Hillrom™

Centuris™ Pro Bed
Instructions for Use
LI900B1

194568
Rev. 7

EN

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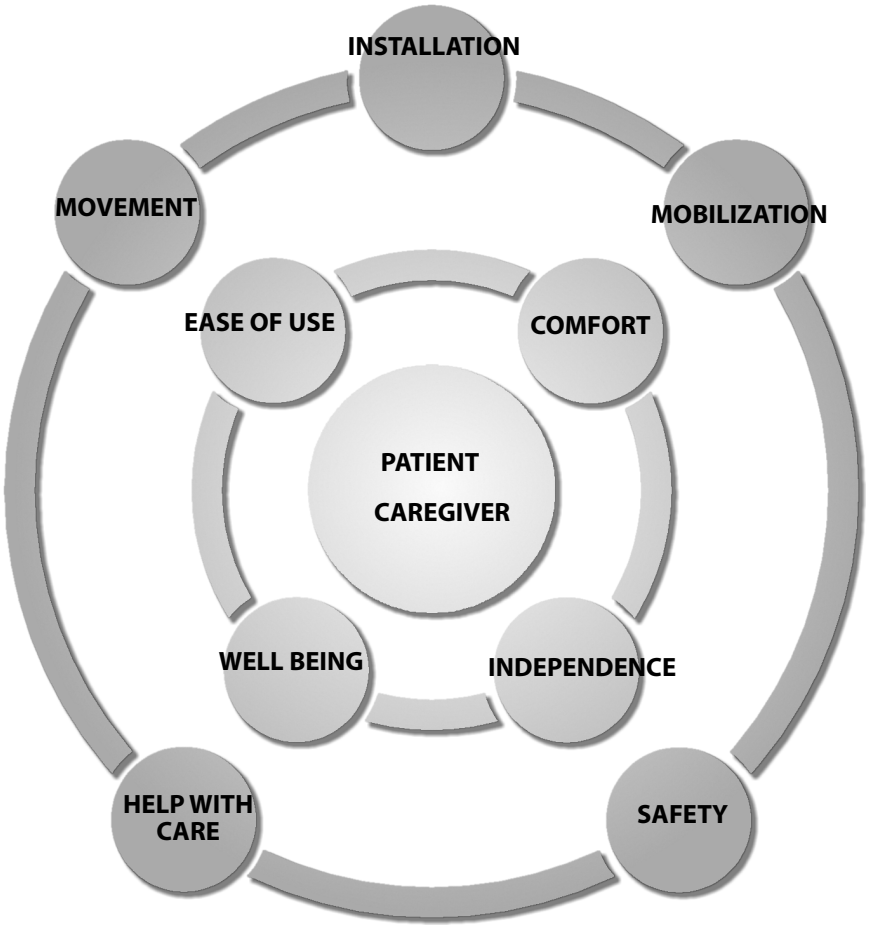
The structure of the Instructions for Use

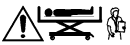
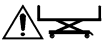


For every type of use, Hillrom™ beds provide patients with optimal comfort and greater independence for a feeling of well-being that is conducive to a swift recovery. They are also easy to use for caregivers.

Symbol definitions

This Instructions for Use contains different typefaces and icons designed to improve readability and increase understanding of its content. Note the following examples:

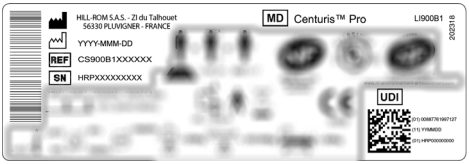
- standard text - normal character style used for "basic" information.
- **Boldface text**- emphasizes a word or phrase.
- ⓘ highlights special information or explains very important instructions,
- The symbols below represent different risks or hazards:

Symbol	Description
	Warning • This symbol indicates that the failure to follow the associated recommendation can put the patient or the user in danger, or damage the equipment.
	Caution • This symbol indicates that the failure to follow the associated recommendation can result in damage to the equipment.
	Tip
	Risk of falling
	Caught hazard warning
	Risk of crushing an upper limb
	Chemical Hazard Warning
	Electric Shock Hazard

Bed model and country of use

Certain bed features or accessories may be available or not, depending on the destination country. These features are identified with an asterisk (*) and the accessories or the additional parts are identified by two asterisks (**).

To identify your bed model, its serial number SN (HRPXXXXXXXXX), its UDI and its date of manufacture, refer to the identification label (see “Electrical characteristics” page 13). Your bed model, LI900B1, is composed of a chassis/sleep surface whose reference REF starts with CS900B1 and two endboards (a headboard and a footboard).



- REF: CS900B1XXXXXX: CS900 = Centuris™ Pro; B = Version; 1XXXXXX = unique 7-figure numerical code according to different criteria, such as the voltage, the electrical functions, the language, etc.
- SN: HRPXXXXXXXXX: HRP = Hill-Rom Pluvigner; XXXXXXXXX = incremental code.
- UDI; Unique Device Identification.

Safety and Usage Tips

Intented Use

The Centuris™ Pro beds LI900B1 with electric comfort Trendelenburg / Reverse Trendelenburg are variable-height beds designed for acute, general and ambulatory care or care during long hospital stays for **adult patients (**EN 60601-2-52, application environments 2, 3 and 5). They are designed with the needs of the whole medical team in mind and the benefits are to facilitate the use of monitoring equipment and the transfer of patients to examination wards, etc.

Contraindications

- children (aged less than 12 or under 1.46 m tall),
- persons measuring more than 1.85m in height,
- persons with BMI below 17,
- persons weighing less than 40 kg,

Features

The Centuris™ Pro beds:

- are fitted with batteries providing protection against power outages. The electric Trendelenburg is not an emergency function.
- fitted with Ø 150mm casters can be used to transfer patients.

Intended Users

The Centuris™ Pro beds are designed to be used by Qualified Staff. Patients and Visitors can also use the Centuris™ Pro medical beds depending on authorization given by Qualified Staff.

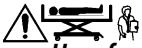
First use

⚠ Before using the bed, it is essential to have a thorough understanding of this manual. This manual contains instructions for general use and maintenance and guarantees improved safety. Caregivers must have access to this manual.

Training can be provided on demand.

Caregivers must be informed of the risks that may be encountered in the use of electric beds.

The many sources and types of accessories, hardware, or medical devices that may be used together with this bed do not enable Hill-Rom to guarantee both the safety and conformity of all the combinations thus created. The operator who creates these device combinations must therefore ensure that security and conformity requirements are met.



Use of accessories, transducers and cables other than those specified or provided by Hill-Rom could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

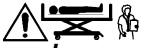
Waste packaging (plastic, cardboard, metal, wood, etc.) must follow suitable recovery circuits with a view to being recycled.

Before installing the bed for the first time or after bringing the bed and its accessories out of storage:

- ensure that the bed and its various parts are at room temperature,
- only connect the bed to a mains electric power supply with earth protection (see "Electrical safety" page 8),
- the power plug must be accessible to disconnect the bed,
- wait 12 hours until the battery is fully charged before using the bed without the mains power supply,
- make sure that all the moving parts are in good working order,
- make sure that the bed has been cleaned and disinfected (see "Decontamination" page 61).

Risk prevention

General recommendations

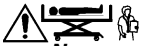


In general:

- ***check that nothing (e.g. objects, accessories or power cable) or any persons (e.g. children, limbs) will interfere with the movement of the mobile parts of the bed before actuating them. An intermittent beep sounds when one of the bed's movements is hindered.***
  - ***during a movement or combination of movements of a mobile part of the bed (eg, backrest, sleep surface, siderail), be vigilant (for oneself, the patient or any other person) on the risks of pinching or crushing between moving parts or with a fixed part.***
- ***always check (e.g. to and fro movements) that the various locking mechanisms are in good working order (e.g. siderails, extensions, grip handles, brakes).***
- ***sufficiently qualified nursing staff determine the usage condition suitable for the various functions and the degree of supervision to ensure that the patient uses the bed safely.***

When the patient is left unattended:

- ***apply the brakes to prevent any risks of falling, especially if the patient leans on the bed when getting in or out,***
- ***leave the sleep surface in the lowest position to avoid serious consequences in the event of falling,***
- ***use the siderails to secure the patient and reduce the risk of falling accidentally,***
- ***lock any function that, if misused, could worsen existing injuries or pathologies, or even result in bodily injury,***
- ***never leave the bed in the Trendelenburg position.***



Never modify the bed without Hill-Rom's prior written consent. Alterations could result in injury to the patient or damage to the bed.

Only use manufacturer's parts and accessories.

Never place objects or equipment on the chassis or use it to support a person.

Do not use of the bed with loads in excess of the safe working load.

Notice to Users and/or Patients:
Any serious incident that has occurred in relation to the device, should be reported to the manufacturer and the Competent Authority of the Member State in which the user and/or patient is established.

Recommendations for the siderails

In the case of patients suffering from particular behavioral difficulties (e.g., agitation, mental confusion, loss of sense of direction, obsessive behavior, old patients, weakness, etc.), properly trained medical staff should ascertain how the siderails should be used (irrespective of the model or type), whether the patient should be monitored closely or immobilized and whether the patient helpers should be left in position, in order to ensure that patients use the bed in complete safety.

Certain national health authorities have issued guidelines risks to patients and the reduction of these hazards, as indicated below.

It is recommended that patients at risk be identified in each establishment or ward so that the safety measures most appropriate to their particular needs can be implemented.

One measure which has already proved effective is to draw up a protocol specifying:

1. situations and conditions for siderail use and authorized mattress type or model,
2. for all patient monitoring procedures, both for restrained and unrestrained patients, including during intervals,
3. circumstances under which patients must be restrained according to the instructions and recommendations of the manufacturer of the said restraining devices.

The siderails are designed to help reduce the risk of patients falling out of bed accidentally. They are not designed to restrain or immobilize the patient. Restraining straps or other devices must not be fastened to the half-length siderails (e.g., straps).

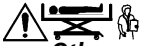
Recommendations for the mattresses

Hill-Rom shall not be held liable for any problems occurring if the mattress used is not included in the list of equipment recommended by Hill-Rom (see “References of recommended mattresses” page 24).

Despite the protective height above the mattress and the top of the siderail, patients can still potentially fall or become trapped in the spaces around the mattress.

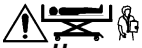
Use of a mattress thicker than the thickness recommended in “References of recommended mattresses” page 24 may reduce the effectiveness of the siderails. Thicker mattresses can increase the risk of falling and narrower mattresses can increase the risk of patients becoming trapped. In such cases, the patient must be monitored closely.

As assessed by the “Hospital Bed Safety Workgroup” guide and the standard EN 60601-2-52, the mattress label on page 22 lists the mattresses recommended for use on the Centuris™ Pro to offer the safest conditions. The therapeutic benefits of the other therapeutic mattresses listed in page 22 outweigh the residual risk of entrapment or fall incurred by their use.



Other mattresses may be used, but the manufacturer must always be consulted to make sure that the bed/mattress/siderail combination does not affect the bed's performance, its suitability for use or its safety characteristics.

If the bed is fitted with an electrically powered air mattress, the power cord must be routed so as to prevent it from being cut by the moving parts of the bed (refer to the instructions of the mattress).

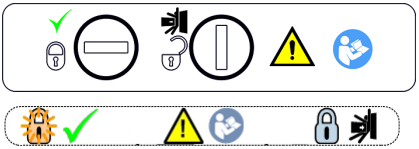


Users must check the compatibility of the patient's weight and the accessories placed on the bed and the mattress system in view of the specifications of the medical bed and the mattress system.

If the mattress power cord is unplugged, it is advisable to store it on the support provided by the mattress supplier.

Recommendations for the function lockouts

The electrical function management control prevents any unintended bed movements that might cause injury to the patient.



For safety reasons, it is advisable to use the lock-out functions when treating the patient or working on the bed (e.g., examinations, transfers, maintenance), when the patient is left unattended and when caregivers believe that the patient is not in a fit state of health to operate the controls in safety.

It is thus the responsibility of the nursing staff to authorize the patient to use certain bed functions, including the HiLow.

ⓘ *The Trendelenburg / Reverse Trendelenburg functions must only be accessible to caregivers.*

Electrical safety

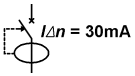
When direct intravascular or intracardiac connections are in use, the electric potentials of all the unprotected metal parts need to be equalized. The bed must be connected to a mains electric power supply with earth protection.

In an environment where the electrostatic discharges are prevalent, we recommend using an antistatic caster.

The mains power supply for the bed must comply with relevant standards:

- NF C 15-100 and NF C 15-211 (France),
- International Electrotechnical Commission (IEC) 364 for other locations.

Check that the bed's power requirements on the identification label (see "Electrical characteristics" page 13) correspond to the power supply voltage of the hospital.



The power supply should be equipped with a maximum 30 mA earth leakage circuit breaker, in compliance with IEC 364-5-53.

ⓘ *All the parts of the bed that are within the patient's reach, even if they are under the frame, are applied parts.*

If the integrity of the protective conductor is in doubt, the beds fitted with batteries must be used in battery mode.

In compliance with standards relating to electromagnetic interference for medical equipment, this product does not interfere with other medical devices or is not susceptible to interference when combined with other medical devices that also comply with the electromagnetic standards in force.

Some devices, particularly older ones that do not comply with the electromagnetic compatibility standards, may however undergo interference or may themselves interfere with the working of this product.

The users of such devices are responsible for ensuring that any malfunctions will not endanger the patient or any other person.

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

Ensure that the power cord is unplugged and hooked to the bed before moving the bed (see "Securing the power cable" page 59).

Only duly qualified and authorized staff should carry out electrical maintenance.

Never clean or service the bed without unplugging it from the mains power supply and disconnecting the battery.

The battery backup must never be left in direct contact with fire, placed in liquid, or discarded in a refuse bin. In the event of the battery being damaged, see "De-commissioning" page 66.

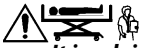
This label indicates that the bed **must never be used with an oxygen tent or in explosive atmospheres** (presence of inflammable gases or vapors)**.** Use only nasal tubes and oxygen masks. For reasons of safety, masks and tubes should always be kept at a higher level than the sleep surface.

Always lock out the HiLow function before any cleaning or maintenance operations.

If the bed is equipped with a battery, and the bed is stored for long periods of time, the battery must be charged every 3 months. Failure to do so could result in damage to the battery.

A continuous beep when activating a movement sounds to indicate that the battery needs recharging.

