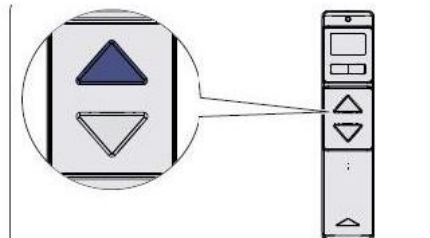
4 Press the UP button.



5 The last error function will appear on the display.

6 Press the UP button again to display the last fault. The symbol for the last fault that occurred will be displayed (Example: Symbol for height adjustment drive fault).

Press any button to return to the function selector menu.



7 Select the CLEAR function by pressing the toggle switch.

8 Press the UP button to confirm that the fault should be deleted.



9 OK ! confirms the deletion.

15.4.2 On the control panel (outside)



1 Press the UP and DOWN buttons simultaneously and keep them pressed, and at the same time press the "Settings" button briefly.

2 Keep both the UP and DOWN buttons pressed for a further 5 seconds while the warning triangle symbol is displayed.

3 Proceed now as described in steps 3-9, see [On the LCD handset » 183](#).

15.5 Fault messages on control box

If your bed is fitted with this equipment, it is easy to obtain a quick overview of the functional status and to perform a RESET (to acknowledge fault messages) if necessary.

For safety reasons, if a serious error is detected, all functions are locked electronically.

Any faults that are recognised are displayed by the locking LEDs flashing on the control units, making it easier to rectify the fault.

The table below shows the fault messages on the control box as well as possible solutions.

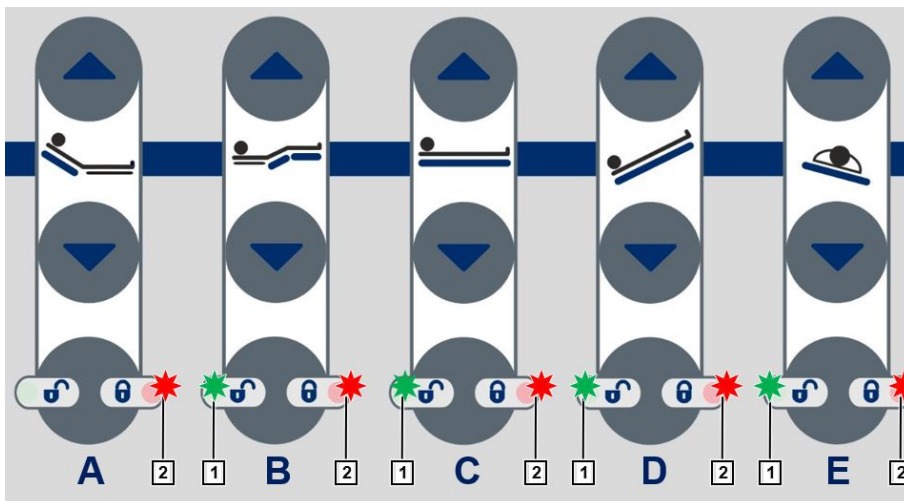


Image29: Fault indications on control box

A 2	B 1	B 2	C 1	C 2	D 1	D 2	E 1	E 2	Signal when button pressed	Error	Solution
	X	X								Thigh rest motor (socket 1) limit switch	<ol style="list-style-type: none"> 1. Replace cable/check or replace plug + perform RESET on control unit (→ chapter RESET: Acknowledge faults on LCD handset/control panel » 180; RESET: Acknowledge faults on control box » 187) + initialisation (→ chapter Initialising the control » 166) 2. If error still persists: Replace motor + perform RE-
			X	X						Mattress base height motor limit switch, head end (socket 2)	
			X	X				X		Position sensor for mattress base height motor, head end (socket 2)	
					X	X				Mattress base height motor limit switch, foot end (socket 4)	

