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transform lives

INSTRUCTION MANUAL

ASSEMBLY AND OPERATION

BED TYPE

Cadence Floor



CE

Last updated: Dec. 2025

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Dear customer,

The team from Harvest Healthcare would like to thank you for the trust you have placed in our Cadence Floor profiling bed. With the decision to purchase a profiling bed from Harvest Healthcare you receive a product with high functionality at the highest safety level.

With the purchased profiling bed we can guarantee you optimal lying comfort.

All beds are carefully checked by our staff before delivery.

The profiling bed delivered to you has left our premises in perfect condition.

When you receive the bed, the responsibility for its proper and intended operation also passes to you at the same time.

These instructions for use inform you as the operator and your users in their daily work about the functioning and safe handling of the bed.

Please keep the instructions for use at hand near the bed at all times.

We are convinced that our product will make a positive contribution to your care.

Best regards

Your Harvest Healthcare team

**Please read and observe these operating instructions
before each use! If you change ownership, please include
these instructions for use.**



Cadence Floor

Lying surface 90 or 105 x 200 cm
with 2-part Aluminium-side rails



Cadence Floor

Lying surface 90 or 105 x 200 cm
cm with 3-part Aluminium-side rails



Cadence Floor

Lying surface 90 or 105 x 200 cm
with wooden side rails

Before the first use:



Read these instructions for use carefully and in full before use.

Please pay particular attention to the various safety instructions. The bed should be cleaned and disinfected before first use and before each reuse.

Harvest Healthcare beds carry the CE mark and meet the requirements for safety and functionality. The Cadence Floor bed has been tested in accordance with international standards, including the safety requirements for medical devices.

However, these safety requirements can only be met if the user has ensured that the bed (including accessories) is in proper working order before use.

Please observe the Medical Device Operator Ordinance (MPBetreibV, 2021).

1.1 Explanation of the symbols used

In these operating instructions, important information is indicated by the following symbols:



Read information marked with this symbol carefully and follow it without fail. This information is relevant to safety.



This symbol warns of dangerous voltage. There is a danger to life!



This symbol warns of general dangers. There is danger to life and health.



Mark of conformity according to Medical Devices Regulation (EU) 2017/745



manufacturing date



Manufacturer of the medical device



medical device



Serial number

IPX4

Protection of electrical equipment against splashing water



Symbol for device of protection class II, double protective insulation



Symbol for type B application part according to IEC 60601-1



The nursing bed may only be used indoors.



The product must be collected separately in the European Union. Disposal with normal household waste is not permitted.



Symbol for DC



Symbol for AC



Symbol for safe working load



Symbol for maximum patient weight



Symbol for reading instruction manual

1.2 Explanation of the designated groups of persons

Operator

The operator of a medical device is any natural or legal person who is responsible for the operation of the health facility in which the medical device is operated or used by its employees. Contrary to sentence 1, the operator of a medical device which is owned by a member of the medical profession or the medical industry and which is brought into a health facility by this member for use is the relevant member of the medical profession or the medical industry. A person is also considered to be an operator if he keeps medical devices ready for use outside of health facilities in his company or facility or in public space. [§2, paragraph 2, MPBetreibV, 2021]

Requirements for the operator

- Please note that, as the operator of this medical device, you are bound by the requirements of the Medical Device Operator Ordinance (MPBetreibV, 2021).
- The Cadence Floor profiling bed is a medical device and may only be operated and used in accordance with its intended purpose, the regulations of the MPBetreibV, the relevant legal regulations as well as the generally recognised rules of technology.
- Only instruct persons to use this medical device if they have the necessary training or knowledge and experience, and have been instructed in the use of this medical device.
- Instruct the user in the proper handling of this medical device and document the instruction in an appropriate form.

- Combinations with other medical devices (including accessories) or with other objects may only be operated and used if they are suitable for use in this combination, taking into account the intended purpose and the safety of patients, users, employees or third parties.

User

The user is anyone who uses a medical device on a patient within the scope of the Medical Device Operator Ordinance (MPBetreibV). [§2, Para. 3, MPBetreibV, 2021]

User requirements

- Use the Cadence Floor bed only as intended and in accordance with these instructions for use.
- Only use this product if you have been properly instructed in its use and have the necessary training or knowledge and experience (e.g. nursing staff).
- Before using the nursing bed, make sure that it is in good working order and condition.
- Observe the Instruction Manual and other safety-related information enclosed.
- If suspected serious events occur in connection with the Cadence Floor bed, they must be reported to Harvest Healthcare and the responsible federal authority. Serious incidents occurring in other contracting states of the Agreement on the European Economic Area must be reported to the competent authorities of this state.
- Suspected serious events are events that may be due to an undesirable side effect of a product, a malfunction, or a deterioration in the properties or performance of a product, including application errors due to ergonomic features or inadequate information provided by the manufacturer. Such a suspected serious event can have led directly or indirectly to death, to a temporary or permanent serious deterioration in the state of health of a patient, user or other person, as well as to a serious risk to public health (refer to the Ordinance on the Reporting of Suspected serious incidents with medical devices as well as for the exchange of information between the responsible authorities - MPAMIV).

Patient / Resident

In these instructions for use, a patient is defined as a person who is in need of nursing care due to his or her illness, disability or age and is lying in a nursing bed.

Requirements for the patient / resident

It is possible for the patient lying in bed to independently operate the electrical adjustment functions of the bed via the hand switch if they have been instructed in the use of the bed and are mentally and physically able to do so.

Independent use of the bed by the patient therefore requires that the patient can carry out the adjustment functions safely and specifically using the hand control and can also free themselves from dangerous situations.

Qualified personnel

Employees of the operator who are authorised, on the basis of their training or instruction, to deliver, assemble, dismantle and transport the beds are referred to as qualified personnel. In addition, these persons are instructed in the instructions for cleaning and disinfecting the beds.

2.1 Intended use (application environment)

The Cadence Floor bed is designed for the accommodation of adults with a height from 146 cm and a body weight between 40 kg and 170 kg (maximum). They are suitable for use in senior residences, nursing homes and in home care - i.e. in application environments 3 and 4 - and may only be operated under the operating conditions described in these operating instructions.

Cadence Floor beds are designed to alleviate or compensate for disability or incapacity and to facilitate working conditions for the caregiver. Any other use is considered improper and is excluded from possible liability. The Cadence Floor is a low bed, meaning the bed frame can be lowered close to the floor. It can therefore be used specifically for fall prevention. Attention: Cadence Floor beds are not designed for use in hospitals. They are not EX-protected and must not be operated in hazardous areas.

The Cadence Floor may only be used in dry indoor rooms. It is only suitable for transporting patients within the patient's room and with the lying surface adjusted to the lowest horizontal position.

The Cadence Floor beds have no connection option for equipotential bonding.

You must therefore take this into account when combining the bed with other electrical medical devices or with other mains-operated products.

The operator, as a competent person, must check whether the corresponding combination of the bed with other electrical devices is safe during the service life and no unacceptable risks can occur.

The operator of the medical devices is responsible for ensuring that the combination of the devices meets the requirements of IEC 60601-1.

Non-electrical medical devices must comply with the IEC or ISO safety standards applicable to these devices if they are to be used / combined with the bed.

If cables from other devices are routed in the bed, precautions must be taken to prevent these cables from being crushed between parts of the bed.

Take into account the information and safety instructions in the instructions for use of the electrical devices that you want to combine with the Cadence Floor beds (e.g. anti-decubitus alternating pressure systems, feeding systems, infusion pumps, lamps, etc.) as well as the requirements of the IEC 60601-1 standard (in the current Version).

In this case, all bed functions must be deactivated for safety reasons for the duration of use via the integrated locking device on the hand control.








2.2 Unauthorised use

All uses deviating from the intended use, which can then also lead to hazards.