General precautions for the place of use



It is advisable not to use the bed under the following conditions:

- ***in hospital wards other than the intended ward (see "Bed model and country of use" page 3),***
- ***climatic conditions outside the corresponding ranges recommended by Hill-Rom,***
- ***in hyperbaric chambers,***
- ***in explosive atmospheres,***
- ***in the presence of flammable gases or vapors,***
- ***with oxygen tent type respiration devices or devices that extend below the sleep surface,***
- ***outdoors or to transport a patient in a vehicle,***
- ***moving the bed over soft ground or inappropriate surfaces,***
- ***moving the bed along slopes of over 10° (with or without a patient).***

Climatic restrictions

Service temperature	10° and +40°
Service humidity	30% - 85%
Working atmospheric pressure	700 hPa to 1,060 hPa

Precautions for transport and storage

The following conditions must be met to ensure that the bed and its accessories are shipped and stored in complete safety.

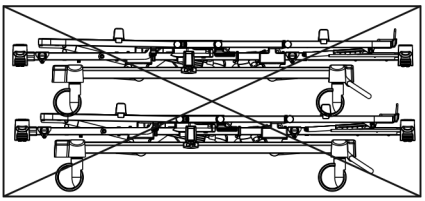
During shipment[a], the bed must be:	When stored, the bed must be:
- in the lowered position - all functions locked out - covered, brakes applied and all moving parts secured - protected from fluid ingress	- in the lowered position - all functions locked out - covered, brakes applied - protected from fluid ingress

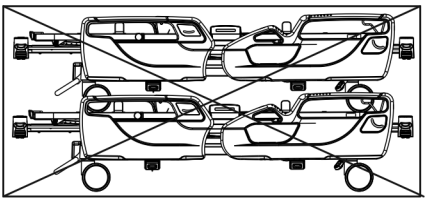
a. Transport does not include the transfer of the bed between wards with or without patients.

Climatic restrictions on transport and storage

Transport/storage temperature	-30° and +50°
Transport/storage hygrometry	20% - 85%
Transport/storage atmospheric pressure	700 hPa to 1,060 hPa

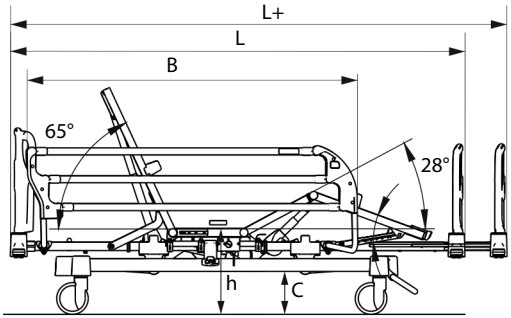
During shipment or storage, beds should not be stacked one on top the other.

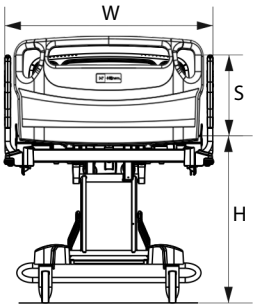


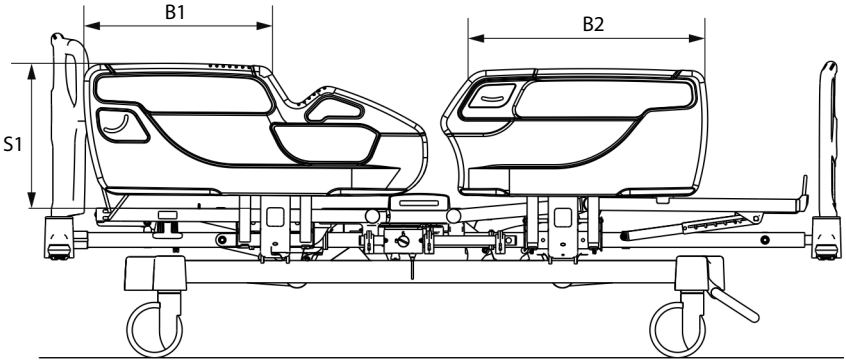


Technical specifications

Hill-Rom has an ongoing continuous improvement policy. Therefore specifications are liable to be altered without notice.







Features	Value
Maximum width (W)	995 mm[a]
Maximum length (without extension) (L)	2162 mm[a]
Maximum length (with extension closed) (L)	2162 mm[a]
Maximum length (with extension open) (L+)	2362 mm[a]
Length of long siderail protection (B)	1421 mm[b]
Height of long siderail protection (without mattress) (S)	385 mm[ab]
Length of the head half-siderail protection (B1)	499 mm[a]
Length of the foot half-siderail protection (B2)	631 mm[a]
Height of long siderail protection (without mattress) (S1)	393 mm[a]
Low position (150[d] diameter casters[cd]) (h)	397 mm[a]
High position (150[d] diameter casters[cd]) (H)	768 mm[a]
Chassis clearance (150[d] diameter casters[cd]) (C)	203 mm[a]
Head section[e] incline	+ 65°[a]
Thigh section[e] incline	+ 28°[a]
Foot section[e] incline	- 3° to -22°[a]
Trendelenburg/Reverse Trendelenburg	- 17°/+ 17°[a]

Features	Value
Maximum patient weight 220 kg SWL version	155-185 kg[f]
Maximum tare of long siderails[g]	125 kg
Maximum tare of half-siderails without an extension[g]	133 kg
Maximum tare of half-siderails with an extension[g]	137 kg
Maximum temperature of applied parts at 40° C	56,5° C
Unweighted peak acoustic pressure levels	<120 dB
Maximum measured level of weighted acoustic pressure	42 dBA

a. These are average values, which may vary according to manufacturing tolerances.
b. Bed fitted with AD271B siderails
c. Dimensions in mm.
d. An antistatic version is also available.
e. Maximum inclination in relation to sleep surface
f. SWL 220 kg / the maximum patient weight varies according to the mattress and accessories
- 155 kg as per EN60601-2-52 (acute care)
- 185 kg as per EN60601-2-52 (other environments).
g. Without mattress or accessories.

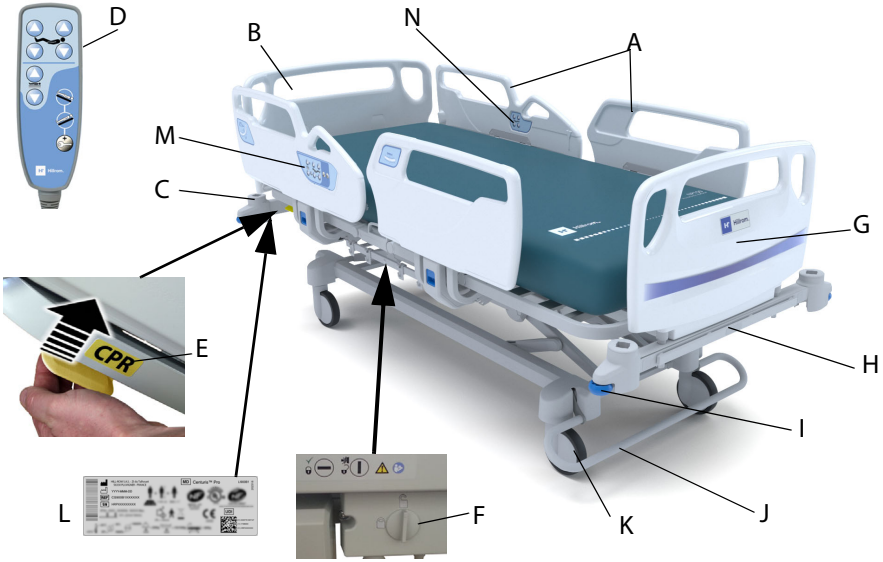
Electrical characteristics

Characteristic	100-240V*	230V*
Voltage	100-240V AC	230V AC
Frequency	50/60 Hz	50/60 Hz
Power supply unit maximum power load	500 VA	300 VA
Power supply unit fuse rating	2 x 4.0 A T	2 x 1.25 A T
Electric shock protection	Class I	
Class according to IEC 60601-1	Type B	
Protection against harmful ingress of water (according to IEC 60529)	IPX4 / IPX6[a]	
Duty cycle	10% (2min/18min)[b]	

a. Option
b. Do not operate electrical functions continuously for more than 2 minutes in any 18 minute period when the bed is loaded at the safe working load value as this may damage electrical components. The power supply of the actuator is temporarily cut off if the load factor is exceeded when using the HiLow.

Overview

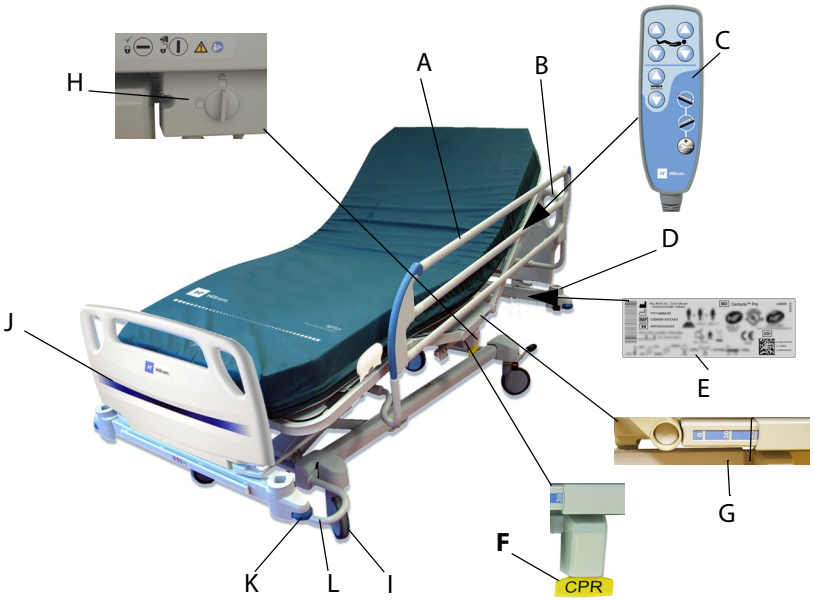
Bed with half-siderails



Item	Name	Item	Name
A	Half siderails[a]	H	Extension + linen holder[a]
B	Headboard	I	Bumper (4)
C	2 sockets for I.V. pole and patient helper	J	Central brake and steer bar control
D	Control pendant[a]	K	150 mm diameter single band casters
E	Head section “CPR” control[a]	L	HRP and identification labels
F	General lock-out unit of the electrical functions	M	Caregiver half-siderails controls[a]
G	Footboard	N	Patient half-siderails controls[a]

a. Equipment varies depending on bed model

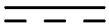
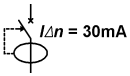
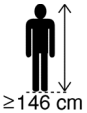
Bed with long siderails



Item	Name	Item	Name
A	Removable metal siderails[a]	G	Head section angle indicator
B	Headboard	H	Electric function lock-out unit
C	Control pendant	I	150 mm diameter single band casters
D	2 sockets for I.V. pole and patient helper	J	Footboard
E	HRP and identification labels	K	Bumper (4)
F	Head section “CPR” control	L	Central brake and steer bar control

a. Equipment varies depending on bed model

General Symbols

	Manufacturer		Date of manufacture
	Product reference		Serial number
	General safety sign		Equipotential terminal
	Refer to the user manual.		Type B Equipment
	DO NOT BIN, follow the local recycling regulations.		Direct Current
	Danger - do not use		Alternating Current
	Recyclable Material		Earth leakage circuit breaker rating
	Total weight authorized during moving		Body Mass Index ≥17
	Patient weight ≥40 kg		Patient height ≥146 cm
	Atmospheric pressure limits		Hygrometry limits
	Temperature limits		Maximum patient weight
	Protective earth		Safe working load (SWL)
	Do not store in the place shown		No oxygen tents

CE	Medical Device conformity mark		Steam Cleaning
NF MÉDICAL - LITS NF178-01/01 www.lne.fr	NF MEDICAL - LITS compliant	NF ENVIRONNEMENT AMEUBLEMENT	NF ENVIRONNEMENT compliant bed
RoHS	Compliant with the ROHS Europe regulations		Compliant with the ROHS China regulations
UDI	Unique Device Identifiant	MD	Medical Device
	Duty cycle		

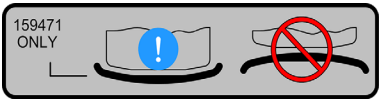
Function Symbols

Head section CPR

CPR

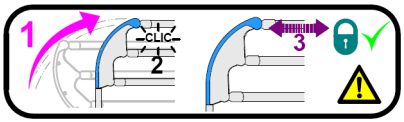
Information page 45

Headboard position



Information page 26

Siderail lock*

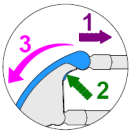


Information page 38

Siderail assembly lock*

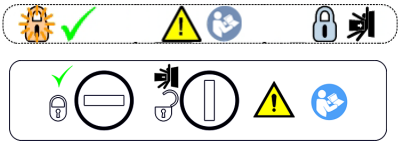
Information page 38

Siderail release*



Information page 38

Electric functions lockout*



Information page 8

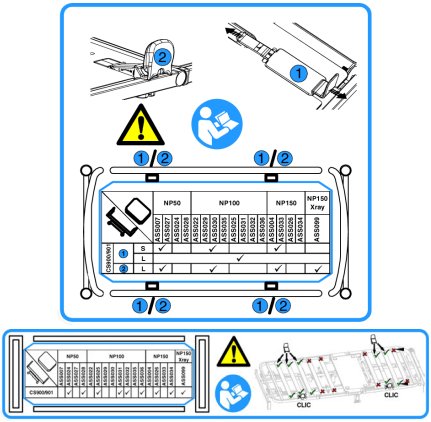
Do not sit or climb on the linen holder*