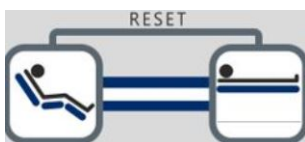
A 2	B 1	B 2	C 1	C 2	D 1	D 2	E 1	E 2	Signal when button press- ed	Error	Solution
					X	X			X	Position sensor for mat- tress base height motor, foot end (socket 4)	SET on control unit (→ chapter RESET: Acknowl- edge faults on LCD hand- set/control panel » 180 ; RESET: Acknowledge faults on control box » 187) + in- itialisation (→ chapter Initi- alising the control » 166)
							X	X	Lateral tilt motor limit switch (socket 3)		
							X	X	X	Position sensor for lat- eral tilt motor (socket 3)	
X		X	X		X					Malfunction in external data bus (OpenBus®): of connected control units/bus junction boxes (MJB). Most likely causes: 1. Malfunction of a handset/control unit (e.g. jammed but- ton, broken cable/ short-circuit) 2. Unintended exten- ded activation of a button (e.g. through sitting/lying on handset, solid ob- jects on the linen holder) 3. Loose connection/ moisture ingress in an OpenBus® plug connection (MJB; control unit; under bed light)	Systematic troubleshooting: 1. Identify + replace defective LCD handset/control unit (→ chapter Replace the LCD handset » 164); Re- placing the control pan- el » 165 + perform RESET with the replaced LCD handset/control panel (→ chapter RESET: Acknowl- edge faults on LCD hand- set/control pan- el » 180) RESET: Ac- knowledge faults on LCD handset/control pan- el » 180 ; RESET: Ac- knowledge faults on control box » 187 . Next, discon- nect the bed from the mains power supply for about 30 seconds and then recon- nect it. 2. Find and eliminate cause of extended activation of but- ton + perform RESET on control unit (→ chapter RE- SET: Acknowledge faults on LCD handset/control pan- el » 180 ; RESET: Ac- knowledge faults on control box » 187)

A 2	B 1	B 2	C 1	C 2	D 1	D 2	E 1	E 2	Signal when button press- ed	Error	Solution
											3. Check all internal plug connections/components; replace defective parts: <ul style="list-style-type: none"> • O-seal ring present/correctly inserted? • Plug fully inserted as far as it will go and secured against loosening with retaining clips engaged? + perform RESET on control unit (→ chapter RESET: Acknowledge faults on LCD handset/control panel » 180; RESET: Acknowledge faults on control box » 187)
										Internal control fault (very rare)	Replace control → chapter Replace the control unit » 166



- The control box can also be used to acknowledge any fault messages once the cause of the fault has been rectified (RESET; see [RESET: Acknowledge faults on control box](#) » 187)
- In the case of faults with the position sensors of the lifting drives, carry out an initialisation after this, (see [Initialising the control](#) » 166) to detect the motor position.


15.6 RESET: Acknowledge faults on control box



1. Press both RESET buttons at the same time and keep them pressed.

A signal tone will sound. The reset is successfully completed once the signal tone has stopped.

2. Let go of the buttons.

-  After the reset has been successfully completed, all the functions will initially be locked again: All the locking symbols light up orange. Now release the required adjustment function again.

16 Disposal

WARNING

Risk of infection

Failure to heed this warning can result in health risks!

- Please ensure as the operator that all components to be disposed of are not infectious or contaminated.

16.1 Disposal of the bed

If the bed is to be disposed of, the plastic and metal parts must be separated and disposed of properly in accordance with relevant local and national environmental regulations and legislation of the town or country concerned. If you have any queries, you can contact your local municipal waste company or our service department.

16.2 Disposal of packaging

Packaging must be sorted according to recyclable and other types of waste and recycled and disposed of in line with the environmental regulations and legislation of the country concerned. Recycling and disposal are governed in the European Union by the EU Waste Framework Directive 2008/98/EC.

16.3 Disposal of components

16.3.1 Electrical components

This bed – insofar as it is electrically adjustable – is classified as commercially used electrical equipment (B2B) in accordance with the WEEE Directive 2012/19/EC (implemented in Germany in the law governing electrical equipment).