These include, for example:

- Loading of the nursing bed beyond the permissible safe working load (see para. 12.1 and type plate on bed frame)
- Operation of the bed by the patient or occupant who has not received any instruction.
- Use of the nursing bed for children
- Try to move the nursing bed in the braked position
- Use of the nursing bed on a non-horizontal surface (max. inclination 5°)

3.1 Safety instructions

-  Potential dangers which may occur despite proper operation must be pointed out separately during the instruction. Before initial operation, the user/care personnel must read the operating instructions carefully and in detail.
-  No objects or body parts may be in the movement area of the bed while the adjustment functions are being actuated. Risk of crushing!
-  Ensure that the bed cannot be operated by children playing and that there are no pets under the bed when the bed is adjusted.
-  If the psychological or mental condition of the patient requires it, the hand control must be locked via the lock switch on the back of the hand control (nurse key). The locking function is described in detail in par. 6.3. For this patient group, it may also be necessary to place the hand control outside the patient's reach in order to avoid the danger of strangulation by cables.
-  Bed adjustments may only be carried out by instructed persons or in the presence of an instructed person. If a possibly necessary side guard (side rail) is used, pay particular attention to the following instructions:
- Only use side rails approved by Harvest Healthcare as optional accessories. The permissible dimensions can be found in chapter 6.4.
 - The use of incompatible side rails is not permitted and can lead to hazards, e.g. due to trapping.
 - The distance between two side rails lying one above the other or between the lower edge of the lower side rail and the lying surface must not exceed 12 cm.
 - Only instructed personnel may operate the side rails.
 - Side rails may only be fully raised and locked or fully lowered.
 - When lowering the side rails, take care not to drop them.
 - No parts of the patient's body may protrude over the lying surface or touch the side rails while the adjustment function is being actuated.
 - The side rails only offer protection against rolling out when the backrest and knee adjustment are in the horizontal position.
 - Under no circumstances should side rails be used improperly (e.g. for climbing over or as a support).
 - The distance between the top edge of the side rail and the top of the mattress in non-compressed condition must be at least 22 cm. If the distance is less than the specified minimum, use a side rail elevation.
 - When in use, the side rails must not remain in a diagonal position.
- Before moving the bed, disconnect the mains plug from the socket and ensure that the mains plug does not rub against the floor while moving it.
-  The mains plug should always be accessible so that in an emergency the device can be disconnected from the mains supply by pulling it out of the socket.
-  The mains cable must be exposed and must not be trapped, as it is carried with the height adjustment of the bed. Otherwise the mains cable may be torn out of its strain relief and damaged. In addition, the mains plug can be torn out of the socket and expose electrical cores.

If the mains supply cable or the mains plug is damaged, the complete supply cable with plug must be replaced. This work may only be carried out by the manufacturer or authorised specialists.

Do not use multi-socket adapters to connect the mains plug, as liquids can penetrate them.
(Fire hazard and electrical shock)



Before cleaning and disinfecting the bed, the mains plug must be disconnected from the mains and securely hung up. The plugs for the handset and the motors which are plugged into the control unit on the lying surface drive must be plugged in. This is necessary so that no water can penetrate the control unit.



The maximum duty cycle and safe working load must not be exceeded, otherwise safe operation is no longer guaranteed (see technical data).



The Cadence Floor beds must not be used in rooms where there is a risk of explosion.

The bed may only be dismantled if there is no patient or occupant in it.

3.2 Safety instructions for the operator

Use these operating instructions to instruct each user on safe operation before initial use. Inform the user of any hazards that may exist if the device is not handled properly.



Only instructed persons may operate the beds. This also applies to persons who only operate the beds as representatives.

According to the Medical Devices Regulation (EU) 2017/745, beds are Class I active medical devices. This results in obligations for you in accordance with the Medical Device Operator Ordinance (MPBetreibV) in order to ensure the permanently safe operation of this medical device without endangering patients, users and third parties. For long-term use of the systems, function checks and visible damage must be carried out and documented at least once a year (see chapter 9.2).

3.3 Safety instructions for the user

Let the operator instruct you in the safe operation of the beds.

In particular, observe the general safety instructions as described in para. 3.1.

Bed adjustments may only be carried out by instructed persons or in the presence of an instructed person.

Move the lying surface to the lowest position if you leave the nursing bed unattended with the patient. This reduces the risk of injury to the patient when getting in and out.

If a malfunction or damage is suspected, immediately unplug the power cable from the socket.

Label the bed as 'faulty' and take it out of service. After that, please inform the responsible operator immediately.

3.4 Cleaning and disinfection



Before cleaning and disinfection, the mains plug must be disconnected from the mains and securely hung up. The plug for the handset and the motors, which are plugged into the control at the lying surface drive, must be plugged in. This is necessary so that no water can penetrate the control unit.

Do not immerse the electrical components in water; wipe them with a damp cloth only.



The electrical components must not be sprayed with a high-pressure cleaner or water jet. Only wipe disinfection is permitted.



To avoid skin irritation, always wear liquid-impermeable gloves when cleaning and disinfecting the bed.



Attention: When spray disinfecting with alcohol-containing agents, there is a risk of explosion and fire when used over large areas.

3.5 Maintenance and repair



Inspection, maintenance and repair may only be carried out by persons who have read the safety regulations, follow these operating instructions and are qualified in accordance with MPBetreibV (2021) §5.



Maintenance, inspection and repair work are not allowed to be carried out on the nursing bed when it is in use and the patient is in it.



In order to detect possible defects in time and to ensure safe use, a technical check (visual and functional check) must be carried out by qualified personnel at least once a year according to the maintenance schedule (see chapter 9.2) after a longer period of inactivity and before each reuse.



If the tests reveal errors, damage or defects, the bed may no longer be operated. Maintenance of the health-care bed must be carried out by qualified personnel in accordance with MPBetreibV (2021) §5.



Only original spare parts and accessories of the manufacturer may be used, otherwise all warranty and product liability are excluded.



The 9V block battery is the energy storage device for electrical emergency lowering in the event of a power failure. The energy storage is sufficient for max. one emergency lowering and must then be replaced. If the expiry date of the batteries has exceeded, they must also be replaced immediately. As batteries are self-discharging, it is recommended to replace them every two years if they are not used. Make sure that this is an alkaline manganese battery of type 6LR61 and that only this type may be used. Empty batteries must be disposed of in an environmentally friendly manner.

3.6 Accessories

An lifting pole is supplied as an accessory whose safe working load of 80 kg must not be exceeded. The lifting pole is not used to lift persons, but makes it easier to change from a lying position to a sitting position or to change the position. The lifting pole must not be swivelled outside the bed and must only be used within its permissible adjustment range, which is defined by the tube holder on the bed. Otherwise the bed may tip over completely and lead to serious injuries.



For the Cadence Floor, undivided wooden side rails and 2-part or 3-part aluminium side rails are available. Please only use mattresses that are compatible with the side rails supplied. The distance between the mattress surface in the non-compressed state and the upper edge of the upper side rail must be at least 22 cm. As a rule, when using the undivided wooden side rails, a mattress thickness of 12 cm to 18 cm is suitable. When using the 2-part or 3-part aluminium side rails, a maximum mattress thickness of 16 cm is permitted.



Make sure that the dimensions of the mattress match the dimensions of the lying surface of your bed. When using mattresses that are not compatible with this bed, hazards can arise, e.g. through falling out, trapping, etc.



Another accessory for the Cadence Floor beds is a bed extension that can be retrofitted and offers the option of increasing the bed length to 220 cm. Note the descriptions in Chapter 6.7.



The following accessories are also possible for the Cadence Floor:

- bed lamp
- wall spacer
- grab handle
- Underbed lighting and other
- Cosy head and footboard covers

3.7 Storage

If the nursing bed is to be stored for a longer period of time, the 9V block battery should be removed as a precaution to prevent damage to the bed from any leaking liquid.



3.8 Useful life and disposal

With correct operation and appropriate use, this bed has an expected service life of 7 to 10 years.

The bed must not be disposed of with normal household waste at the end of its service life. For environmentally friendly disposal, please contact your local authority or Harvest Healthcare Ltd.

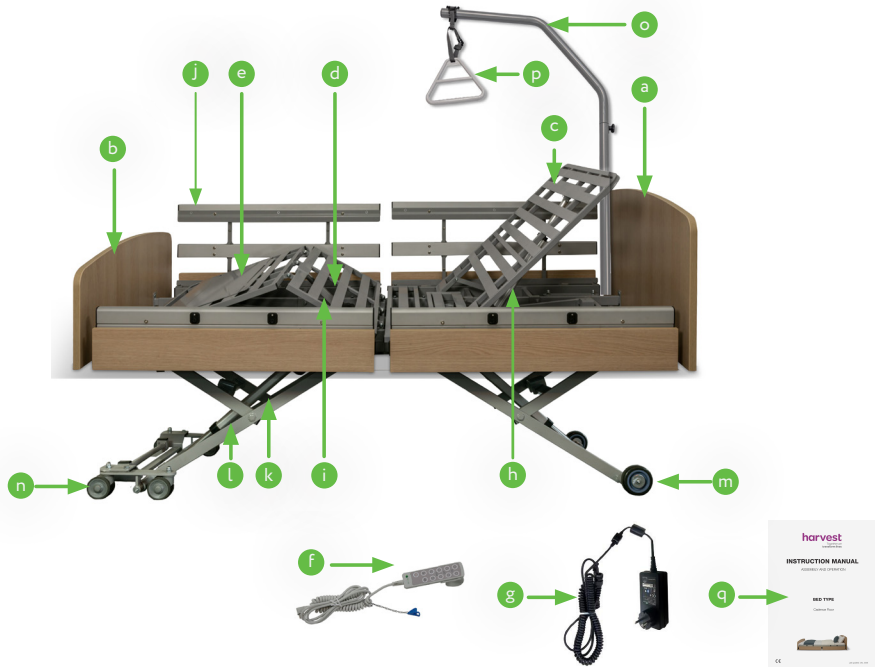
The electrical components (power supply units, control units, drives and hand controls) of these beds are to be treated like electronic waste in accordance with WEEE Directive 2012/19/EU (Waste Electrical and Electronic Equipment) and disposed of properly.