Information page 47

Do not sit or climb on the extension*

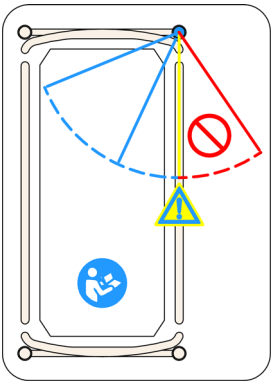
Information page 27

References of recommended mattresses*



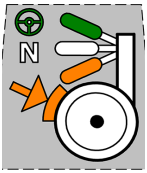
Information page 22 and page 22

Patient helper position



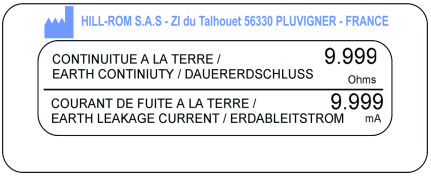
Information page 33

Caster control



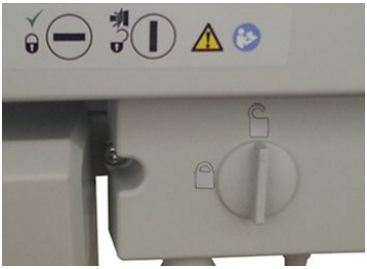
Information page 57

Earth continuity and earth leakage current

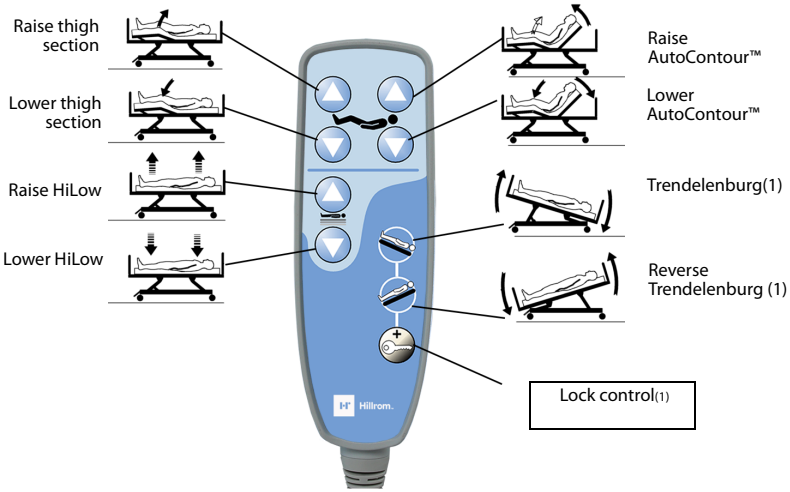


Electrical controls

General lock-out unit*

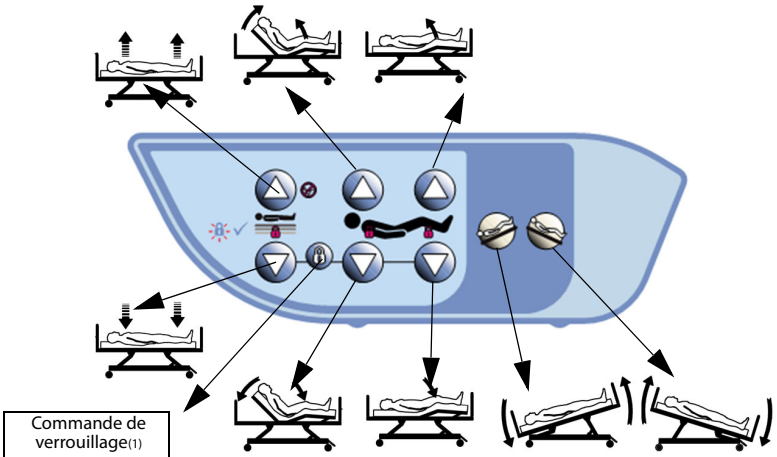


Control pendant*

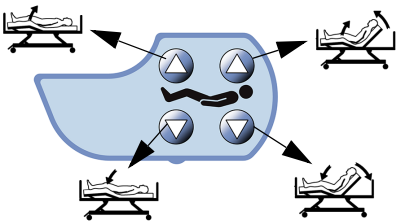


1. Functions available only to the caregiver.

Caregiver half-siderail control



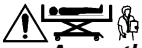
Patient half-siderail control



1. *Functions available only to the caregiver.*

Installing the patient

Before placing the patient on the bed

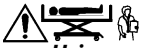


Assess the various risks, including but not limited to the following (incomplete list):

- ***make sure that all the functions of the bed are in good working order,***
- ***caught hazard,***
- ***potential falls of the patient,***
- ***patient in state of confusion,***
- ***patient's learning ability,***
- ***persons lacking the mental capacity to recognize unsafe actions,***
- ***unauthorized persons,***
- ***check the list of recommended mattresses on the label on the adjustable head section.***

ⓘ *All persons authorized to use the bed's functions must be capable of doing so in a safe and controlled manner. In case of doubt, the bed's functions must be locked.*

Accessories and peripheral equipments

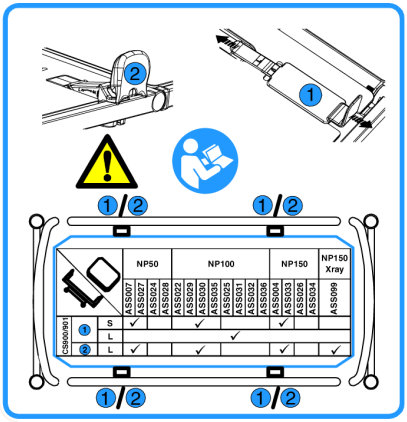


Using accessories and peripheral equipments other than those recommended by Hill-Rom may incur risks of damage or accidents to users.

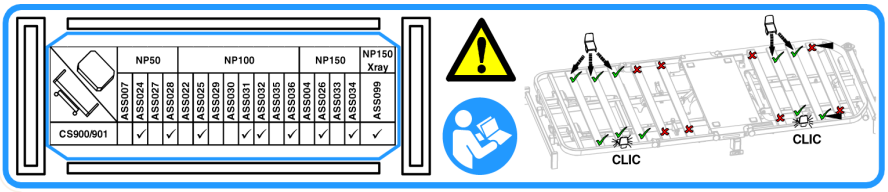
Mattress**

For the Centuris™ Pro bed, Hill-Rom recommends the mattresses listed below, which are compatible with the safety recommendations (see “Risk prevention” page 5):

Mattress label for bed with half-siderails



Mattress label for bed with long siderails AD271B

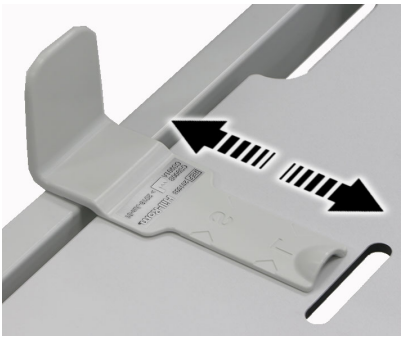


Folding mattress clamp

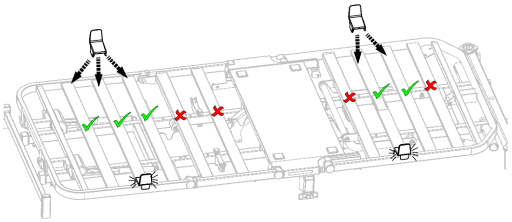
When installing a mattress extension cushion, the clamp must be folded to avoid any contact with the lower limbs.

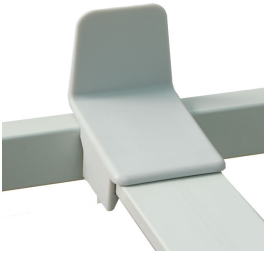
Adjustable mattress clamp for bed with half-siderails

The position of the clamps must be adjusted according to the width of the mattress in order to center and secure the mattress.



Mattress clamp clipped on batten





To avoid creating entrapment zones, carefully center and align the mattress on the sleep surface using:

- ***the folding foot clamp***
- ***the adjustable clamps (position L) on the head section and the fixed clamps on the foot section for beds with half-siderails, or the fixed clamps on the head and foot sections for beds with long siderails.***

Other mattresses may be used, but the manufacturer must always be consulted to make sure that the bed/mattress/siderail combination does not affect the bed's performance, its suitability for use or its safety characteristics.

Users must check the compatibility of the patient's weight and the accessories placed on the bed and the mattress system in view of the specifications of the medical bed and the mattress system.

For beds made after June 1, 2018, it is imperative to use hard surfaces with clamps marked (A) to prevent the hard surface from sliding and the adjustable head section from becoming blocked when lowering.

References of recommended mattresses

Part number	Name
P02062B	ClinActiv® ⊕ Alternating Low Pressure mattress system - AD237A (230V) (203 x 85 x 18 cm)
P02063B	ClinActiv® ⊕ Continuous Low Pressure mattress system - AD238A (230V) (203 x 85 x 18 cm)
P02064B	ClinActiv® ⊕ MCM™ Alternating Low Pressure mattress system - AD234A (230V) (203 x 85 x 18 cm)
P02065B	ClinActiv® ⊕ MCM™ Continuous Low Pressure mattress system - AD235A (230V) (203 x 85 x 18 cm)
ASS027	NP50-SW single-density foam mattress (198 x 85 x 14 cm) - excluding UK and Italy
ASS028	NP50-SW single-density foam mattress (198 x 90 x 14 cm) - excluding UK and Italy
ASS007	NP50-SW single-density foam mattress (198 x 85 x 14 cm) - UK and Italy only
ASS029	NP100-SW dual-density foam mattress (198 x 85 x 14 cm) - excluding UK and Italy, without handles
ASS031	NP100-SW dual-density foam mattress (198 x 90 x 14 cm) - excluding UK and Italy, without handles
ASS030	NP100-WD dual-density foam mattress (198 x 85 x 14 cm) - excluding UK and Italy, with handles
ASS032	NP100-WD dual-density foam mattress (198 x 90 x 14 cm) - excluding UK and Italy, with handles
ASS022XT	NP100-WD dual-density foam mattress (198 x 85 x 14 cm) - UK and Italy only, without handles
ASS033	NP150-WD viscoelastic foam mattress (198 x 85 x 14 cm) - excluding UK and Italy
ASS034	NP150-WD viscoelastic foam mattress (198 x 90 x 14 cm) - excluding UK and Italy
ASS004XT	NP150-WD viscoelastic foam mattress (198 x 90 x 14 cm) - UK and Italy only
ASS099	NP150-XRAY viscoelastic foam mattress (198 x 90 x 14 cm) - excluding UK and Italy
P005856A	P280 overlay mattress (230V) (203 x 90 x 10 cm)
P005858A	P280 overlay mattress (120V) (203 x 90 x 10 cm)
P005987A	P280 MRS mattress base (230V) (198 x 85 x 17 cm)
P006052A	P280 MRS mattress base (120V) (198 x 85x 17 cm)
P006172A	P280 Air Mattress (230V) (198 x 85x 17 cm)
P006173A	P280 Air Mattress (120V) (198 x 85x 17 cm)
PAH005010180-1	AccuMax Quantum™ VPC AD mattress (203 x 89 x 18 cm)
ASS078	Extension mattress
FHS01C0XX[a]	Fusion Hybrid mattress (197 x 88 x 17 cm)
P290A1	P290 Air overlay mattress (200 x 90 x 10 cm)
P290A2	P290 foam base mattress + Air overlay (200 x 90 x 17 cm)
P290A3	P290 Air mattress (200 x 90 x 17 cm)
ASS078	Extension mattress

a. The XX code of the Fusion Hybrid mattress corresponds to the customization of the model. These codes range from 06 to 17. i.e., from FHS01C006 to FHS01C017.

Recommended accessories**

AD810A	Patient helper
AD811A	Adjustable patient helper
AC953A	Chrome-plated IV hook
AC959A	Oxygen cylinder holder model B5 (Ø140)
AD101A	Oxygen cylinder holder model D (Ø100)
AD102A	Oxygen cylinder holder model E (Ø100)
AC962A[a]	Pivoting 3-liter cylinder holder
AC963A	Syringe-driver holder
AD242A	X-ray-transparent adjustable head section
AD244B	Monitor stand
AD271B	Pair of metal siderails without attachments
AD286A	IV line manager & support
AD290B[a]	Foot egress handle
AD296B[a]	Head egress handle
AD294A	FIXED IV pole
AD298A	Telescopic IV pole with four hooks
AD299A	Telescopic IV pole with four hooks
AD312A	Net for siderail AD271
AD288A	Foot gap panels

a. Incompatible with half-siderails.

Recommended additional parts

AC968A	Equipotential connecting cable
AD270B	Removable frame
AD276A[a]	5th wheel
AD277A	Wall stop
AD282A[a]	LI900B2 control pendant
AD283A[a]	LI900B2 Control unit on a flexible arm
AD292A	Cable attachment
AD325A	Label holder
P379XXXXX[b]	Communication cable

a. Remember to specify the model when ordering.
b. The XXXXX in the part number identifies the type of connector corresponding to the communication system installed.

Recommended patient lifts

2020003	Sabina™ II EE sit-to-stand lift
2020004	Sabina™ II EM mobile lift
2040015	Viking™ M mobile lift
2040013	Viking™ XL mobile lift
2000014	Golvo™ 8000 mobile lift
2000015	Golvo™ 8008 mobile lift
2000019	Golvo™ 8008 LowBase™ mobile lift

Recommended bed dining tables

TA270	Bed dining table
TA519	Bed dining table
TA529	Bed dining table

Endboards

Headboard

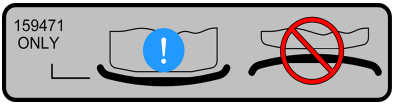
Footboard

Installing the endboards

Headboard

The headboard is fitted with fins that must point towards the sleep surface. If the headboard is installed in the bed frame the wrong way round, the risk of entrapment increases.

If the headboard is removed from the bed frame, the risk of patient entrapment or falling increases. Similarly, the use of the accessories installed at the head of the bed (e.g., IV poles, helpers, etc.) can incur risks for the patient.



The headboard can be removed for easier access to the patient's head.

Bed frame extension*

Do not sit or climb on the extension.

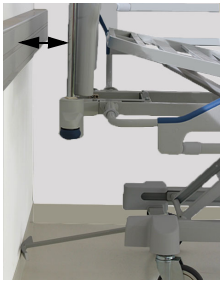
The extension can be pulled out by 20 cm in intermediate steps of 4 cm.

Cushion for extensions is available as an additional mattress..

Part number	Name
ASS078	Extension mattress (85 x 20 x 21 cm)

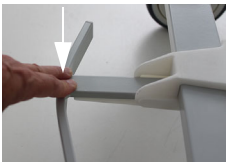
Wall stop AD277A*

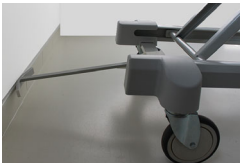
Located at the head of the bed, the extractible wall bumper protects the bed against the risk of impacts with walls or technical ducts.



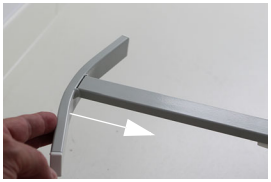
Store the bumper during transfers.