The electrical components used are free from prohibited hazardous substances in compliance with the RoHS-II Directive 2011/65/EU.



Replaced electrical components (drives, control units, LCD handsets, etc.) must be treated as electric scrap in accordance with the WEEE Directive 2012/19/EU and disposed of accordingly.

The operator of this bed is legally obliged to return the electrical components directly to the manufacturer and not to dispose of them at municipal waste collection points. STIEGELMEYER and its service and sales partners will take these components back. The return of these components is covered by our General Terms and Conditions.

16.3.2 Batteries



Rechargeable batteries that are no longer of use must be properly disposed of in accordance with the EU Battery Directive 2006/66/EC and do not belong in household waste. If you have any queries, you can contact your local municipal waste company or our service department. In other countries outside Germany or the EU, the relevant national regulations must be complied with.

CAUTION

Environmental risk

Failure to heed this warning may result in environmental damage.

- Do not dispose of batteries in the domestic waste.
- Batteries can be disposed of at local waste collection points in the same way as car batteries.
- Outwardly undamaged, discharged battery sets can also be returned to Stiegelmeyer.

 **WARNING**

Risk of injury and environmental damage

Failure to observe the special safety precautions for Li-ion batteries may result in injury and environmental damage.

- Outwardly damaged battery sets must not be shipped.
- Dispose of these in non-flammable, leakproof and sealed containers at local collection points in accordance with national regulations.
- Additional safety information is given in [Safety information for disposal](#) » [17](#) and [Replacing the battery \(Li-ion\)](#) » [160](#)

17 Appendix

17.1 Available accessories

A wide range of accessories is available for this hospital bed, and we are continually extending this range.

CAUTION

Risk of injury

Failure to heed this warning may result in injury!

- Use only original Stiegemeyer accessories that match the corresponding bed model.
- This ensures safe and reliable operation and maximum patient safety.

ATTENTION

Material damage

Failure to heed the following information when choosing and installing accessories can result in damage to property!

- Remove accessories when they are not required.
- Only use accessories at the intended positions.
- Avoid, for example, chafing or the unprotected attachment of metal clamps to coated or varnished surfaces
- Please note when moving the bed that attached accessories may extend beyond the height, width or length of the bed and so may collide more easily with door frames, corners of walls and other obstructions.
- In the case of very long accessories, avoid applying high lateral forces, such as by manoeuvring the bed using the infusion pole. This will prevent any overloading of the fixing points.

Up-to-date lists of accessories can be obtained from Stiegemeyer and their sales partners by indicating the bed model.

The following accessories are available for this hospital bed:

- Patient lifting pole with grab handle
- Mattresses, various (for mattress dimensions, see chapter [Dimensions](#) » 46)
- Bed extension mattress sections, various
- Holders for crutches, towels etc., various
- Handles, various
- Infusion holders, for attachment to patient lifting pole, various
- Infusion stands for attachment to the bed, various
- Sliding rails, various, for fitting at any time
- Urine bottle holders, various


17.2 Information on electromagnetic compatibility (EMC)

WARNING

Risk of malfunctions

Failure to heed this warning may result in malfunctions!

- Only use accessories approved by the manufacturer. The use of accessories, transducers and cables other than those supplied by the manufacturer of this bed may result in increased electromagnetic emissions or reduced electromagnetic immunity of the bed and may lead to incorrect operation.
- The use of this device next to other devices should be avoided, as this could result in incorrect operation. If such use is nevertheless necessary, this device and the other devices should be monitored to ensure that they are working properly.
- Portable RF communication devices (radio, mobile phones, etc.), including their accessories (such as antenna cables and external antennas) should not be used at a distance of less than 30 cm from the electrical parts and cables of this bed. Failure to observe this may result in a reduction in the performance of the device.

 To ensure EMC, only use cables and accessories approved by the manufacturer (see [Available accessories](#) » 192). Due to the possibility of electrical interference from neighbouring devices, brief interruptions of electric adjustment functions cannot be completely ruled out. For the intended use, no significant performance limitations of this bed are known/expected as a result.