The components used conform to the directive 2011/65/EU (RoHS) on the restriction of the use of certain hazardous substances in electrical and electronic equipment.



When disposing of it, please note that the bed or its accessories can be contaminated and contaminated with germs. Damage can also result in sharp edges, splintering, etc. These can lead to health risks.

On receipt of the delivery and before commissioning, check whether the nursing bed is damaged. Complain visible damage immediately to the delivering company.
 After unpacking, please check that the delivery is complete. You will receive a fully assembled bed consisting of the following parts:



- a. Head end
- b. Foot end
- c. Electrically adjustable backrest
- d. Electrically adjustable thigh support
- e. Mechanically adjustable lower leg support
- f. Hand switch with nurse key
- g. Mains cable with SMPS
- h. Electric drive for backrest
- i. Electric drive for thigh support
- j. 2-part aluminium side rail
- k. lifting frame
- l. Electric Lift drive for height adjustment
- m. Plastic roller head side
- n. Double Plastic roller foot side
- o. Lifting pole
- p. Triangle grab handle
- q. Instructions for use

Note: The Cadence Floor bed is supplied fully assembled.

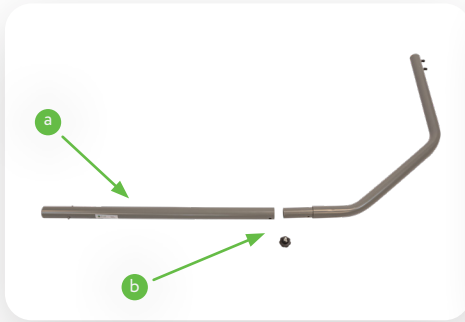
5.1 Assembly of lifting pole with triangle handle (accessory)

With the help of the lifting pole the patient can stand up and move more easily into another position. A triangle handle is attached to the lifting pole.

Mount the erecting yoke by putting the two parts together (a) and screwing the star grip screw into the threaded hole (b) and tightening it! Insert it into the erecting fixture in the lying surface.

Make sure that the locking cylinder pin (c) engages in the recess of the erecting fixture.

Attention: The erecting bracket must not be used outside the latching mechanism.

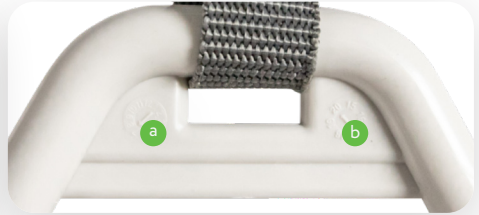


Slide the fixed loop of the triangle belt over the first bolt of the lifting pole (a) and check that it is securely held by pulling the triangle handle downwards. Fix the loop of the triangle belt only between these two bolts.



The length of the strap of the triangle handle can be adjusted by the buckle or by pressing a button (depending on the version). Choose a setting in which the user can easily reach the handle while lying down. As a rule, the adjustment range is between 75-95 cm (version without button) or 67-97 cm (version with button), measured from the top edge of the mattress. Make sure that the belt is securely fastened again.

The triangle handle has a shelf life of at least 5 years under normal use (see embossing of production date). It is then recommended to replace the triangle handle.



- a. Production month
- b. Production year

The lifting pole can be used in the following two positions:

- a. The lifting pole can be positioned above the person lying in bed and serves as an aid during repositioning. To achieve this position, the lifting pole tube must be turned towards the center of the bed and the locking cylinder pin must engage in the inner bulge of the lifting pole holder.
- b. The lifting pole can be positioned parallel to the edge of the bed when it is not needed and is in the way of the person lying in bed. To achieve this position, the lifting pole tube must be turned towards the outside of the bed and the locking cylinder pin must engage in the outer bulge of the lifting pole holder.

 Make sure that the locking cylinder pin always engages in one of the two bulges in the lifting pole holder.

 Attention: The bar of the lifting pole must not be used in any position other than the two locked positions.

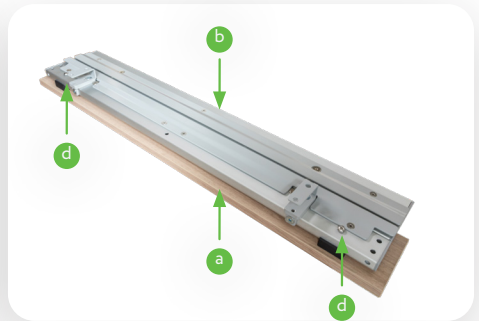




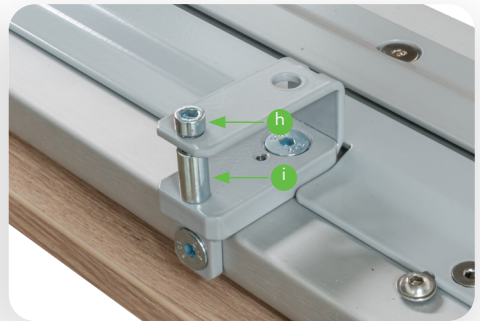
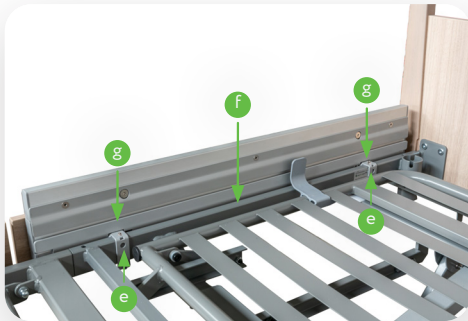
5.2 Assembly of the 2-part alu-side rails (accessory)

When installing the 2-part alu-side rails, proceed as follows:

1. Before mounting the aluminium side rails on the bed frame, the wooden side panels (a) must be attached to the side rails (b).
2. Place the plastic spacer (c) between the wooden side panel and the side rail and guide both screws (d) through the holes in the side rail, spacer and wooden side panel.
3. Tighten both screws.
4. Also mount the wooden side panels on the other aluminium side rails.



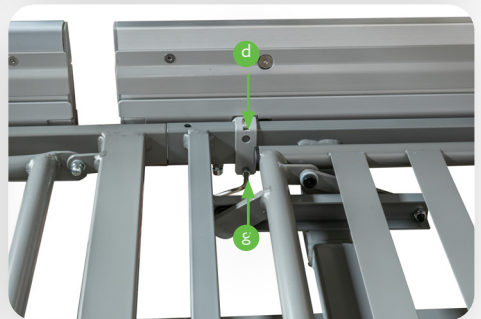
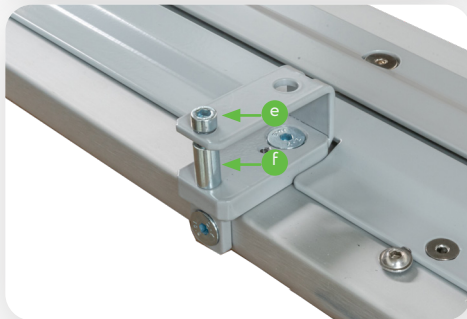
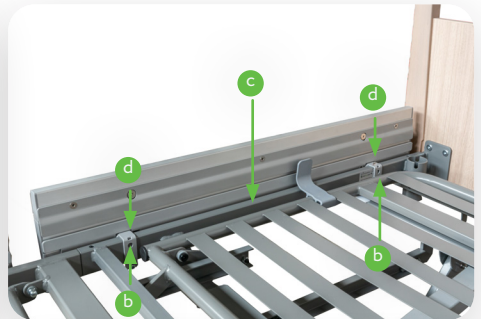
5. Hang the side rail with the two U-shaped straps (**e**) on the longitudinal frame tube (**f**) of the lying surface.
6. Position the side rails on the mattress base frame tube so that the two threaded pins (**g**) of the U-shaped bracket fit into the holes in the mattress base frame tube.
7. Insert the Allen screw (**h**) through both holes of the two mounting brackets.
8. The spacer sleeve (**i**) must be centred over the Allen screw.
9. Tighten the Allen screw with an Allen key (**j**).
10. Repeat steps **1-9** for all other side rail elements.



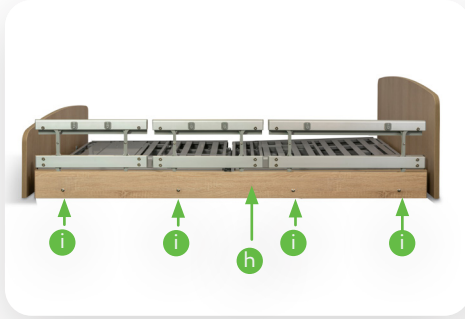
5.3 Assembly of the 3-part alu-side rails (accessory)

When installing the 3-part alu-side rails, proceed as follows:

1. Hang the large side rail element (a) with the two U-shaped straps (b) on the head-side longitudinal frame tube (c) of the lying surface.
2. Position the side rails on the mattress base frame tube so that the two threaded pins (d) of the U-shaped bracket fit into the holes in the mattress base frame tube.
3. Insert the Allen screw (e) through both holes of the two mounting brackets.
4. The spacer sleeve (f) must be centred over the Allen screw.
5. Tighten the Allen screw with an Allen key (g).
6. Repeat steps 1-5 for all other side rail elements.