Take out the wall stop





Store the wall stop



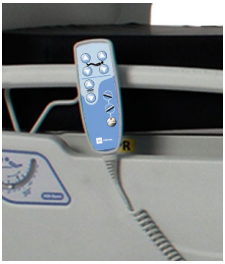
Electrical Functions

The bed's power-driven movements are controlled using the control pendant or controls built into the half-siderails by pressing and holding the button for the corresponding function. The movement stops when the button is released or when the limit of movement is reached.

Caregivers need to assess whether patients can be left unattended with access to the functions on the control pendant.

Control pendant*

The control pendant can be stowed under the siderail.

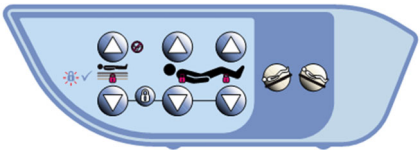


*If the bed was not originally fitted with a control pendant, they can be ordered as an additional part with the P/N AD282A**. It can be placed on the right-hand side of the bed.*

If the patient-pendant is positioned so as to stretch the coil cord and it is released, it retracts and can impact someone.

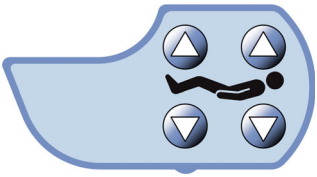
Caregiver half-siderails* controls

They are placed outside the head half-siderails on either side of the bed. They are to be used by caregivers.

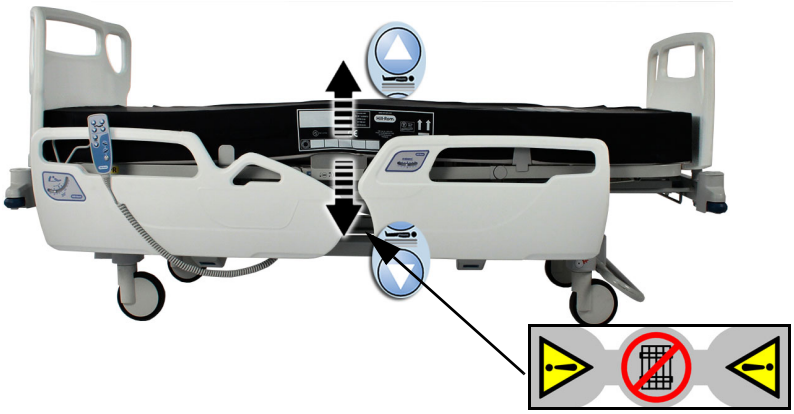


Patient half-siderails* controls

They are placed inside the head half-siderails on either side of the bed. They are to be used by the patient.



Raising/lowering the sleep surface



Before using this function, check that no obstacles (e.g., objects, accessories, power cables) or persons (especially children) are under the sleep surface and that none of the patient's limbs protrude beyond the edges of the sleep surface. An intermittent beep sounds when one of the bed's movements is hindered.

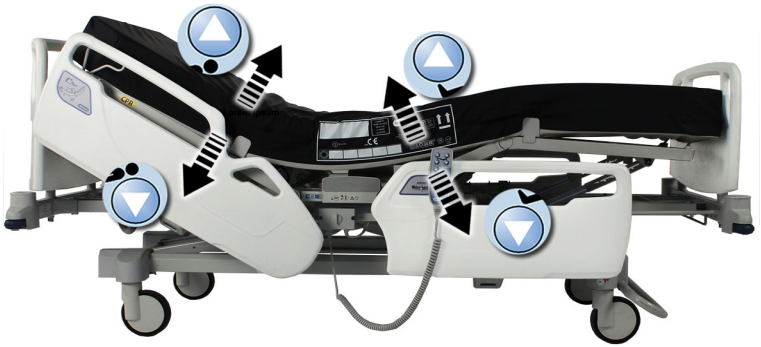
When descending to the low position, make sure that the drainage devices do not come into contact with the floor.

Use the HiLow feature of the sleep surface to adjust the bed to the required height when the patient must be moved.

It is necessary to adjust the sleeping surface height to the patient's morphology.

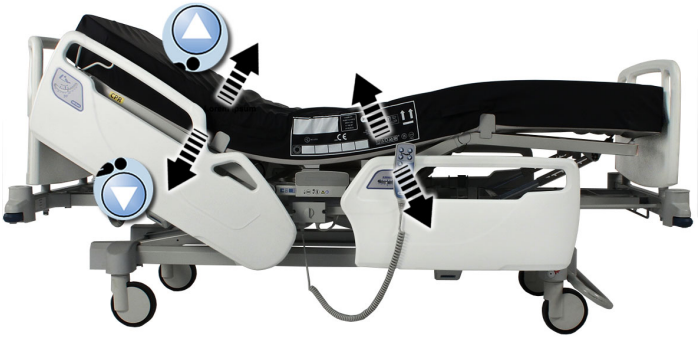
Raising/lowering the head and thigh sections

Before adjusting the head section, check that there are no obstacles preventing the section from being lowered or moving (e.g., limbs, electric cables, foreign bodies or accessories). An intermittent beep sounds when one of the bed's movements is hindered.



When the thigh section is fully raised, the foot section is inclined at an angle of approximately -3° from the sleep surface.

Electric AutoContour™



The AutoContour™ simultaneously raises the head section and the thigh section. This function prevents patients from slipping.

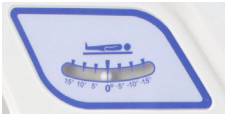
Trendelenburg/Reverse Trendelenburg

The sleep surface can be titled in two ways:

- Trendelenburg (the head end is lowered),
- Reverse Trendelenburg (the foot end in low position).

The complete Trendelenburg function is available at all heights of the sleep surface.

A spirit level* on the foot half-siderail* can be used to adjust the horizontal position of the sleep surface.



Before using this function, check that:

- ***the bed frame extension is securely locked in one of the notches and that nothing (e.g., objects, accessories, power cables, tubes) and no persons (especially children) are under the sleep surface,***
- ***the patient's limbs are within the sleep surface,***
- ***there is enough space between the head of the bed and the partition, especially for Trendelenburg,***
- ***no accessories (IV pole in particular) may come into contact with the fittings,***
- ***check that the drainage devices do not come into contact with the floor.***

Trendelenburg/Reverse Trendelenburg

The electrical Trendelenburg / Reverse Trendelenburg is operated using the control pendant* or the caregiver half-siderail* controls.

Before using this function, check that it is enabled.

To tilt the sleep surface:

- press (A) and the required function (B) or (C) at the same time on the control pendant or press (A) and the required function (B) or (C) at the same time on the caregiver half-siderails controls,
- release the button when the required angle is attained.

This function can be used without a mains power supply thanks to the battery.

Mechanical adjustable foot section

The foot section can be placed in four different positions and is held in place by mechanical notches.

To raise the foot section:

To lower the foot section:

Patient helpers**

This accessory must only be fitted at the head of the bed.

Fixed patient helper - AD810A

Safe working load: 75 kg[1]

Do not position the patient helper at the outside of the bed. See incorrect position shown below.

The patient helper can be fitted into either of the two square sockets at the head of the bed.

Correct position

Incorrect position

Adjustable patient helper- AD811A

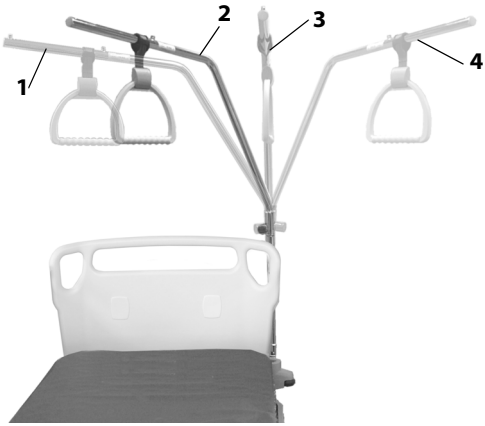
Safe working load: 75 kg[1]

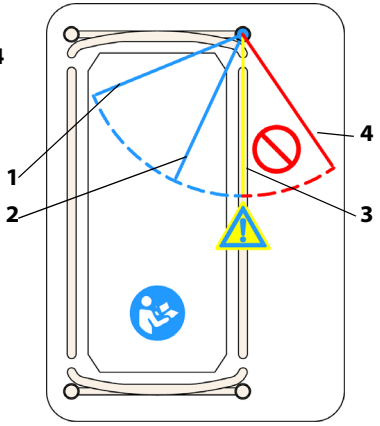
The adjustable patient helper can be placed in three positions.

Patient Helper Positioning

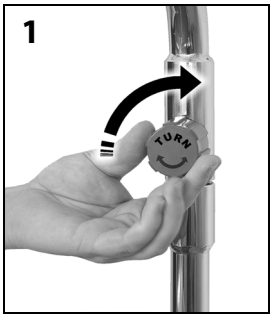
1. *The safe working load specifications allow for a substantial safety margin.*

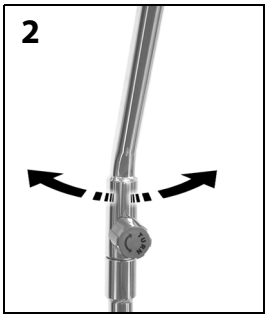
The patient helper in the patient transfer position is designed to help the patient lift some of his/her weight so as to assist the nursing staff with their work. This position is not designed to allow patients to transfer themselves alone. Failure to do so could result in material damage or injury.

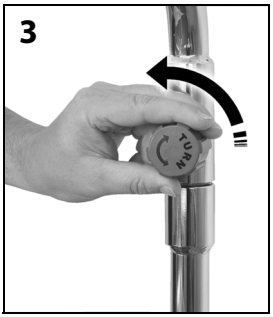




- position 1 (blue): tuck-away position,
- position 2 (blue): normal (egress) position,
- position 3 (yellow): patient transfer aid position,
- position 4 (red): "**incorrect**", risk of bed tipping.



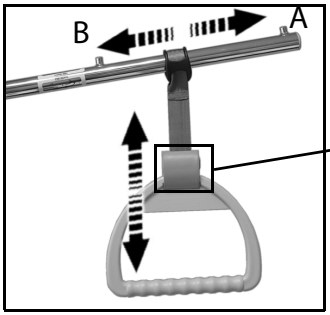


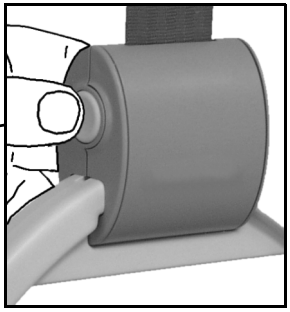


Patient helper handle

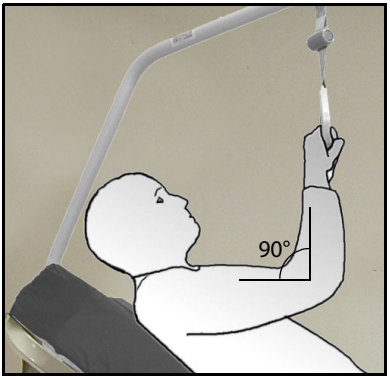
The patient helper handle must be positioned between lugs A and B to avoid any danger of slippage.

The patient handle on the patient helper can be adjusted to the patient.

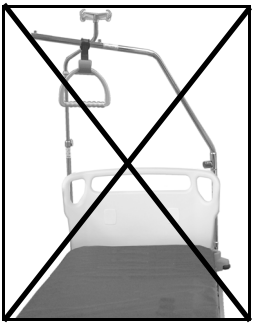




Adjust the height of the handle until there is a right angle at the elbow. It is easier for the patient to change position in the bed, making for greater comfort and independence.



Place the patient handle on the patient helper arm when not in use, in order eliminate any obstruction (see photo below)..



If the bed is equipped with both an adjustable patient helper (AD081D - AD811A) and an IV Pole (AD165A, AD148A, AD298A or AD299A), do not use the patient helper "tuck-away" position as this may interfere with the IV pole

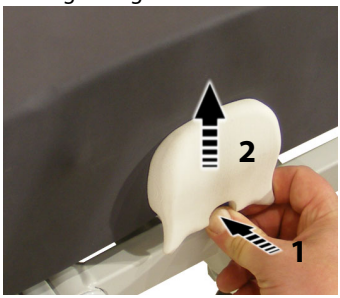
Egress handles*

Four egress handles enable mobile patients to get in and out of the bed with greater ease and in safety.

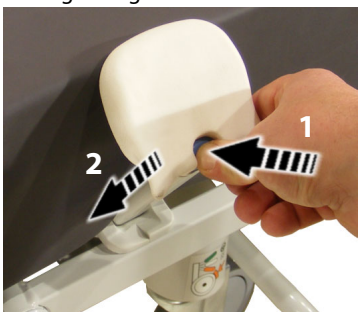
Assistance when moving to a chair.

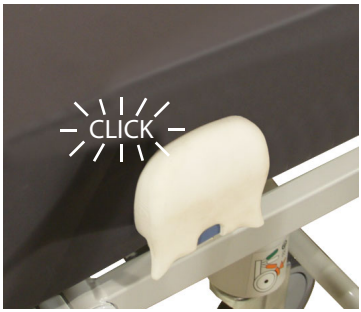
ⓘ *Incompatible with half-siderails.*

Extracting the egress handle:



Lowering the egress handle:





ⓘ *If the bed was not originally fitted with egress handles, they can be ordered as an accessory with the P/N AD290B (foot section) and AD296B (head section). Incompatible with half-siderails.*

Siderails

The Centuris™ Pro Electric Bed is fitted with long detachable metal or integrated half-siderails.

If the bed was not originally fitted with siderails, the long siderails can be ordered as an accessory with the P/N AD271B.

Always ensure that there are no obstacles before raising or lowering a siderail (e.g., person's limb, objects, accessories). They are not designed to restrain or immobilize the patient. No containment devices must be fastened to the siderails (e.g. straps).

Evaluate patients for entrapment risk according to protocol, and monitor patients appropriately. Ensure that all siderails are fully latched when in the raised position.

Siderails are intended to show patients where the edges of the bed are. They are not patient-restraining devices. When appropriate, Hill-Rom recommends that medical personnel determine the proper methods necessary to ensure a patient remains safely in bed without being constantly observed.

Do not place accessories (respiratory or other medical devices) on the siderail in a manner that could prevent the siderail from being lowered when emergency access to the patient is required. The siderails must be handled according to the instructions in the user manual.