17.2.1 EMC information tables

ATTENTION

Risk of malfunctions

Failure to heed this warning may result in malfunctions of the bed or of surrounding devices.

- The bed is intended for use in the electromagnetic environment described below. The operator or user of the bed must ensure that it is used in such an environment.

Note: The characteristics of this device, determined by emissions, allow its use in industry and hospitals (CISPR 11, Class A). This equipment may not provide adequate protection for radio services when used in a residential environment (which typically requires Class B according to CISPR 11). If necessary, the user must take remedial measures such as implementing or realigning the device.

Ambient limit values of the interference emissions

Phenomenon	Professional healthcare facilities
Conducted and radiated interference emissions	CISPR 11 Group 1, Class A
Harmonic distortions	See IEC 61000-3-2
Voltage fluctuations and flicker	See IEC 61000-3-3

Sheathing

Phenomenon	EMC basic standard or test method	Immunity test level
		Professional healthcare facilities
Electrostatic discharge (ESD)	IEC 61000-4-2	+/- 8 kV contact
		+/- 2 kV, +/- 4 kV, +/- 8 kV, +/- 15 kV air
High-frequency electromagnetic fields	IEC 61000-4-3	3 V/m; 80 MHz to 2.7 GHz; 80% AM at 1 kHz

Sheathing		
Phenomenon	EMC basic standard or test method	Immunity test level Professional healthcare facilities
High-frequency electromagnetic fields in the immediate vicinity of wireless communication devices	IEC 61000-4-3	See separate table zz (at the end of this chapter)
Magnetic fields with rated power frequencies	IEC 61000-4-8	30 A/m; 50 Hz or 60 Hz
Magnetic fields at close range	IEC 61000-4-39	8 A/m (30 kHz; CW) 65 A/m (134.2 kHz; 50% PM at 2.1 kHz) 7.5 A/m (13.56 MHz; 50% PM at 50 kHz)

AC port for supply input		
Phenomenon	EMC basic standard	Immunity test level Professional healthcare facilities
Electrical fast transient disturbances/bursts	IEC 61000-4-4	+/- 2 kV; 100 kHz repetition frequency
Electrical surges: conductor to conductor	IEC 61000-4-5	+/- 0.5 kV; +/- 1kV
Electrical surges: conductor to earth	IEC 61000-4-5	+/- 0.5 kV; +/- 1kV; +/- 2 kV;
Conducted interference induced by high-frequency fields	IEC 61000-4-6	3 V; 0.15 MHz to 80 MHz: 6V in ISM frequency bands between 0.15 MHz and 80MHz 80% AM at 1 kHz
Voltage dips	IEC 61000-4-11	0% U_T ; ½ cycle; at 0, 45, 90, 135, 180, 225, 270 and 315 degrees

AC port for supply input		
Phenomenon	EMC basic standard	Immunity test level Professional healthcare facilities
		0% U_T ; 1 cycle; and 70% U_T ; 25/30 cycles; single-phase at 0 degrees Celsius
Voltage interruptions	IEC 61000-4-11	0% U_T ; 250/300 cycles

Ports for signal input/signal output parts		
Phenomenon	EMC basic standard	Immunity test level Professional healthcare facilities
Electrostatic discharge (ESD)	IEC 61000-4-2	+/- 8 kV; contact +/- 2 kV, +/- 4 kV, +/- 8 kV, +/- 15 kV air
Electrical fast transient disturbances/bursts	IEC 61000-4-4	+/- 1 kV; 100 kHz repetition frequency
Conducted interference induced by high-frequency fields	IEC 61000-4-6	3 V; 0.15 MHz to 80 MHz; 6V in ISM frequency bands between 0.15 MHz and 80MHz 80% AM at 1 kHz

Table zz: Test specifications for the immunity of sheathings to high-frequency wireless communication equipment

Test frequency MHz	Frequency band	Radio service	Modulation	Max. power W	Distance m	Immunity test level v/m
385	380 to 390	TETRA 400	Pulse modulation 18 Hz	1.8	0.3	27