7. Finally, attach the wooden paneling (**h**) to the long side of the lying surface with the 4 Allen screws (**i**).

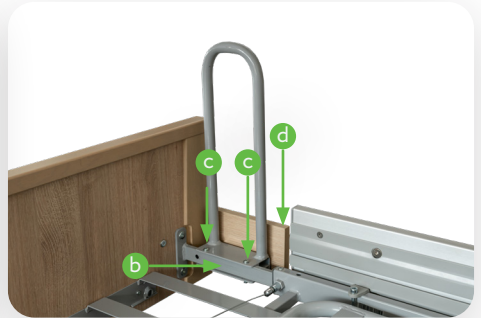
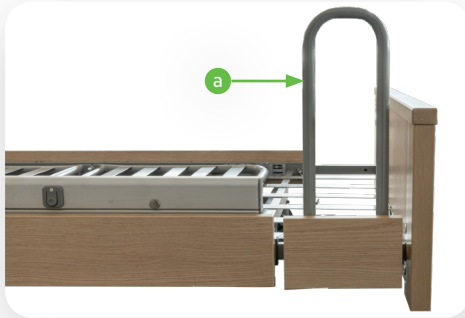


5.4 Assembly of the protector (accessory)



When using the bed extension and the split side rails, it is necessary to retrofit the protector to prevent the patient from getting trapped or falling out.

A dimension of <60 mm is required for the openings between the divided side rails and the footboard of the bed, or >318 mm is required.



1. Position the protector (**a**) on the bed extension frame (**b**).
2. Attach the protector to the frame with the two screws (**c**) provided.
3. Screw the side panel extension (**d**) onto the protector from the inside.

5.5 Commissioning

Connecting the nursing bed to the mains socket.
Insert the mains plug into the socket.

The mains plug should always be accessible so that in an emergency the system can be disconnected from the mains supply by pulling it out of the socket. The electric actuators are now ready for operation.

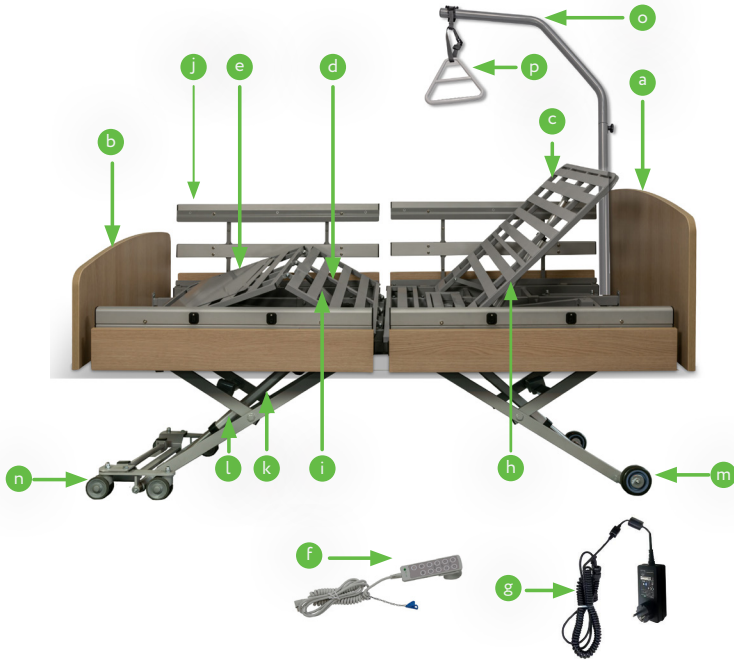


The Cadence Floor bed is ready for operation after it has been successfully installed and all the steps in Chapter 5 have been followed.

Once the Cadence Floor has been installed, carry out a check in accordance with Chapter 9, paragraph 9.2.

Clean and disinfect the bed before using it for the first time and before each use according to chapter 7.

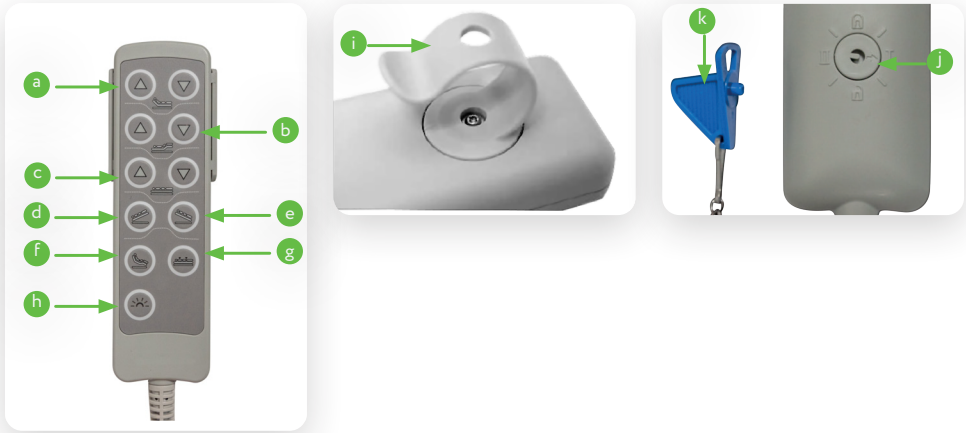
6.1 Technical overview



- a. Head end
- b. Foot end
- c. Electrically adjustable backrest
- d. Electrically adjustable thigh support
- e. Mechanically adjustable lower leg support
- f. Hand switch with nurse key
- g. Mains cable with SMPS
- h. Electric drive for backrest
- i. Electric drive for thigh support
- j. 2-part aluminium side rail
- k. lifting frame
- l. Electric lift drive for height adjustment
- m. Plastic roller head side
- n. Double Plastic roller foot side
- o. Lifting pole
- p. Triangle grab handle

6.2 Handset with locking function

The electric bed functions are operated via the handset. All functions can be locked with the nurse key.



- a. Backrest adjustment up/down electric infinitely variable 0°-80°
- b. Thigh adjustment up/down electric infinitely variable 0°-35°
- c. Lying surface up/down electric stepless 250-800 mm
- d. Trendelenburg position electrically stepless with separate locking function
- e. Anti-Trendelenburg position electrically stepless with separate locking function
- f. Comfort seating position with back adjustment, thigh adjustment and overall lying surface: head-up at the push of a button.
- g. Height adjustment for low position, electrically stepless 110-250 mm with separate locking function (Note chapter 6.6.6)
- h. key illumination
- i. Hand switch hook
- j. Lock for activating/deactivating the handset functions
- k. Nurse key

To avoid damage, the hand control should always be suspended from the hand control hook when not in use (e.g. lying surface frame or side rails).


Do not press multiple keys at the same time as this may overload and damage the system.




6.3 Locking function for handset

There is a lock on the back of the hand control. All electrical adjustment functions can be locked simultaneously by turning the enclosed nurse key in the lock.



locking function 1: 
All functions are locked.



locking function 2: 
Trendelenburg + low position are blocked. All other functions are enabled.



All functions are enabled. (I)

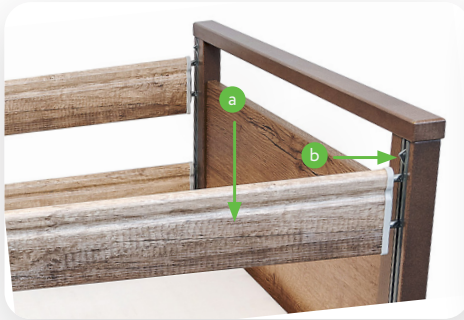


All functions are enabled. (II)

6.4 Operation of the side rails

6.4.1 The non-split wooden side rail (accessory)

1. To use the non-split side rails, lift the upper side rail **(a)** until it engages in the highest position.
2. To lower the side rail **(a)**, lift the upper side rail and simultaneously press the release button **(b)** for the side rail lock and release the side rail.



When the side rail is raised, always ensure that it is securely engaged!