The *AD271B* siderails are part of the sleep surface and are detachable. The siderails are unfolded by raising them on the side of the bed.

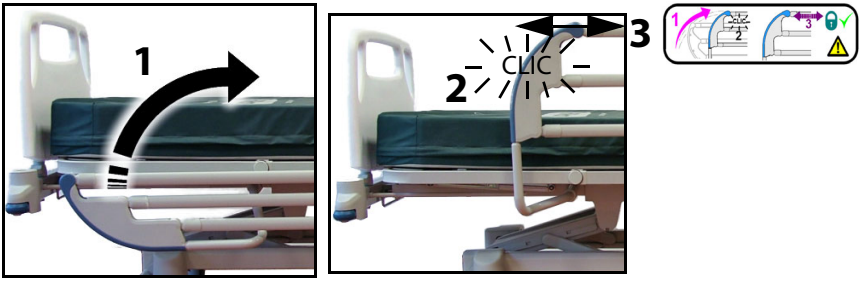
When fully raised and locked, siderails aims to reduce the risk of falls.

AD271B** siderails

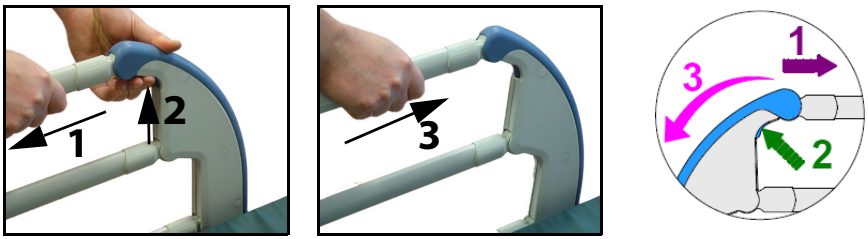
Siderail in low position

Siderail in high position

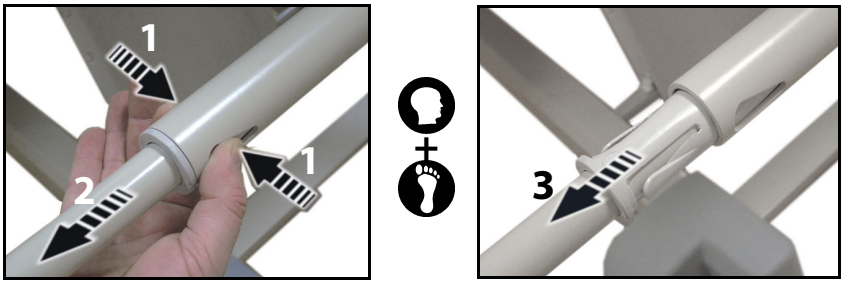
Raising a siderail



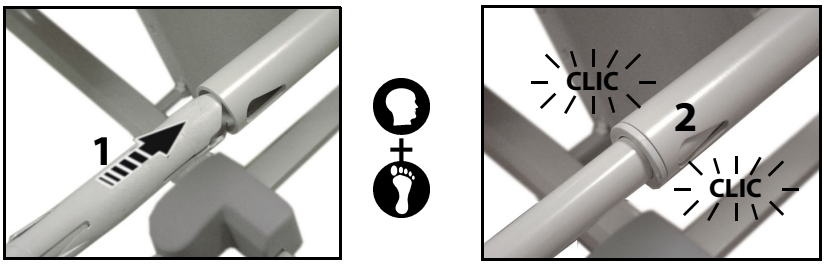
Lowering the siderail



Removing the long siderails



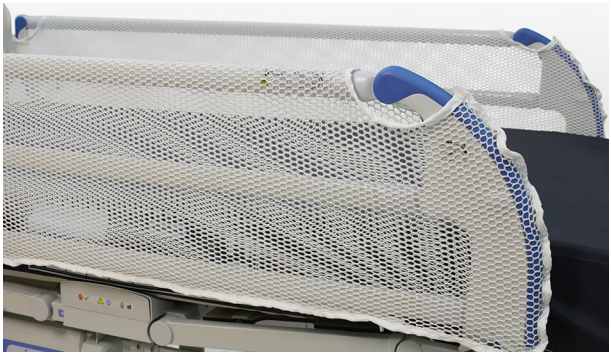
Installing the the long siderails



Siderail safety net (AD312A)**

The AD312A polyester bed net, designed to cover Centuris™ Pro medical beds for adults fitted with AD271B metal siderails, is secured by press studs and zip fasteners.

The tightening effect reduces the risk of the patient's head or limbs passing between the bars of the siderails, while providing a bright environment for the patient



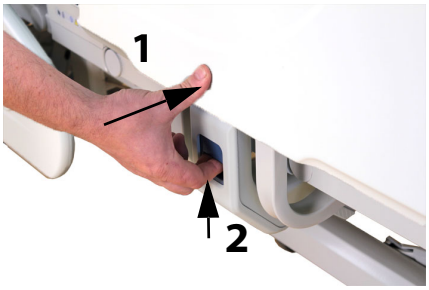
Half-siderails*

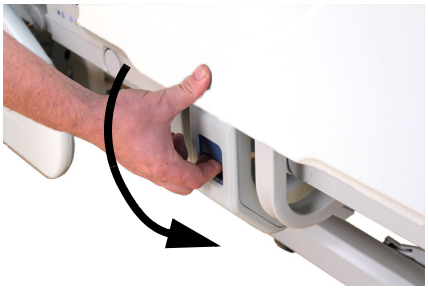
Siderail in low position

Siderail in high position

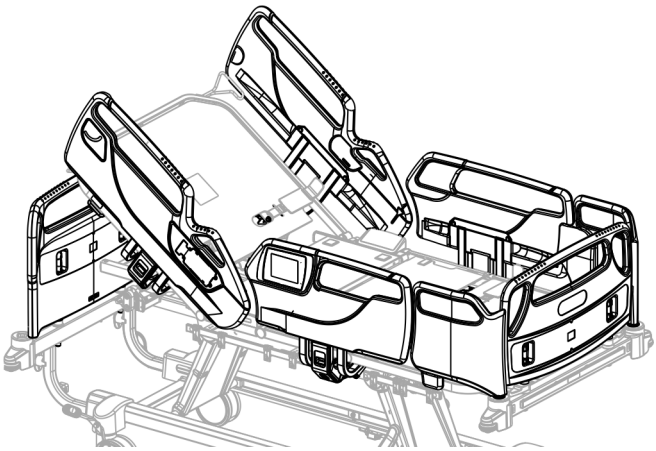
Raising a half siderail

Lowering a half siderail



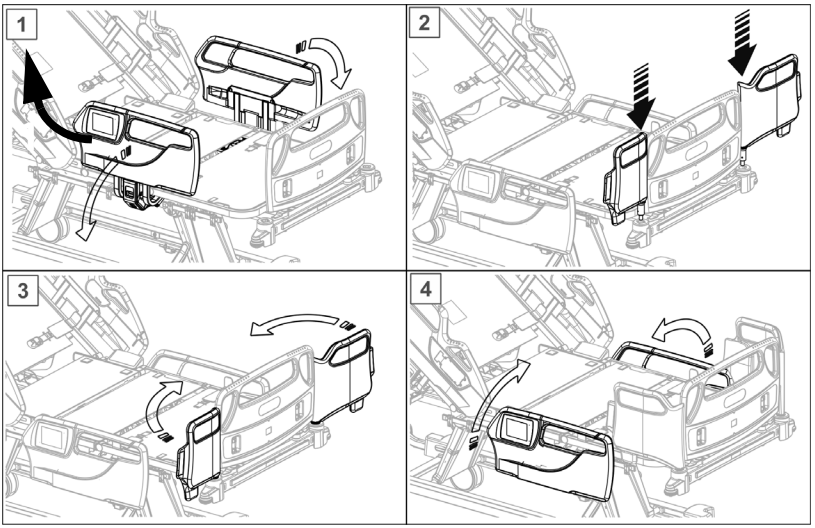


Foot gap panels (AD288A)



In order to mitigate the risks incurred by patient egress through the gaps at the foot of the bed, between the half-siderails and the foot panel, Hill-Rom has developed a kit of two detachable panels, one for each side, designed to block this gap.

Installing the panels

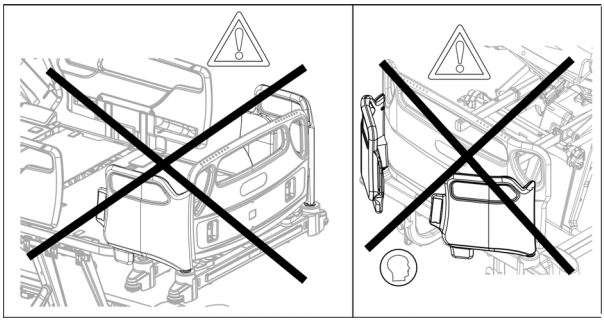


The panels are not designed to restrain or immobilize the patient in the bed.

Check that the panels are correctly installed.

The authorized medical personnel must consider the use of siderails depending on the state of health and behavior of the patient, according to a protocol that indicates in which situations and when the panels can be used.

They are not egress handles. Do not lean on them.
Do not use when the extension is deployed.
Do not use with Afssaps half-siderails.
Do not use with AD271A and AD272A siderails.
Do not store at the head of the bed and remove from the foot of the bed when not in use.



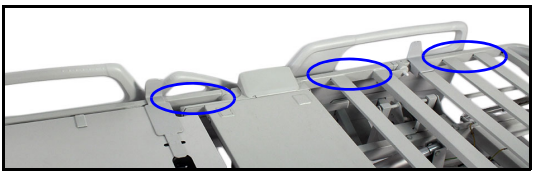
Fittings for the restraining strap handles[1]

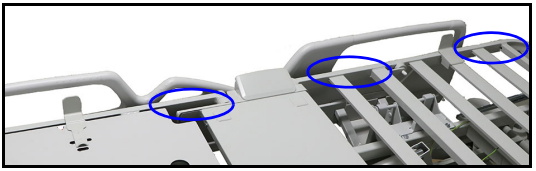
Do not attach the restraining straps to any part of the bed (particularly the siderails) other than those provided for this purpose. When the patient is restrained by the straps, the electric functions must be locked out. When the patient is restrained with an abdominal strap, a system used to restrict the ankles must also be used.

1. Only to be used in compliance with local regulations.

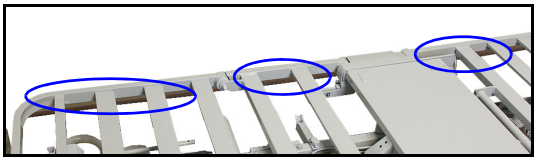
Immobilize patients on the bed using the fittings provided.

Frame with hard surface and battens





Frame with battens



The sleep surface has three fittings on each side of the bed located on the head, thigh and foot sections.

Thread the straps through the bars.

Restraining devices must not be used as a replacement for the nursing care required by the patient. Even when correctly installed, physical restraining devices may become entangled and injure the patient or even cause death, especially if the patient is agitated and confused. Whenever containment devices are used, the patient must be observed in accordance with legal requirements and protocol.

Restraining devices must be secured to the articulated sections of the bed using appropriate attachment points in order to avoid injury to the patient.

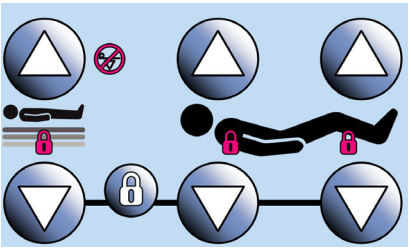
Never use restraining straps for the ankles when the bed is in the seated position or the foot section is lowered.

Adjust the restraining systems and articulations so as to prevent any risk of the patient slipping or moving.

Electrical function management

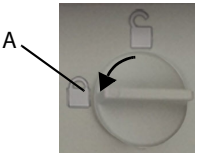
The electrical functions are controlled by the general lock-out unit located on the right of the bed or the half-siderails keyboards.

These lockout controls are used to inhibit or enable all the electrical functions of the bed

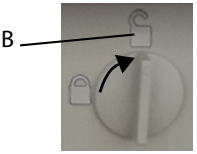


General lock-out*

– To disable the electrical functions from the general lockout unit, set the switch to A.

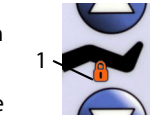


– To enable the electrical functions from the general lockout unit, set the switch to B.



Selective lock-out*

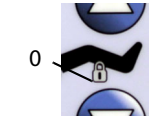
– To inhibit an electrical function from a half-siderail keypad*, press and hold the lock symbol, then press the function to be inhibited.



The indicator light of the corresponding function comes on to indicate that the function is locked out (1).

ⓘ *Locking out the thigh section adjustment control will also lock out the AutoContour™ when the adjustable head section function is activated.*

– To enable an electrical function from a half-siderail keypad*, press and hold the lock symbol, then press the function to be enabled.



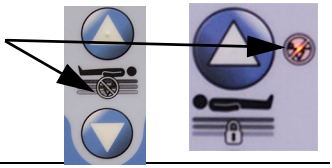
The indicator light of the corresponding function goes off to indicate that the function is enabled (0).

The selective locking out of functions is intended mainly to prevent accidental use that may cause injury of worsen a patient's conditions (e.g., for patients with hip replacements, disable the adjustable thigh section function).

ⓘ *Locking out a function does not affect the CPR.*

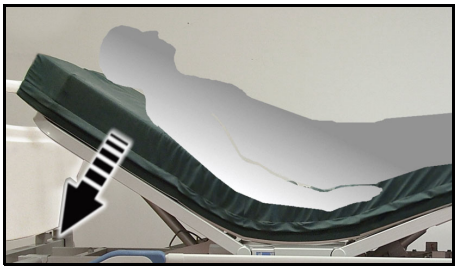
Bed not in lowered position indicator*

An indicator light on the control pendants* or on the half-siderail keypads* goes off when the bed is in the lowered position. This position is recommended when patients are left unattended.



CPR

Never allow a non-qualified person to operate this function and check that no obstacles (e.g., limbs, accessories, objects, power cables) or persons are under the head section.



This function is used in emergencies (e.g.: reanimation, cardiac massage) or in the event of a power cut.

It is operated by a handle located centrally and bilaterally under the sleep surface or under the head section, if the bed is fitted with half-siderails.

The head section actuator is automatically re-enabled after the yellow CPR handle is released. Never use CPR to raise the head section.