Table zz: Test specifications for the immunity of sheathings to high-frequency wireless communication equipment						
Test frequency MHz	Frequency band	Radio service	Modulation	Max. power W	Distance m	Immunity test level v/m
450	430 to 470	GMRS 460 FRS 460	FM +/- 5% deviation, 1kHz sine wave	2	0.3	28
710	704 to 787	LTE band 13, 17	Pulse modulation 217 Hz	0.2	0.3	28
745						
780						
810	800 to 960	GSM 800/900 TETRA 800 iDEN820, CDMA 850, LTE band 5	Pulse modulation 18 Hz	1	0.3	28
870						
930						
1720	1700 to 1990	GSM 1800 CDMA 1900, GSM 1900, DECT, LTE band 1; 3; 4; 25; UMTS	Pulse modulation 217 Hz	2	0.3	28
1845						
1970						
2450	2400 to 2570	Bluetooth, WLAN 802.11 b/g/n, RFID 2450, LTE band 7	Pulse modulation 217 Hz	2	0.3	28
5240	5100 to 5800	WLAN 802.11 a/n	Pulse modulation 217 Hz	0.2	0.3	9
5500						
5785						

17.3 Inspection report

Inspection of electromedical devices according to DIN EN 62353 (VDE 0751-1): 2015-10

Customer/med. facility/practice:

Address:

Carried out: Repeat inspection Inspection prior to initial operation (reference value)

Inspection following repairs/maintenance

Equipment type: Hospital bed Care bed **Protection class:** I II

Bed type: Sicuro tera

Inventory number:

Location:

Serial number:

Manufacturer: Stieglmeyer GmbH & Co.

Applied parts: Mattress base, headboard, footboard, safety sides

Testing equipment used (type/inventory no.):

1.

2.

Medical Device Regulation classification: Class I

I. Visual inspection		OK	Not OK	Description of defect
What?	How?			
Visual inspection of the electrical components (if installed)				
Control unit/power pack:	Type plate: Present, legible			
	Housing: Securely fixed, No cracks/damage All plugs inserted and locked in securely?			
Motors:	Housing and lifting tubes: No cracks/damage/deformation?			

I. Visual inspection		OK	Not OK	Description of defect
What?	How?			
Handset/foot pedal/control panel in safety sides/control units in linen holder	Housing + keyboard + display: No damage?			
Internal cabling: Motor cable, handset cable, mains cable, additional component cables	No damage, securely fixed, safe routing of cable without risk of it being crushed when bed is moved, mains cable holder available			

I. Visual inspection		OK	Not OK	Description of defect
What?	How?			
Visual inspection of the mechanical components (if installed)				
Type plate + warning labels on bed	Present on bed frame, legible			
Patient lifting pole, adapter sleeves, grab handle with strap	No damage or deformation			
Manufacturer's recommendation: Replace grab handle after 5 years				
Bed frame: Mattress base, chassis	No damage or deformation, no split welded seams			
Castors	No damage			
Mattress base	No damage or cracks			
Safety sides	No damage, cracks or deformation			
Connecting elements (screws, bolts, nuts, safety caps)	Secure fixing, no missing parts			

I. Visual inspection		OK	Not OK	Description of defect
What?	How?			
Wearing parts, joints	No damage or severe wear			
Plastic parts, various	Free of sharp-edges, damage/breakage			

II. Electrical measurement according to DIN EN 62353 (VDE 0751-1)					
	Limit value	Measured value			
Resistance of protective earth conductor: Measuring point: PE pin on the bed, head end (recommended measuring current for beds cleaned in automatic washing systems ≥ 2 A)	0.3 Ω	Ω			
Device leakage current: <u>direct</u> (place bed with conductive castors in a way that it is insulated) or <u>differential</u>	0.5 mA				
1 Plug the bed mains cable in the test socket on the measuring instrument					
2 Connect the measuring instrument probe to the PE connector (mattress base, head end).					
3 Activate the motors using the handset for the duration of the measurement.		mA			