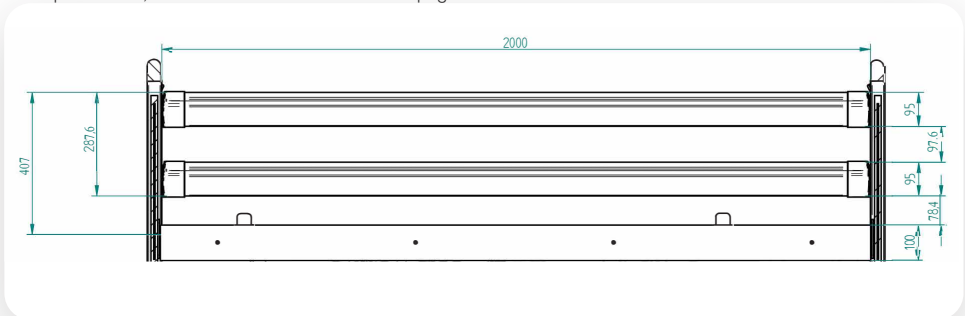
The side rails are only intended to prevent people from falling out of bed. Do not climb or lean over them under any circumstances!



Use the following overview to check the use of the correct side rail and the permissible positions or distances of the side rail variants.




Non-split side rail, divided in two with 95mm wide uprights.



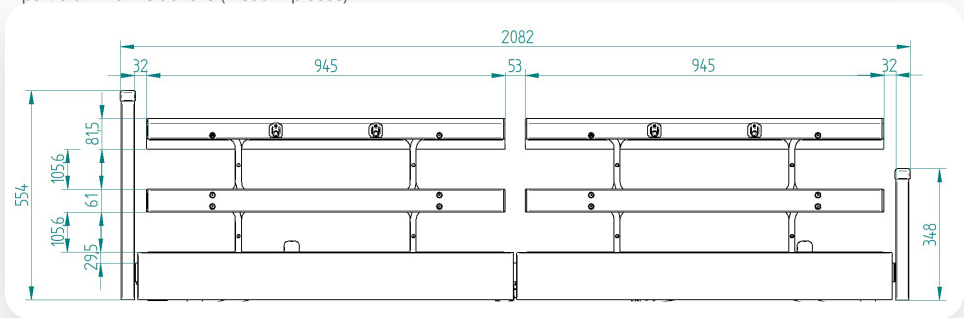
6.4.2 The split aluminium side rails (accessory)

1. To use the split side rails, pull the upper side rail element (a) upwards until you hear it click into place.
2. To lower the side rail, lift the upper side rail element and then press both release buttons (b) for the side rail lock at the same time. Lower the side rail.

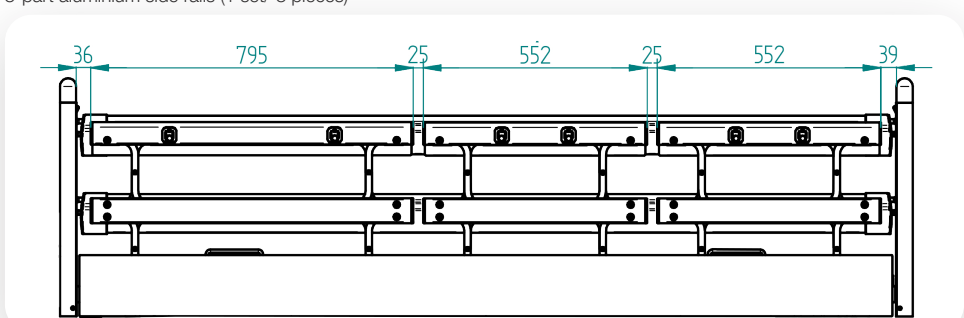


 Use the following overview to check the use of the correct side rail and the permissible positions or distances of the side rail variants.

2-part aluminium side rails (1 set/ 2 pieces)

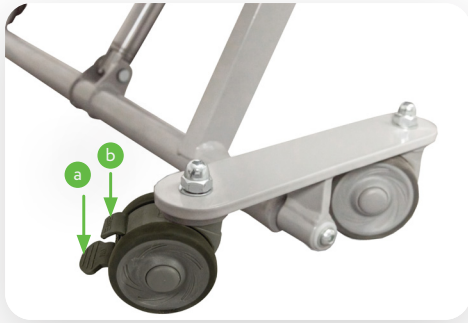


3-part aluminium side rails (1 set/ 3 pieces)



6.5 Operation of the bed castors with brake

The rear castors at the foot end of the bed can be locked and must always be locked during normal operation. This is total locking, i.e. directional locking and simultaneous braking of the roller.



Press the locking lever **(a)** down until it engages: The roller brake is locked.

Press the release lever **(b)** down until the locking lever jumps up:
The castor brake is released.

The brake may only be released to move the bed!
See also safety instructions!



6.6 Emergency lowering

6.6.1 Emergency lowering via integrated 9V battery (electric)

The control unit mounted on the lying surface is equipped with a 9V block battery, which enables the individual electrical adjustment functions to be lowered in the event of a mains power failure. If the mains power should fail, you have the option of returning the electric drives to their lowest position. Please note that this is only possible once per 9V battery, as the capacity of the 9V battery is very limited.

After using the emergency lowering once, the 9V block battery must be replaced with a new equivalent one. (Alkaline manganese battery type 6LR61)

However, the 9V block battery should be replaced every 2 years even if not in use.



6.6.2 Battery change

To replace, check or remove the 9V battery for longer storage, the battery must be removed from the battery compartment of the control unit, which is installed under the lying surface.

Replace the battery as follows:

- Disconnect the mains plug!
- Remove the plug lock by unscrewing the two cross-head screws.
- Pull the battery compartment together with the 9V battery out of the control unit **(a)**
- Disconnect the battery from the battery clip.
- Replace the battery with a new equivalent battery of the type "Alkali-Manganese battery type 6LR61"
- Slide the batteries back into the battery compartment.
- Close the battery cover again



6.6.3 Emergency lowering of the backrest (manual)

If the backrest has to be lowered in less than 30 seconds in the event of a power failure or the electric drive system of the nursing bed has failed, you can lower the backrest manually.

Observe these safety and implementation instructions, as non-compliance can lead to uncontrolled falls from the back-rest and thus to serious injuries for the user and the patient!



Always carry out the emergency lowering of the backrest by hand with two users!

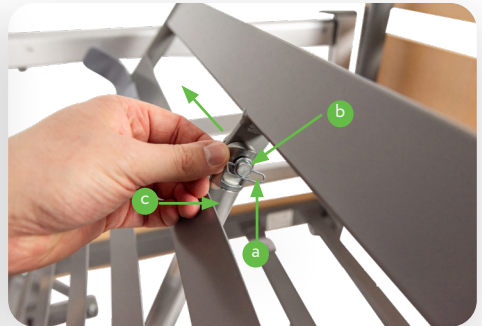
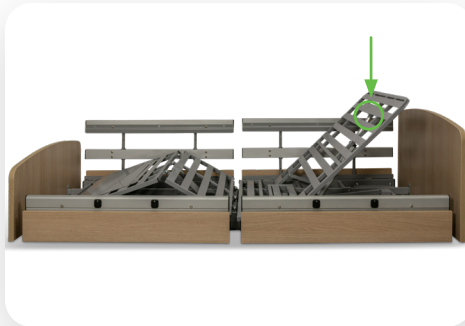


Manual emergency lowering may only be carried out by instructed users and should be practised several times under normal conditions in order to be able to lower the backrest safely in an emergency.



Execution of mechanical emergency lowering:

- The first user relieves the backrest before the emergency lowering by lifting the frame and holding it in this position. If necessary, the second user supports this process.
- The second user folds the bent safety clip **(a)** of the pin at the end of the backrest lift motor.
- Then he pulls the socket pin **(b)** out of the lifting rod **(c)**. The lift motor is now separated from the backrest and swivels downwards.
- Both users lower the backrest slowly and in a controlled manner.



Restoration of the original condition:


- Swivel the lift rod of the lift motor up again in the direction of the backrest.
- Insert the socket pin into the mounting of the lifting rod and the bed frame.
- Make sure to reinsert the socket pin from the operator side so that it is accessible at all times.
- Close the safety clip on the socket pin.

6.6.4 Trendelenburg / Anti-Trendelenburg function (option)


Optionally, the Trendelenburg positioning function (a) or Anti-Trendelenburg positioning function (b) is available for the Cadence Floor bed.


In Trendelenburg positioning, the lying surface of the nursing bed is inclined towards the head.

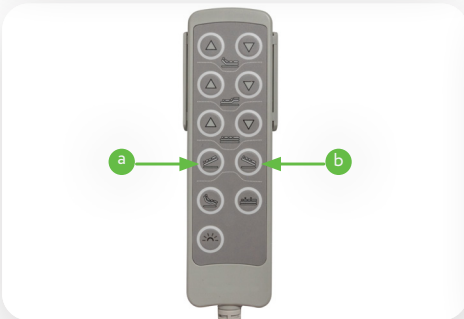
In the case of Anti-Trendelenburg positioning, the support surface is inclined towards the feet.

 Trendelenburg positioning may only be used at the instigation of a doctor, as it can have an effect on the clinical condition of the patient.

 Do not leave the patient unattended during Trendelenburg or Anti-Trendelenburg positioning.