Equipotential terminal

Failure to connect the equipotential cable may result in corporal injury.

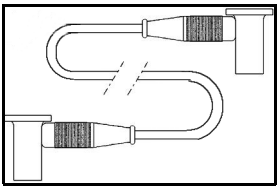
When direct intravascular or intracardiac connections are in use, the electric potentials of all the unprotected metal parts need to be equalized.

The bed must be connected to the electrical installation.
To equalize potentials if a grounded power connection is unavailable, connect the equipotential cable (AC968A) to the connection terminal on the bed and the device.

Equipotential cable (AC968A)

It is fitted with two POAG-WB 6 DIN type connectors and a 2 m long yellow and green cable.

This cable permit to equalize the electric potentials of all the unprotected metal parts of a device and the bed.



Fixed IV pole (AD294A)

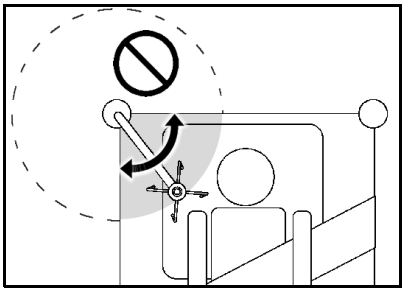
The IV pole is mounted in the angle supports and is used to hold IV bags.

Safe working load:
Refer to the value indicated on the IV pole

Telescopic IV pole (AD298A-AD299A)

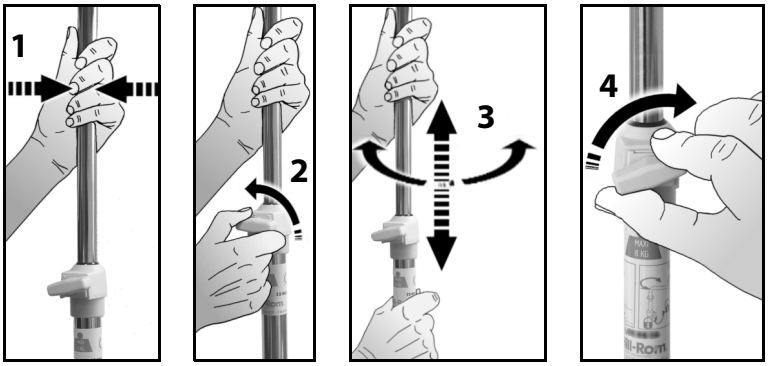
The IV pole is mounted in the angle supports and is used to hold IV bags

Ensure that the IV pole is positioned facing towards the bed and not outwards as shown in the following illustrations.



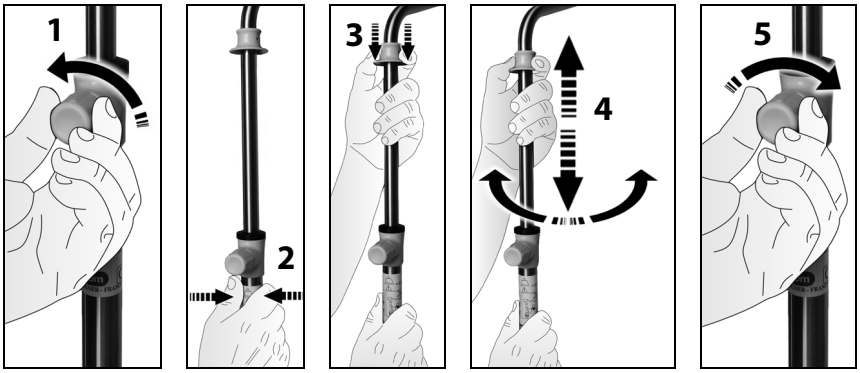
Using the IV pole (AD298A)**

To adjust the height or angle of the IV pole:



Using the IV pole (AD299A)**

To adjust the height or angle of the IV pole:

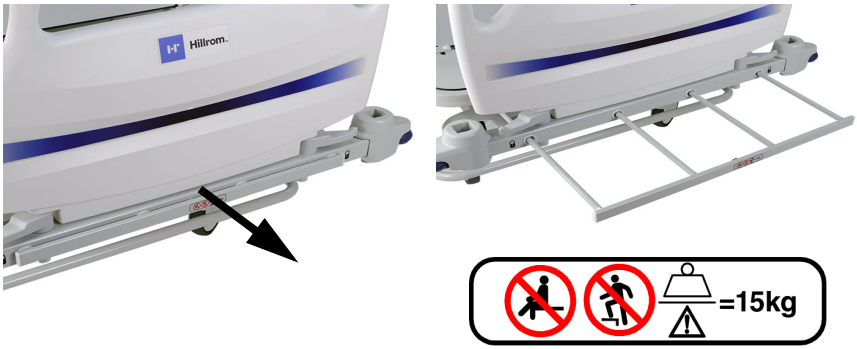


Linen holder*

The linen holder must not be used to support luggage or as a seat, even for young children.

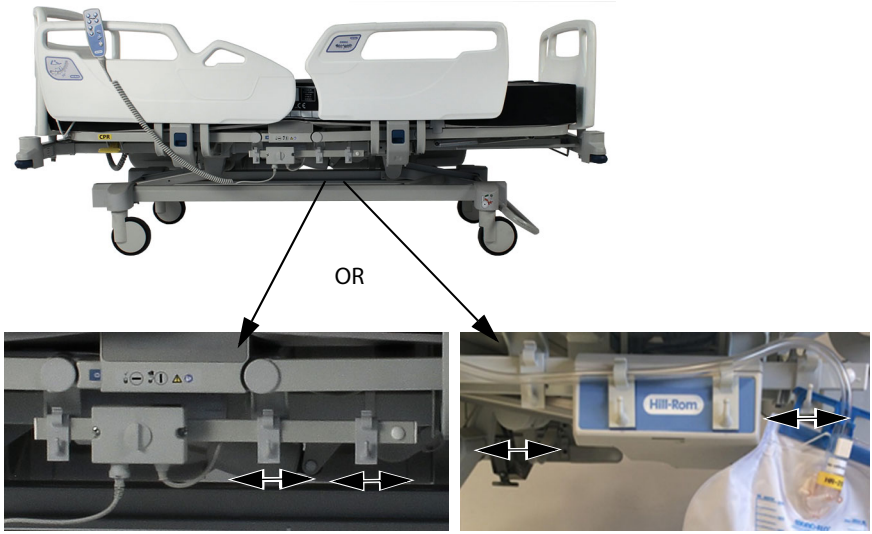
Do not sit or climb on the linen holder.

Safe working load: 15 kg[1].



1. The safe working load specifications allow for a substantial safety margin.

Drainage bag holder pins

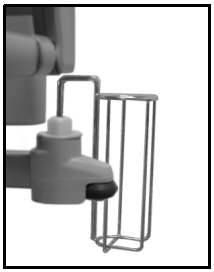


Oxygen Cylinder Holder (AC959A-AD101A-AD102A)

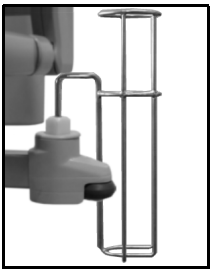
Safe working load: 15 kg[1]

The oxygen cylinder holder is designed to accept an oxygen cylinder and must only be fitted on the patient helper supports at the head end of the bed outside the sleep surface. It can be rotated through 80°. Each type of holder corresponds to a cylinder model and must never be used with a different cylinder. See below.

AC959A for cylinder model B5 (Ø140)



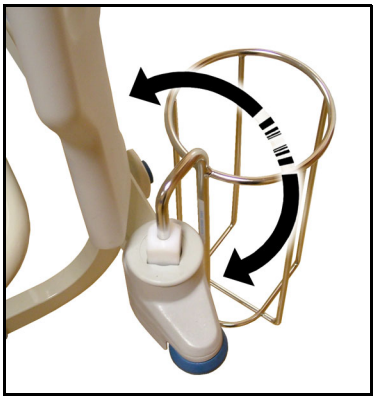
AD101A for cylinder model D (Ø100)



AD102A for cylinder model E (Ø100)

1. The safe working load specifications allow for a substantial safety margin.

The following recommendations are designed to prevent any possible incidents so that this accessory can be used in optimum safety conditions for both the patient and nursing staff.

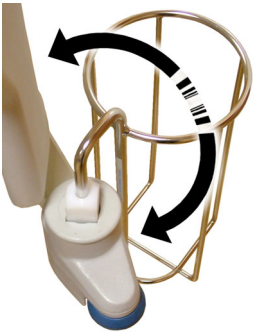


- Check that the cylinder is correctly positioned at the base of the cylinder holder.
- Never use a different oxygen cylinder model from the model that is specified above (danger of dropping the cylinder or interfering with various operations could occur).
- Prevent any impact when moving a bed equipped with a cylinder holder (especially doorways).
- If the cylinder holder does not allow the bed to go through a doorway, position the holder in front of the bed, otherwise place it and the cylinder on the mattress (remember to put the holder in its normal position after moving the bed).

Pivoting 3L Bottle Holder (AC962A)**

The bottle holder is designed to accept a 3 litter bottle and can be fitted on the supports at the foot end of the bed outside the sleep surface. It can be rotated through 80°.

The following recommendations are designed to prevent any possible incidents so that this accessory can be used in optimum safety conditions for both the patient and nursing staff.



- oPrevent any impact when moving a bed equipped with a bottle holder (especially doorway or reverse Trendelenburg).
- olf the bottle holder does not allow the bed to go through a doorway, position the holder in front of the bed, (remember to put the holder in its normal position after moving the bed).

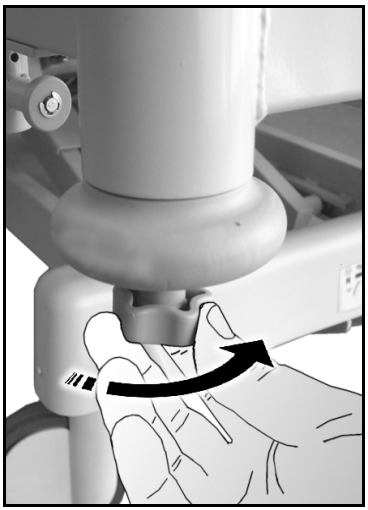
Monitor stand (AD244B)

Safe working load: 15 kg[1]

The monitor stand fits into the sockets at the foot of the bed.

When fitting the monitor, ensure that the folded table is located on the outer edge of the bed.
The table must be folded away when moving the bed.
If the bed is in Trendelenburg or Reverse Trendelenburg, any devices must be placed on the monitor stand.

To fit a monitor stand:



Syringe-driver holder (AC963A)

Safe working load: 15 kg[2]

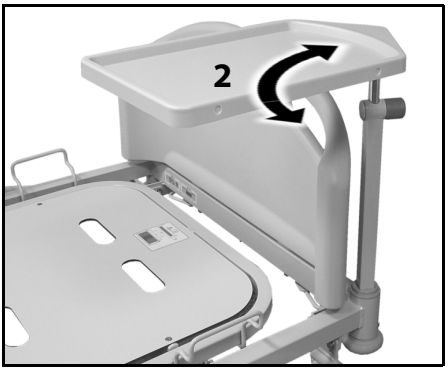
1. The safe working load specifications allow for a substantial safety margin.
2. The safe working load specifications allow for a substantial safety margin.

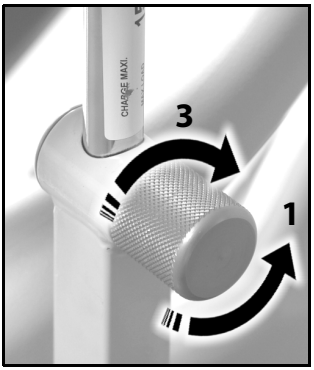
Do not position the accessory facing inwards, particularly under the head section when it is raised, so as to prevent any risk of the accessory obstructing the head section or siderail when being handled.

This accessory is designed to accept a syringe-driver and is fitted at the head end of the bed in the sockets provided.

To adjust position of the syringe driver holder:

- hold the tablet and loosen the knob,
- position the tablet as required and then tighten the knob.





IV line manager & support (AD286A)**

This accessory must be fitted by an authorized technician.

Please refer to the fitting instructions provided with the accessory when fitting the accessory.

A Line Manager is on each side of the head end of the bed. The Line Manager helps to keep lines (such as IV lines, suction lines, etc.) together and away from the articulating frame. The flexibility of the Line Manager lets you bend it in any direction.

Make sure the lines are not pinched or kinked and there is sufficient slack in the lines for bed articulations and patient movement.

Do not wrap the power cord or communication cable around the line manager.

X-ray-transparent adjustable head section (AD242A)**

The X-ray-transparent adjustable head section accessory allows a cassette for 35 x 43 cm X-ray films (as per the standard EN ISO 4090) to be installed in order to take chest X-rays. It is installed in place of the hard surface of the head section.

The type (foam or air), the materials, the density and the thickness of the mattress, and the weight and morphology of the patient can affect the quality of the X-ray images. The best way to produce X-rays of an optimal quality is to get as close to the patient as possible. The radiologist is responsible for deciding on the best solution to take the X-ray according to the medical target and the hospital's protocol adapted to the patient's illness.

NOTE :

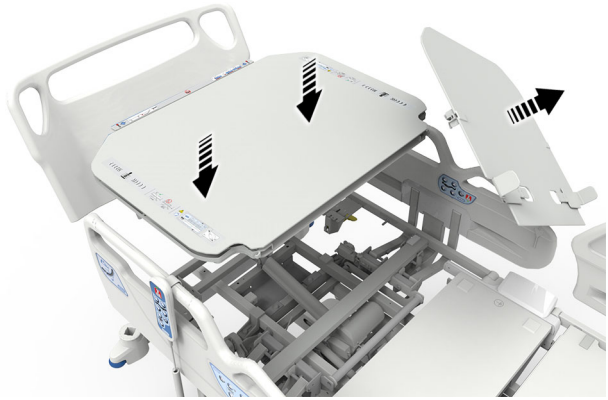
For patients weighing more than 100kg, the user must adjust the angle of the head section and the position of the patient to produce quality images.

NOTE :

Incompatible with side-rails and AD271B.

Installing the accessory

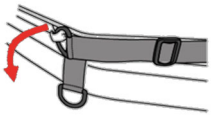
1. Remove the mattress to gain access to the hard surface of the head section.