III. Functional check:		OK	Not OK	Description of defect
What?	How?			
Functional check of the electrical components (if installed)				
Battery powered; capacity of battery	Requirements: Battery is charged + bed is disconnected from power supply: Test: Load bed with approx. 80 kg (=1 person); at least 2 cycles height adjustment Up/Down until must be possible before cut-out.			
End of travel cut-out of the motors	Automatic cut-out at both end positions			
Handset, foot pedal; control units, locking functions	Test according to instruction manual. No 'rattling' when shaken			
Motors	No abnormal noise level, no uneven running			
	Backrest motor and manual CPR release			
Control unit/ power pack and motors	Test according to instruction manual			
Strain Relief of Mains Cable	Mains cable firmly fastened			
Functional check of the mechanical components (if installed)				
Joints and pivots	Smooth operation			
Lower leg rest (ratchet mechanism)	Engages evenly on both sides; test according to instruction manual			
Integrated lower leg rest extension (plastic holders)	Check plastic holders for breakage			

III. Functional check:		OK	Not OK	Description of defect
What?	How?			
Grab handle with strap	Securely fixed when load tested under approx. 75 kg load (hang from it briefly with two hands)			
Castors, all	Effective brakes, securely engaged brake			
Safety sides	Lock in place and release properly			
Accessories (e.g. patient lifting pole, grab handle and external safety sides)	Correct fastening, no damage, suitable for purpose			
Plastic parts, various	No damage, deformation or sharp-edges			

Overall inspection result			
Defects/remarks:			
<input type="checkbox"/> No safety or functional defects were detected			
<input type="checkbox"/> No direct risk, the defects detected can be rectified quickly			
<input type="checkbox"/> Device must be taken out of circulation until the defects have been rectified!			
<input type="checkbox"/> Device does not conform to requirements – modification/replacement of components/decommissioning recommended.			
Test approval sticker applied:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Next inspection date:
Documents that form part of this inspection report:			
Checked:	Date:	Name:	Signature:
Approved	Date:	Name:	Signature:
Address/stamp of responsible company:			

17.4 Inspection by the user

Check		OK	Not OK	Description of Defect
What?	How?			
Visual Inspection of the Electrical Components (if Installed)				
Handset: Housing + keypad + display + cable	No damage			
Handset: Cable + cable suspension	Securely suspended + routed without risk of being crushed in the bed frame			
Mains cable	No damage, safe routing			
Control box: Housing + keypad + cable	No damage, routed without risk of being crushed in the bed frame			
Visual inspection of the mechanical components				
Patient lifting pole, adapter sleeves	No damage or deformation			
Grab handle with strap	No damage			
Chassis	No damage or deformation			
Mattress base, covers; plastic parts	No damage, deformation, sharp-edged breakage			
Performance Check of the Electrical Components (if Installed)				
Handset/control box/foot pedal	For performance check, see Control units » 22			
Performance Inspection of the Mechanical Components (if Installed)				
Castors	For safe braking, see Immobilising the bed » 79			
Emergency CPR lowering of backrest	To lower by activating the release lever, see Use in an emergency: Lowering the backrest » 124			

Check		OK	Not OK	Description of Defect
What?	How?			
Safety sides	For performance check of secure engagement, see Using safety sides » 116			
Accessories (e.g. patient lifting pole, grab handle with strap, safety sides)	For secure attachment, without damage; suitability, see Attaching the grab handle » 67			
Inspector's signature: Inspection result.				Date:

17.5 Translation of EC Declaration of Conformity

We, Stiegemeyer GmbH & CO. KG, in our sole responsibility as the manufacturer, hereby declare that this product complies with the provisions of REGULATION (EU) 2017/745 OF THE EUROPEAN PARLIAMENT AND THE COUNCIL of 5 April 2017 (MDR). The latest full version of the declaration of conformity is available on request from our customer centre (see chapter [Address, market information](#) » 1).

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