 Locking function on the hand switch for the Trendelenburg / Anti-Trendelenburg function: If the bed is optionally equipped with the Trendelenburg / Anti-Trendelenburg function, this function can be locked separately, i.e. independently of the locking function (c) of the general adjustment functions (see Chapters 6.2 and 6.3) on the back of the hand control with the nurse's key.

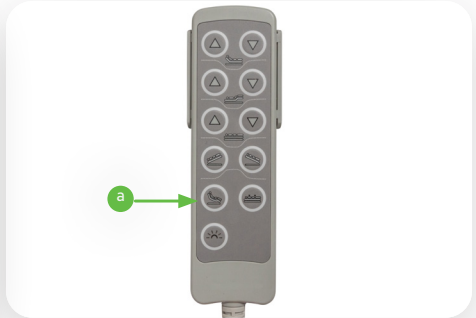
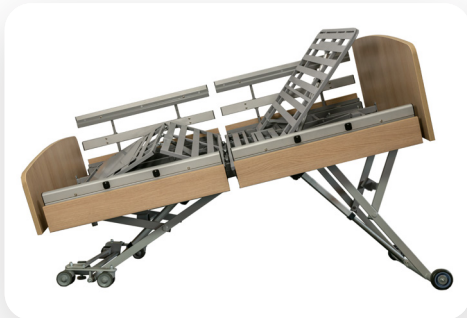
 Lock the Trendelenburg function when using the bed in application environment 4 (home care).



6.6.5 Comfort seating position

The comfort seating position enables the patient to adopt an individual seating position, e.g. when watching television. In the comfort seating position, the back section and thigh section are raised at the same time and the entire lying surface moves into the head-elevated position.

To set the comfort seat position, button (a) on the handset must be pressed until the desired position is reached.

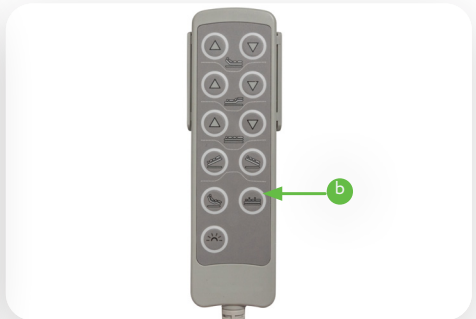


6.6.6 Lowest position

The lowest position enables the lying surface to be lowered electrically down to 240mm. The lowering of the lying surface close to the ground is used, for example, specifically to prevent falls.

To set the low position, button (b) on the handset must be pressed until the desired position is reached.

There is a lock (c) on the back of the handset to lock the setting of the lying surface in the low position. Set the padlock to lock function 2 .



The Cadence Floor has a built-in safety function to avoid the risk of crushing your feet while the lying surface is being lowered close to the ground.




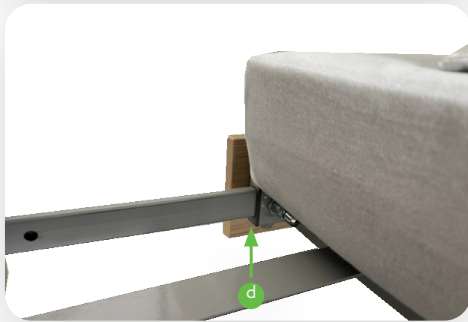
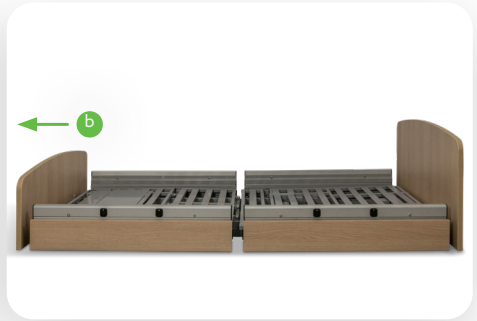
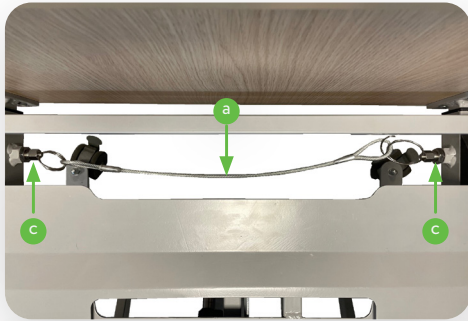
When the bed lowers and is 380mm from the floor, the bed will stop. To lower the bed further, you need to press the low position button (b). The bed now descends to the floor 110mm but moves at 50% speed.


6.7 Operation of the bed extension (accessory)

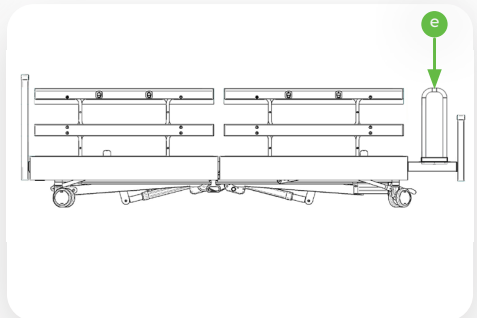
Due to the bed extension, the Cadence Floor can be adjusted flexibly and without tools for different bed lengths. The normative requirements of IEC 60601-2-52 are complied with in every position of the bed extension.

- 1. To use the bed extension, pull up the wire rope at the foot end (a) and pull out the bed extension (b).
- 2. Let go of the wire rope and pull out the bed extension until both detent bolts (c) are fully engaged in the holes.

 The bed extension can be extended up to 220cm (d).



 When extending the bed to 220cm, it is absolutely necessary to fit the foot-side protector (e). Please refer to Chapter 5.4.



Clean and disinfect the Cadence Floor bed before first use and before each reuse. The bed should be wiped by hand with a damp cloth for cleaning. We recommend suitable cleaning and care products as cleaning agents for wooden and plastic furniture.

Household cleaners without ammonia and abrasives are also permitted, but should be dermatologically tested. Solvents and abrasives are not permitted as they attack and damage the various surfaces of the bed.

For disinfection:

Note: In order to achieve effective disinfection, the nursing bed must be cleaned beforehand. Disinfection is possible by spray or wipe disinfection with commercially available disinfectants. Do not use disinfectants containing chlorine as they can have a corrosive effect on metals, plastics etc. and are not environmentally friendly.

For wipe disinfection (surface disinfection) we recommend approved disinfectants and disinfection procedures from the list of disinfectants and disinfection procedures tested and approved by the Robert Koch Institute (<https://www.rki.de>) or from the VAH disinfectant list (Verbund für Angewandte Hygiene e.V. / <https://vah-online.de>).

Before cleaning and disinfection, the mains plug must be disconnected from the mains and securely suspended. The plugs for the handset and the motors which are plugged into the control unit on the lying surface drive must be plugged in. This is necessary so that no water can penetrate into the control unit.



The electrical components must not be sprayed with a high-pressure cleaner or water jet. Only wipe disinfection is permitted.



8. Cause and remedy of malfunctions

Not every malfunction is directly attributable to a defect in the nursing bed. Before contacting Harvest Healthcare, please check the malfunction using the table below.

Malfunction	Possible cause	Remedy
No function	Mains plug not plugged in	Plug in the mains plug.
	Lock function on handset activated	Unlock the handset.
	Handset not plugged in	Insert the handset into the control unit.
	Drive not plugged in	Plug the drive into the control unit.
Reversed adjustment functions	Connection cable on the sockets reversed	Check plugs and sockets and reconnect.
No function after power failure	9V block battery is empty	Replace 9V block battery.
Bed moves very slowly	Bed can only be adjusted via battery. Mains plug not plugged in	Plug in the mains plug and replace the 9V block battery preventively.

9.1 Bases

In accordance with MPBetreibV §7 (as of 2021), operators of beds are obliged to ensure the safe and proper operation of the medical device on an ongoing basis by means of maintenance measures (inspection and maintenance). The service life of the bed depends essentially on handling and maintenance. To ensure safe operation, we recommend that a visual and functional check, including an electrical check, be carried out at least once a year and before each reuse as a guide value, under your own responsibility and with verifiable compliance with the 2% error rate (see also DGUV regulation 3 §5, table 1B). If an error rate of <2% is demonstrably achieved during the electrical test, the test cycle can be extended to a maximum of two years.

Carry out maintenance at least once a year and before each reuse according to the maintenance schedule and the test regulations according to IEC 62353 in its current version.

The following tests according to IEC 62353 apply to our beds:

1. Visual inspection
2. Leakage current measurement
3. Insulation resistance measurement
4. Functional test
5. Overall assessment and documentation

If you have any doubts about the safety or function of even a part of the bed during the maintenance measures described below, the bed must never be put back into operation. Then contact the supplier or manufacturer.



Maintenance, inspection and repair work are not allowed to be carried out on the nursing bed when it is in use and the patient is in it.



Electrical components must not be opened and must be replaced as a whole. Defective electrical components must be replaced by qualified personnel.