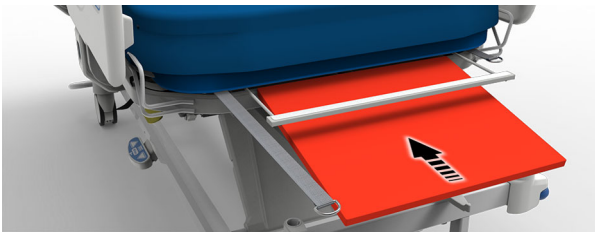
2. Unclip and remove the hard surface of the head section.
3. Install and clip the accessory in its place.

Installing an X-ray cassette

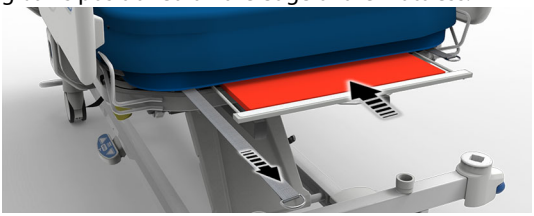
1. Remove the headboard to install the X-ray cassette in the top of the head section.
2. Raise the sleep surface or raise the head section in order to insert the cassette.
3. Unhook the buckle of the right strap from its storage hook.



4. Pull on the left strap to extract the cassette support.
5. Lift the cassette retaining bar and insert the cassette in the landscape or portrait direction, as required.

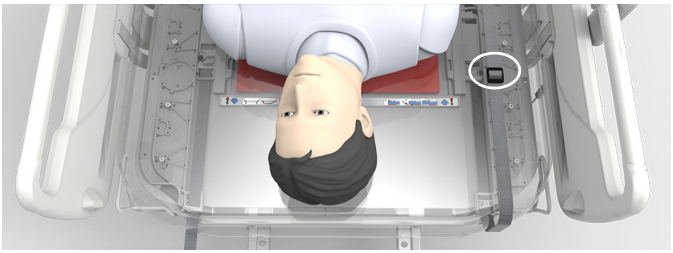


6. Check that the retaining bar locks the cassette in position.
7. For portrait images, pull the retaining bar upwards to lock the cassette.
8. If necessary, adjust the cassette in the sideways direction.
9. Adjust the position of the cassette using the right and left straps so that the retaining bar is positioned on the edge of the mattress.



10. Adjust the cassette positioning buckle. Wind the right strap around the mattress and put the buckle on the upper edge of the mattress. Once it has been adjusted using the right and left straps, this buckle is used to position the top of the cassette as required.

11. Position the patient on the bed with their hips by the marker on the siderail.
12. Adjust the height of the sleep surface and incline the head section as required.
13. Adjust the position of the cassette as required.



Removing the X-ray cassette

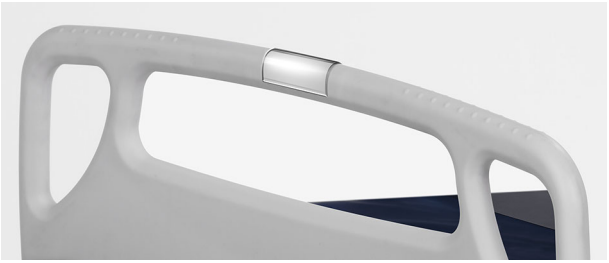
1. Pull on the left strap to extract the cassette support.
2. Raise the retaining bar and take out the cassette.
3. Pull on the right strap to insert the cassette support.
4. Hook the buckle of the right strap on its storage hook.

Chrome-plated IV hook (AC953A)**

This accessory is used to hold the IV bag to the patient helper AD810A** or AD811A**.

Label holder (AC325A)**

This additional part is used as a place to holder to insert patient name label.



Braking/steering

Brake and steer system

Always put the brake in the "STOP" position, except during transport. Once the brakes have been applied, push and pull the bed to make sure that it does not move.

The brake bar, located at the foot of the bed, or the bilateral pedals at the head end, simultaneously control all four casters, including one steering caster.

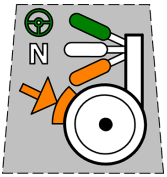
It has three positions:

- "STOP" to prevent the bed from moving,
- "NEUTRAL" to move the bed in all directions,
- "STEERING" for easier movement in a straight line.

STOP

NEUTRAL

STEERING

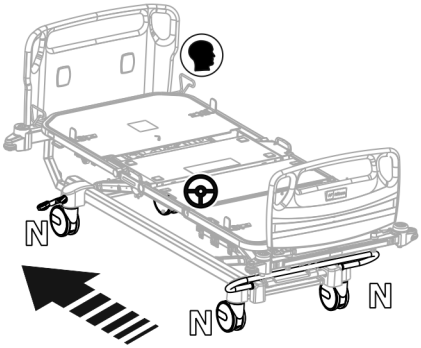


Label

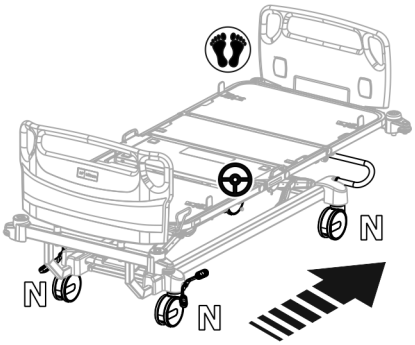
<u>Using the bar in the steering position</u>

- Three wheels turn freely (NEUTRAL) and one wheel steers (it no longer swivels).

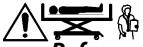
Steering wheel at head end



Steering wheel at foot end*



Moving the bed



Before moving the bed, perform the following checks:

- *If there is a patient in the bed, ensure that the siderails are raised and locked to help prevent the patient from falling.*
- *Position the sleep surface so the top of the footboard is at the most suitable height for transporting the bed (approximately ½ Hi-Low) and with the foot section horizontal.*
- *Disconnect the general power cable and the power cable of the electric accessories (e.g., air mattress, etc.) and hook them to the bed as described in paragraph "Securing the power cable" on page 59.*
- *Check that the bed or accessories (e.g., patient helper, wall stop) cannot hit door frames or other obstacles (e.g., lights).*
- *Place the control pendant in its holder near the CPR handle to prevent any damage to the control pendant or cable (e.g., catching on doorways, etc.).*
- *Place the patient in a stable and comfortable position (do not fully raise the head section).*

Never try to move the bed by pulling on the power cable or you may damage it. A damaged power cable is an electric shock hazard.

Never use the patient helper or the IV stand to move the bed.

The bed should only be moved while in the transport position by two people (one at each end so as to ensure that there is always one person to operate the brake bar) when moving the bed on a slope, with a foot end directional caster or when moving the bed with a heavy load (heavy patient, accessories fitted, etc.).

Moving the bed:

- hold the endboard with both hands,
- raise the brake and steer bar to the "NEUTRAL" position to release the brakes,
- push the bed, steering with the headboard.

If the endboard is not lockable, be careful that it does not fall on the patient or injury someone in case of a fall.

For easy transportation in a straight line:

- push the bed using the end board opposite the steering wheel (See "Brake and steer system" page 57),
- after having moved the bed for a short distance to align the casters, raise the brake and steer bar to the "STEER" position.

Securing the power cable

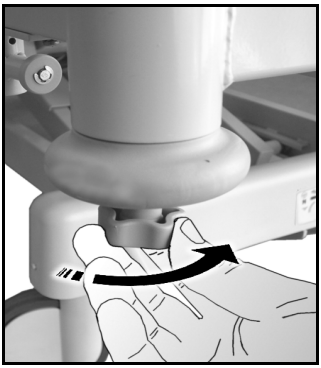
Always correctly store the power cable. Failure to follow this recommendation may result in damage to the cable by crushing and create the risk of electric shock.

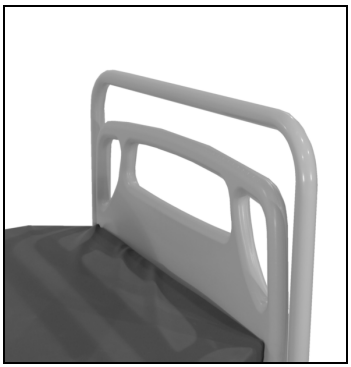
The power cable must be hooked in place before moving the bed.

Attachment with cable tie AD292A

Removable frame (AD270B)

The detachable tube helps to guide the bed when transferring.





Decontamination

Safety recommendations

- Ensure that the bed cannot move.
- Lock out all electrical functions.
- Disconnect the bed and stow the power cable (see “Securing the power cable” page 59).
- Check that all plugs are well connected (control and lockout units, electric motors on the power supply unit).
- Never clean the bed by pouring water on it, nor with high-pressure hoses nor in tunnel washes.
- Never use water at a temperature of more than 60°C.
- Avoid excess water on the connectors.
- Refer to the recommendations of the cleaning product manufacturer.
- Thoroughly dry before reusing.

Failure to implement one or more of these recommendations may lead to damage or deterioration, preventing use of the bed and rendering the warranty void.

Recommendations

Personnel must be trained to perform appropriate cleaning and disinfection.

The instructor must carefully read the instructions and follow them while the trainee is attending the course. The trainee must:

- Take all the time needed to read the instructions and ask questions.
- Clean and disinfect the product under the instructor's supervision.
- During and / or after this process, the instructor must correct the trainee regarding any deviation from the instructions for use.

The instructor must supervise the trainee until the trainee is able to clean and disinfect the bed as per the instructions.

Recommendations for cleaning and disinfection

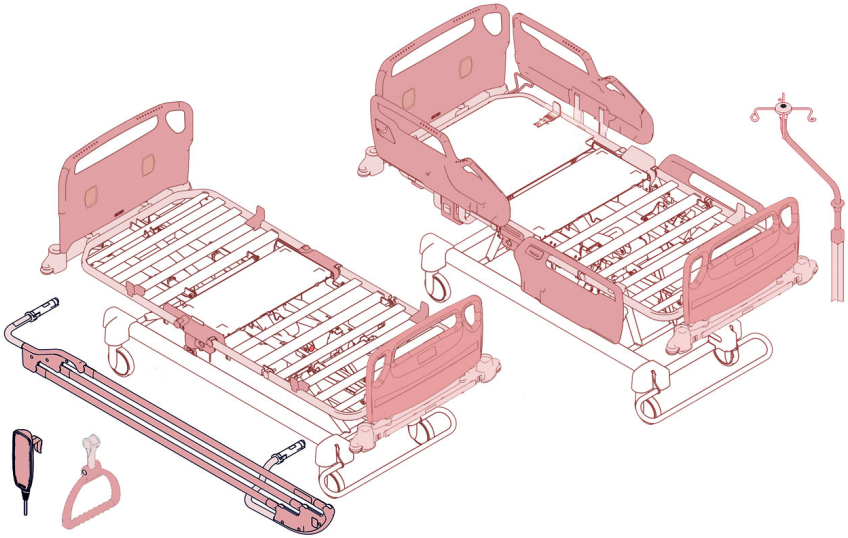
The following recommendations are not designed to replace existing cleaning protocols drawn up by the hygiene officer or by other bodies for your hospital.

The disinfecting method described below applies specifically to the bed and its accessories and is designed to save time and to help combat nosocomial infection more effectively.

Clean the bed with a lightly dampened cloth and ordinary disinfectant. Do not use excessive liquid.

This bed is designed for easy cleaning and optimal hygiene.

Recommended Cleaning and Disinfection



Clean and disinfect every day.

Clean and disinfect after patient departure or before patient transfer.

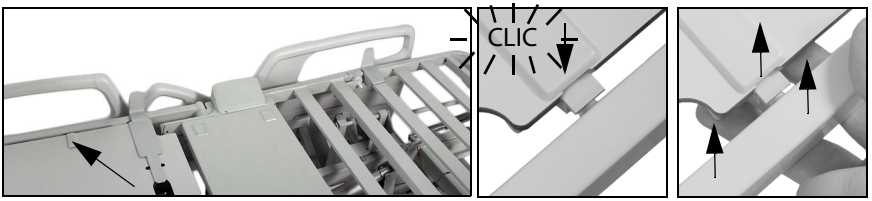
Clean and disinfect thoroughly (after the departure of an infected patient or recommended every two months).

Decontamination Record

A decontamination record should be kept for each bed, mentioning:

- month, ward and room number, bed reference number.
- cleaning frequency, materials and products used.

Sleep surface.



Recommended Materials and Products

NOTE:
A list of recommended cleaning products for all types of cleaning requirements is available on your request along with a special maintenance advice leaflet.

- Single-use tissues or recyclable textile wipers.
- One pair of household gloves.
- Detergent-disinfectant solution diluted according to hospital guidelines (and taking into account the recommendations given below) or a disinfecting spray.
- Use a product that complies with standard EN 14885 (bactericide including TB, fungi and viruses, including HIV-1 and HBV).
- Chlorine (26,000ppm) solution that complies to EN 13727 and EN 13624 can be used, but has the risk of discoloration. Non coated metal parts should be rinsed to prevent pitting corrosion.

The following products should not be used

Formaldehyde, or phenol-based products and solvents of any kind (toluene, xylene or acetone).

Never use abrasives, cleaning powder or cleaning pads that may damage components.

Recommended Cleaning and Disinfection Method

- Always wipe downward, working from the cleanest to the dirtiest areas.
- Do not scrape surfaces.
- Keep wipes damp (wet as many times as needed and do not wring out too much water).
- Let product dry according to disinfectant manufacturer's recommendations to ensure maximum efficiency.
- Rinse if necessary: follow the recommendations of the disinfectant supplier.
- Change wipes when cleaning the least contaminated areas to areas of medium or to highly contaminated areas.
- Change wipes when cleaning another bed.
- Always dry the bed thoroughly after it has been cleaned.

Cleaning tough stains

ⓘ *Quickly wipe away any traces of pharmaceutical solutions or other staining products, in order to avoid permanent damage to the surface.*

To remove tough stains, use standard household cleaners and a soft bristle brush. To loosen heavy, dried-on soil or excreta, you may first need to saturate the spot.

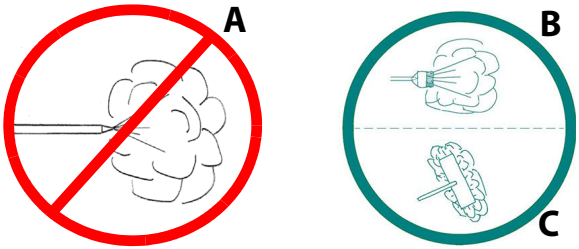
Some zones (interstices between the parts, "textured" parts and plastic parts with a complex shape, textile straps) can be more difficult to clean. You are advised to spend more time on these zones, for instance by double-cleaning.