The electrical tests described here in accordance with IEC 62353 may only be carried out by a qualified electrician or, if suitable measuring and testing equipment with an automated measuring sequence is used, by an electrically trained person.



The safety assessment and documentation of the test results must be carried out by a qualified electrician who has the appropriate knowledge for testing beds.



9.2 Maintenance schedule

bed Type	<input type="radio"/>	Cadence Floor 90cm	<input type="radio"/>	Cadence Floor 105cm	<input type="radio"/>	Cadence Floor 120cm
Class II , Type of application part B						
Accessories	<input type="radio"/>	with wooden side rails	<input type="radio"/>	with 2-part aluminium side rails	<input type="radio"/>	with 3-part aluminium side rails
Serial No.:		Responsible:		
Location:		Inspector:		
	<input type="radio"/>	Test before commissioning	<input type="radio"/>	periodic inspection	<input type="radio"/>	Inspection after repair
Test devices used (type/inventory number):						

Pos.	Test instruction	OK	n.OK	Comment
1.	Examination of the basic prerequisite			
1.1	Is the general condition okay?			
1.2	Type plate from the nursing bed and the electrical components, legible?			
1.3	Instructions for use available and accessible to personnel?			
1.4	Appropriate and safe use?			
1.5	Are the side rails (accessories) used appropriately?			
2.	Visual inspection			
2.1	No surface damage or corrosion?			
2.2	Mechanical components and welds without defects?			
2.3	All mechanical connecting elements are fixed?			
2.4	Lying surface floor without damage?			
2.5	firm fit and no damage to the head and foot end pieces?			
2.6	All 4 castors undamaged and fixed?			
2.7	Parking brakes are undamaged and fixed?			
2.8	lifting pole with grab handle and lifting pole holder undamaged and no wear?			
2.9	Mains cable, connecting cables and plugs without damage?			
2.10	Transport protection for mains plug available?			
2.11	Strain relief for mains cable and handset securely fastened?			
2.12	All plug connections are firmly plugged in? (sealing rings without damage)			
2.13	Correct and safe cable laying? (no damage)			
2.14	Motor, SMPS power supply and mains plug housings without damage?			
2.15	Handset without damage?			
2.16	Thrust tubes of the height adjustment drives are undamaged?			
2.17	Socket pin with safety bracket on backrest drive is freely accessible for mechanical emergency lowering?			
2.18	9V block battery OK / expiration date sufficient until next test?			
2.19	Is the safe working load maintained?			
2.20	No surface damage, tears or deformations on the side rail (accessory)?			

3.	Electrical test according to IEC 62353			
3.1	<p>Insulation resistance >7MΩ? / measured value:</p> <p>Note:</p> <p>The measurement of the insulation resistance must be carried out in addition to the device leakage current measurement if there is any doubt regarding the insulation (IEC 62353).</p> <p>Examples:</p> <ul style="list-style-type: none"> • if the RCD circuit breaker (residual current circuit breaker) has tripped several times, • if liquid has been spilled over the appliance and creepage distances are therefore doubtful, or • if certain parts/components or devices are present where the insulation properties can change depending on the temperature, for example heating elements. 			
3.2	<p>Device leakage current <0.1mA? / measured value:</p> <p>Notes:</p> <ul style="list-style-type: none"> • Possible measurement methods Direct measurement or differential current measurement (IEC 62355) • Observe the test device manufacturer's specifications for the leakage current test • The measurement of the device leakage current does not have to be carried out in the normal life expectancy of the bed (within the first 10 years) if the visual and functional test has been passed if these beds are equipped with a drive set from the manufacturer limoss and a power supply unit (SMPS) from the manufacturer limoss. With these beds, the incoming mains voltage is converted into a protective low voltage of 35V in the power supply unit (SMPS). 			

4.	Functional test			
4.1	All adjustment possibilities of the nursing bed without obstacles on site?			
4.2	Does the locking mechanism for lower leg adjustment work?			
4.3	Stress test successfully carried out according to regulations?			
4.4	Function test of the handset: correct operation of the keys?			
4.5	Function test of the handset locking device: On/Off OK?			
4.6	Function test of the blocking button for the lying surface height close to the floor OK? (The lying surface can only be lowered close to the floor after the locking button has been pressed!)			
4.7	Check of the first-error safety by means of an integrated locking box in the handset without complaint?			
4.8	Track rollers, easily rotatable by 360°?			
4.9	Wheels, individual parking brakes are functional (enough braking effect available)?			
4.10	Function of the side rails, secure engagement?			
4.11	Side rail height above the mattress at least 22 cm?			
4.12	Max. Distance between the side rail spaces 12 cm?			
4.13	Are all screws on the side rail (2 pieces per side rail) present and screwed tight?			
4.14	Locking bolt without damage and fully engages.			

Overall rating

Test passed

- No safety or functional defects were found
- No direct risk, the defects detected can be rectified at short notice

Test not passed

- Device must be taken out of service until the defects have been rectified!
- Device does not meet the requirements - Modification/ replacement of components/ decommissioning is recommended!

Remarks:

Place / Date:


Inspector:

Next test:

Signature:

9.3 Check of first-error safety by means of integrated locking function in the handset

Proceed as follows to check the safety device:

 The switching positions I and II are test settings which are only used for safety checks as part of the annual inspection or after repair or before each re-use of the bed.

- 1. Move the lock to switching position I or II: First move all bed adjustments to a slightly raised position.
- 2. Set the switch positions to test position Locking function 1 or 2 (I): No electrical adjustments must be possible when the adjustment keys on the handset are pressed.



Locking function 1: Functional test 1



Locking function 1: Functional test 2



Locking function 2: Functional test 1



Locking function 2: Functional test 2

Within the scope of our terms of delivery and payment, we guarantee the perfect condition of our beds.
In the event of unauthorised modifications to the product, improperly carried out maintenance work and use contrary to the instructions for use, warranty and product liability claims shall lapse.

The service life naturally depends on the way in which the bed is used. With correct operation and appropriate use, this bed has an expected service life of 7 to 10 years.

Cadence Floor beds are suitable for re-use in accordance with the measures in chapters 7 and 9. Frequent transport, installation and adjustment reduce the service life just as much as improper handling, irregular maintenance and exceeding the safe working load or permissible load cycles of the electric drives. At the end of its service life, the bed must not be disposed of with normal household waste. For environmentally friendly disposal, please contact your local authority or Harvest Healthcare Ltd.



The electrical components (power supply units, control units, drives and hand controls) of these beds are to be treated like electronic waste in accordance with WEEE Directive 2012/19/EU (Waste Electrical and Electronic Equipment) and disposed of properly.

The components used conform to the directive 2011/65/EU (RoHS) on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

12.1 Technical data (mechanical)

Safe working load (max. permissible load)		205kg
Individual loads of the safe working load	max. patient weight	170kg
	Mattress 200x90x12cm	20kg
	Accessories	15kg
	Total	205kg
Safe working load of lifting pole		80kg
Max. patient weight		170kg
Max. mattress height at undivided wooden side rail (width 95mm) item no. 274 or 01681	12 cm -18cm	
2-part/ 3-part Aluminium-side rail item no. 01762/ 01764	12 cm -16cm	
Length	210cm (with 200cm long lying surface)	105cm (with 90cm wide lying surface)
Width	120cm (with 105cm wide lying surface)	135cm (with 120cm wide lying surface)
Height of upper edge of head section (low version)	approx. 42cm – approx. 111 cm	
Height of upper edge of foot section (low version)	approx. 25cm – approx. 94 cm	
Height of upper edge of head / foot section (standard version) Height adjustment of lying surface	approx. 59,7cm – approx. 128,7 cm electrically stepless up to approx. 11-80cm	
Backrest adjustment	electrically stepless up to approx. 80°	
Thigh rest adjustment	electrically stepless up to approx. 35°	
Foot elevation	mechanical, -25° to 0° in 6 steps	
Angle Trendelenburg position:	15°	
Angle Anti-Trendelenburg position:	15°	
Lying surface floor	Steel spring slats	
Wooden side rails incl. end caps can be lowered on both sides:	197,3 x 9,5 x 2,8cm	
2-part aluminium-side rail	element headside/ footside:	width 945mm
3-part aluminium-side rail	element headside:	width 795mm
	center element:	width 552mm
	element footside:	width 552mm
Bed castors	Ø 75 mm	
Max. bed castor load capacity	90kg (static)	
Unladen weight of the bed	142kg (with 90cm wide lying surface)	
	164kg (with 105cm wide lying surface)	
	186kg (with 120cm wide lying surface)	

materials

Frame, lying surface etc.: steel (powder-coated)
 Headboard and footboard: wood (veneered)
 Side rails: steel (powder-coated) or plastic and aluminum
 Electronic components: plastic and aluminum