Use as many wiping cloths as necessary to remove dirt.

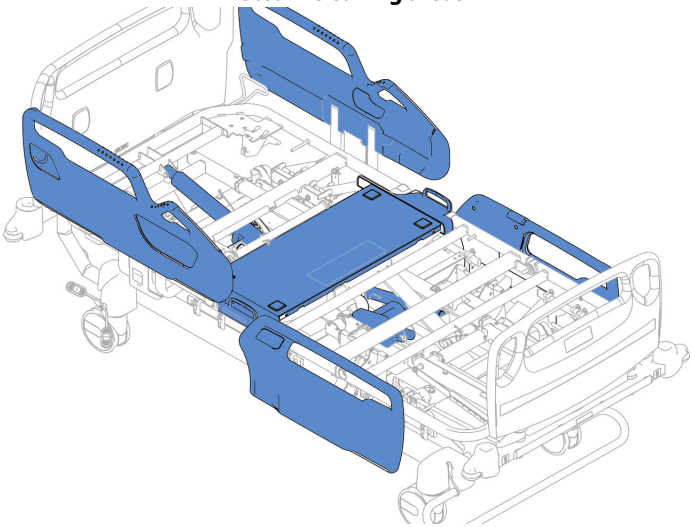
Steam Cleaning

These beds can be steam cleaned. However, in order to avoid any damage or deterioration caused by high pressure or abnormal surface temperature, the following precautions should be taken:

- avoid any excess water and use reduced steam pressure with microfiber support when cleaning electrical components (control unit, actuators, lateral caregiver units, half-siderails with keypads, remote controls and control cluster arms),
- do not use accessories such as high pressure hoses (A). It is preferable to use soft non-metallic brushes (B) and microfiber support (C) in such a way as to reduce the pressure to an acceptable level.



Steam cleaning areas



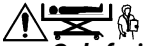
Clean with a microfiber support only.

Clean with a soft non-metallic brush or a microfiber support.

- prevent water and steam from getting into connectors that are not in use,
- do not brush and use reduced pressure on labels and markings,
- carefully dry and test the bed before reuse.

Maintenance

Safety recommendations



Only facility-authorized personnel should perform maintenance of the Centuris™ Pro bed.

Before maintenance or servicing works:

- ensure that the bed has been immobilized (if no movements are required),
- lock out all electrical functions,
- disconnect the bed from the mains if no electrical operations are planned,
- secure the sleep surface and take whatever steps are necessary to prevent any movement.
- Do not work on the devisewhen it is occupied.

Never open or pierce an electric actuator.

For all problems with actuators (e.g., blockage), contact our after-sales service.

Preventive maintenance

ⓘ *A service manual and a catalog of spare parts are supplied on delivery, but can also be obtained on demand from Hill-Rom After-Sales. Hill-Rom guarantees that the original functional parts or parts performing equivalent functions will remain available for 7 years after the corresponding range goes out of production.*

ⓘ *The product design life is validated on 10 years of normal use.*

ⓘ *The frequency of inspections must be adapted to the general condition of the product and it use, for example, if the bed is used by heavy patients. It is the responsibility of the facility to implement a preventive maintenance program for the bed's functions under its conditions of use.*

The bed and accessories should be inspected at least once a year to keep it in good condition and working properly.

The following points should be given particular attention:

- movement mechanisms and cables (actuators in particular),
- locking mechanisms (head section, foot section, thigh section and AutoContour™),
- the accessory mechanisms,
- bed movement and ancillary part bearings,
- The condition of the electric cables (e.g., control unit, power supply unit) in particular that they are not crushed or cut and thus could make contact with a metal part,
- earthing of the metal parts of the bed,
- waterproofing of electrical parts,
- siderails: check the play and the lock mechanisms (condition and working order).

Every year, it is preferable to ask Hill-Rom After-Sales Service or a Hill-Rom approved supplier to inspect the actuators and the electrical systems in order to keep them in safe and good working order over time. Depending on the maintenance operations and observations, the date of the next inspection must be recommended every time the bed is serviced.

De-commissioning

The device and its accessories should be cleaned and disinfected before de-commissioning.

Customers should adhere to all federal, state, regional, and/or local laws and regulations as it pertains to the safe disposal of medical devices and accessories. If in doubt, the user of the device shall first contact Hill-Rom Technical Support for guidance on safe disposal protocols (Directive 2012/19/EU).

As regards the battery:

•Never dispose of the batteries which contains substances and dangerous metals for the environment and the health (Directive 2006/66/EEC).

The bed is designed for easy dismantling so that it can be destroyed or reused in accordance with the applicable recycling regulations (e.g., electric parts, plastics, metal).

At the end of the bed's life, Hill-Rom recommends that you contact a specialist in the dismantling of beds or, if the bed can still be used, to donate the bed to a charitable organization so that it can be used again.

Always clean and disinfect the bed before shipment for dismantling or donation.

Warranty and after sales service conditions

The warranty for our beds will be rendered null and void, in part or in total, in the event of:

- Unauthorized interference with or incorrect maintenance of:
    - actuators,
    - electrical drives and components,
    - mechanical systems,
    - any abnormal use.

Contact your country Hill-Rom representative or go to hillrom.com to find the After-Sales Service contact details.

Compliance

- The CE mark was applied for the first time in 2010
- CE mark applying to class I medical devices in accordance with (see Declaration of Conformity):
    - the Essential Requirements of the directive 93/42/EEC,
    - the General Safety and Performance Requirements of the Regulation (EU) 2017/745 regulation.
- Complies with standards:
    - NF S 90-312 (1984),
    - EN 60601-1 (2006) & A1 (2013) / IEC 60601-1 (2005) & A1 (2012),
    - EN 60601-1-2 (2015) / IEC 60601-1-2 (2014),
    - EN 60601-2-52 (2010) / IEC 60601-2-52 (2009), application environments 2, 3 and 5.
- The LI900B1 bed meets the NF MEDICAL -LITS.
  Authorization N°: NF178-01/01
    - Certified characteristics:
        - electrical safety precautions,
        - electromagnetic compatibility,
        - mechanical safety precautions
        - aptitude for use.
- The LI900B1 bed meets the "NF Environnement - Ameublement"
    - Institut Technologique FCBA
      10, rue Galilée
      77420 Champs-sur-Marne
      FRANCE
      www.fcba.fr

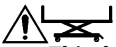
- The NF ENVIRONNEMENT marking guarantees performance and ecology:
  - •Quality / Durability
  - •Health / Safety
  - •Environment

  Visit the website for more information
  www.nf-environnement-ameublement.com

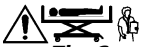
- The NF Environnement certified Centuris™ Pro bed is designed, manufactured and checked to reduce environmental impact up to end of life (limitation of transformation energy of the materials, heavy metal-free finishing products, possibility to recycle, etc.).
- INMETRO rule N°. 54, February 1st, 2016 and mandatory certification of electrical equipment under requirements of National Health Surveillance Agency - ANVISA - RDC N° 27, 2011-06-21 and IN 03, 2011-06-21.

Electromagnetic conformance

Complies with electromagnetic emission standards



This device meets all the requirements related to electromagnetic compatibility, in accordance with the standard IEC 60601-1-2 and the directives applicable to medical devices, and has passed all the tests to demonstrate that it meets these requirements. It is most improbable that users experience problems due to deficient electromagnetic immunity. However, electromagnetic immunity is always relative, and standards are based on anticipated environments of usage. If the user notices that the device behaves unusually, and especially if this behavior is intermittent and occurs when in the vicinity of radio or TV transmitters, cell phones or electrosurgical equipment, this may be a sign of electromagnetic interference. If such behavior occurs, users must try to move the equipment well clear of the origin of the interference with the device.



The Centuris™ Pro bed must not be used close to or on top of other items of equipment. If this is necessary, the Centuris™ Pro bed must be tested to confirm that it functions properly in the required configuration. Make sure that the Hill-Rom® 900 bed functions correctly when used in the vicinity of other electric appliances. Mobile and portable radio frequency (RF) communication equipment may damage the electric medical equipment.
Electric medical equipment demands special precautions regarding electromagnetic compatibility (EMC) and must be installed and used in accordance with the EMC-related information contained in this manual.
The use of accessories, transducers and cables other than those specified, apart from the transducers and cables sold by the manufacturer of these devices, such as replacements of internal components, may result in an increase and/or reduction of the immunity of the Centuris™ Pro bed.

Electromagnetic conformance

Complies with electromagnetic emission standards

Manufacturer's guide and declaration – electromagnetic emissions		
The Centuris™ Pro is designed for use in the electromagnetic environment specified below. Users must ensure that the bed is used in this environment.		
Emission test	Compliance	Electromagnetic environment - Guide
RF emissions CISPR 11	Group 1	The Centuris™ Pro only uses radio electric power for its internal functions. Consequently, it only produces very weak RF emissions that are unlikely to cause interference with nearby electronic equipment.
CISPR 11 RF emissions	Class A	The Centuris™ Pro can be used in all places other than domestic premises and premises that are directly connected to the low voltage public mains power network used to supply domestic buildings.
Harmonic emissions IEC 61000-3-2	Class A	
Flicker IEC 61000-3-3	Applicable	
CISPR 14-1 RF emissions	Compliant	The Centuris™ Pro is not designed to be connected to other equipment.

Compliance with electromagnetic immunity

Manufacturer's guide and declaration – electromagnetic immunity			
The Centuris™ Pro is designed for use in the electromagnetic environment specified below. Users must ensure that the bed is used in this environment.			
Immunity test	IEC 60601 Severity	Compliance	Electromagnetic environment - Guide
Electrostatic discharges IEC 61000-4-2	± 8 kV on contact ± 2 kV, ± 4 kV, ± 8 kV and ± 15 kV in the air	± 8 kV on contact ± 2 kV, ± 4 kV, ± 8 kV and ± 15 kV in the air	The relative humidity must be at least 5%.
Fast transients in bursts IEC 61000-4-4	± 2 kV for the power supply lines ±1kV for the input/output lines (100 kHz Repetition Frequency)	± 2 kV for the power supply lines ± 1 kV for the input/output lines (100 kHz Repetition Frequency)	The quality of the main power supply must be that of a typical commercial or hospital environment.
Voltage surges IEC 61000-4-5	1 kV differential mode 2 kV common mode	1 kV differential mode 2 kV common mode	The quality of the main power supply must be that of a typical commercial or hospital environment.
Magnetic field at the frequency of the mains power supply (50/60 Hz) IEC 61000-4-8	30 A/m 60 Hz	30 A/m 60 Hz	The magnetic field at the frequency of the mains supply must be characteristic of a typical commercial or hospital environment.
Voltage Dips IEC 61000-4-11	0% U_T: 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315° 0% U_T: 1 cycle 70% U_T: 25/30 cycles Single phase: at 0° (see note)	0% U_T: 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315° 0% U_T: 1 cycle 70% U_T: 30 cycles Single phase: at 0° (see note)	The quality of the main power supply must be that of a typical commercial or hospital environment. If the user of the Centuris™ Pro bed requires that the bed remain functional during outages of the mains power supply, it is advisable to power the Centuris™ Pro bed using a UPS or a battery.
Voltage Interruptions IEC 6100-4-11	0% U_T for 250/300 cycles	0% U_T for 300 cycles	
Note : U_T is the nominal value of the supply voltage applied during the test.			

Manufacturer's guide and declaration – electromagnetic immunity			
The Centuris™ Pro is designed for use in the electromagnetic environment specified below. Users must ensure that the bed is used in this environment.			
Immunity test	IEC 60601 Severity	Compliance	Electromagnetic environment - Guide
Conducted RF IEC 61000-4-6	3 Vrms 0.15 MHz - 80 MHz 6 V in ISM bands between 0.15 MHz and 80 MHz 80% AM at 1 kHz rms 150 kHz to 80 MHz	3 V 0.15 MHz - 80 MHz 6 V in ISM bands between 0.15 MHz and 80 MHz 80% AM at 1 kHz rms 150 kHz to 80 MHz	
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.7 GHz 80% AM at 1 kHz	3 V/m 80 MHz to 2.7 GHz 80% AM at 1 kHz	The field levels emitted by fixed RF transmitters, as determined by an electromagnetic measurement of the site[a], must be below the level of compliance in each frequency band[b]. Interference may occur close to devices identified with the following symbol: 
These recommendations may not apply to certain situations. The propagation of electromagnetic waves is affected by absorption and reflection due to structures, objects and persons.			

a. The field levels of fixed transmitters, such as radio telephone bases (cell/wireless) and terrestrial mobile radios, amateur radios and AM, FM and TV communication radios cannot be theoretically evaluated precisely. Site measurements are required in order to obtain the electromagnetic environment due to fixed RF transmitters. If the field level measured in the working environment of the Centuris™ Pro bed is greater than the above applicable levels of compliance, the operation of the Centuris™ Pro bed must be checked. If any anomalies are detected, additional measures must be taken, such as redirecting or relocating the reference equipment.

b. The field level must be less than 3V/m above the frequency band 150 kHz to 80 MHz.

Recommended separation distances

Recommended separation distances between portable and mobile RF communications equipment and the bed Centuris™ Pro

The Centuris™ Pro is designed for use in an electromagnetic environment in which interference due to radiated RF is monitored. The user of the Centuris™ Pro can contribute to the prevention of electromagnetic interference by keeping the Centuris™ Pro bed at the recommended distances from portable and mobile RF equipment (transmitters) as shown below, according to the maximum power output of the communication equipment.

Maximum assigned power output of the transmitter W	Separating distance versus the frequency of the transmitter m		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2.5 GHz
	$d = 1,16\sqrt{P}$	$d = 1,16\sqrt{P}$	$d = 2,23\sqrt{P}$
0,01	0,12	0,12	0,24
0,1	0,37	0,37	0,74
1	1,12	1,12	2,33
10	3,67	3,67	7,37
100	11,6	11,6	23,3

For transmitters with a maximum power output that is not in the list above, the recommended separation distance in meters (m) can be calculated using the equation that applies to the frequency of the transmitter, where P is the maximum output power of the transmitter in Watts (W) assigned by the manufacturer of the transmitter.

NOTE:

At 80 MHz and 800 MHz, the separating distance in the upper frequency band applies.

NOTE:

These recommendations may not apply to certain situations. The propagation of electromagnetic waves is affected by absorption and reflection due to structures, objects and persons.