12.2 Technical data (electrical)

Control unit + power supply SMPS handset
 Nominal voltage
 Nominal frequency
 Current type
 Output SMPS
 Max. power consumption
 Rated recording in idle state
 Switch-on cycle
 Emergency lowering battery
 Protection class
 Protection class of the drives
 Operating noise
 Lying surface drive backrest
 Lying surface drive thigh
 Height adjustment drive
 electrical cables

MC222 + PS1102 (Limoss company)
 LHC148 (Limoss company)
 230V
 50/60Hz
 AC~
 35V; 1,7A
 2,4A
 0,5 Watt
 Max. ED 2 Min. / Min. AD 18 Min (max. 5 switching cycles/min.) 2 pieces 9V block battery (alkaline manganese 6LR61)
 II
 IPX4 (protec. against splashing water all sides)
 <53 db(A) at a distance of 1m
 1 x MD 125 (Limoss company)
 1 x MD125 (Limoss company)
 2 x MD121 (Limoss company)

Power cable: length approx. 2,10-2,60m spiral cable); 0,75mm²
 Handset cable: length approx.2,60m (spiral cable); 0,75mm²
 Motor cable: Lengths different (spiral cable); 0,75mm²

12.3 Technical data Environment

Temperature range Operation
 Temperature range storage/transport Atmospheric humidity
 Atmospheric pressure

+10°C bis +40°C
 -20°C bis +60°C
 30% bis 75% rel
 between 795 and 1060 hPa

12.4 Classification



Medical device
 Degree of protection according to IEC 60601-1

Class 1
 Application part of type B
 protection against electric shock

Housing protection class according to IEC 60529

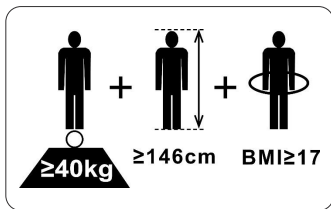
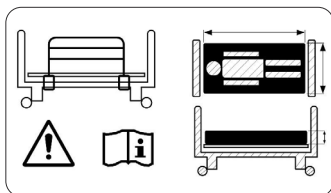
IPX4 (protection against splashing water on all sides, but not suitable for wash tunnels)
 10%, On 2Min/Off 18Min
 5
 1x yealy

Max. Duty cycle
 Max. Switch-on cycles / min
 Safety inspections

12.5 Weights of the individual components

Lying surface	55,00 kg
Headboard/footboard panels	10,30 kg/piece
Lifting system	57,00 kg
Wooden side rail 95 mm (4x)	10,50 kg
Aluminium side rail	6,20 kg
Lifting pole	4,20 kg

12.6 Identification plates



Identification plate

Position:
Glued to the right inside of the lying surface frame

Note:

- 1) Exchangeable mattresses
- 2) Removable side rails

Position:
Frame upper side of the bed lifting frame at the foot side

Note:

Use of the bed for adults

Position:
Frame upper side of the bed lifting frame at the foot side

Identification plate
lifting pole (Accessories)

Position: lifting pole



Identification plate
bed extension (Accessories)





Identification plate
2-part aluminium side rail (Accessories)





Identification plate
3-part aluminium side rail (Accessories)


12.7 Information on electromagnetic compatibility


 The Cadence Floor bed meets the normative requirements with regard to its electromagnetic emissions and its immunity to interference. Therefore, when the bed is used as intended, no functional restrictions are expected as a result of possible electromagnetic interference from adjacent electrical devices.

 Attention: Nevertheless, the use of the care bed in the immediate vicinity of other electrical devices should be avoided in order to prevent the care bed from malfunctioning due to electromagnetic interference. If it is necessary to use the care bed in addition to other electrical devices, the proper functioning of the care bed and these devices should be observed.

 Only spare parts (mains cable, handset, motors, etc.) and accessories that have been approved by the manufacturer tecfor care GmbH may be used in order to be able to guarantee trouble-free operation of the care bed.

 The use of other accessories, other converters and other cables than those provided by tecfor care for this care bed can result in increased electromagnetic interference emissions or reduced electromagnetic interference immunity of the care bed and lead to faulty operation.

 Portable HF communication devices (mobile phones, two-way radios, etc.) including their accessories (e.g. antenna cables and external antennas) should not be used within a distance of less than 30 cm from the electrical components and cables of the Seracare Low care bed. Non-observance can lead to a reduction in the performance characteristics of the care bed.

 The care bed Seracare Low is intended for use in the following specified electromagnetic environment during its entire service life in order to maintain basic safety and functional characteristics. The operator or user of the care bed should ensure that it is used in such an environment.

The care bed Seracare Low meets the requirements of the following EMC standards for interference emission and interference immunity:

Ambient limit values of the interference emissions	
Phenomenon	operation site in the field of medical care in a home environment
Conducted and radiated interference emissions	CISPR 11, Group 1, Class B
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
Electrostatic discharge	IEC 61000-4-2	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV
High-frequency electromagnetic fields	IEC 61000-4-3	all 10 V/m ; (80 MHz up to 2,7 GHz; 80% AM at 1 kHz)
High-frequency electromagnetic fields in the immediate vicinity of wireless communication devices	IEC 61000-4-3	see table Test specifications for the immunity of sheathings to high-frequency wireless communication equipment (at the end of this chapter)
Magnetic fields with energetically rated frequencies	IEC 61000-4-8	30 A/m, 50 Hz or 60 Hz
Magnetic fields at close range	IEC 61000-4-39	no magnetically sensitive components, therefore no immunity rating required

AC port for supply input		
Phenomenon	EMC basic standard or test method	Immunity test level
Short, transient electrical disturbances / bursts	IEC 61000-4-4	± 2 kV, 100 kHz repetition frequency
Surges: conductor to conductor	IEC 61000-4-5	± 0,5 kV, ± 1kV
Conducted interference induced by high-frequency fields	IEC 61000-4-6	3 V 0,15 MHz up to 80 MHz 6 V in ISM and amateur radio frequency bands between 0,15 MHz and 80MHz 80 % AM at 1kHz
voltage dips	IEC 61000-4-11	0% U _n ; ½ period at 0, 45, 90, 135, 180, 225, 270 and 315 degree
		0% U _n ; 1 period and 70% U _n ; 25/30 periods single-phase at 0 degree
voltage interruptions	IEC 61000-4-11	0% U _n ; 250/300 periods

DC port for supply input		
Phenomenon	EMC basic standard or test method	Immunity test level
Short, transient electrical disturbances / bursts	IEC 61000-4-4	± 2 kV 100 kHz repetition frequency
Surges: conductor to conductor	IEC 61000-4-5	± 0,5 kV, ± 1kV
Surges: conductor to earth	IEC 61000-4-5	± 0,5 kV, ± 1kV, ± 2kV
Conducted interference induced by high-frequency fields	IEC 61000-4-6	3 V 0,15 MHz up to 80 MHz 6 V in ISM and amateur radio frequency bands between 0,15 MHz and 80MHz 80 % AM at 1kHz

Patients' connection ports		
Phenomenon	EMC basic standard or test method	Immunity test level
Electrostatic discharge	IEC 61000-4-2	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air
Conducted interference induced by high-frequency fields	IEC 61000-4-6	3 V 0,15 MHz up to 80 MHz 6 V in ISM and amateur radio frequency bands between 0,15 MHz and 80MHz 80 % AM at 1kHz

SIP/SOP-Tor (Signaleingangs-/Signal Ausgangsteilen)		
Phenomenon	EMC basic standard or test method	Immunity test level
Electrostatic discharge	IEC 61000-4-2	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air
Short, transient electrical 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 up to 80 MHz 6 V in ISM and amateur radio frequency bands between 0,15 MHz and 80MHz 80 % AM at 1kHz

Test specifications for the immunity of sheathings to high-frequency wireless communication equipment				
Test Frequency (MHz)	Frequency band (MHz)	Radioservice	Modulation	Immunity test level (V/m)
385	380 to 390	TETRA 400	Pulse modulation 18 Hz	27
450	430 to 470	GMRS 460, FRS 460	FM ± 5% lift, 1kHz sine	28
710	704 to 787	LTE band 13, 17	Pulse modulation 217 Hz	9
745				
780				
810	800 to 960	GSM 800/900, TETRA 800 iDEN820, CDMA 850, LTE Band 5	Pulse modulation 18 Hz	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	28
1845				
1970				
2450	2400 to 2570	Bluetooth, WLAN 802.11 b/ g/n, RFID 2450, LTE band 7	Pulse modulation 217 Hz	28
5240	5100 to 5800	WLAN 802.11 a/n	Pulse modulation 217 Hz	9
5500				
5785				



The minimum distances for higher immunity test levels shall be calculated using the following equation.

$$E = \frac{6}{d} \sqrt{P}$$

P = maximum power in watts (W)
 d = Minimum distance in meters (m)
 E = Immunity test level in volts per meter (V/m)

If a test with these increased test levels is passed, the stated minimum distance of 30cm can be replaced by the new minimum distance calculated for the increased immunity test levels.

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