LINET

Instructions for Use and Technical Description

Image 3 B

Bariatric hospital bed for acute care

D9U001AM2-0101

Version: 07

Publication Date: 2023-03

Manufacturer:

L I N E T spol. s r. o.
Želevčice 5
274 01 Slaný
Czech Republic

Tel.: +420 312 576 111
Fax: +420 312 522 668
E-mail: info@linet.cz
http://www.linet.cz
Service department: service@linetgroup.com

Authorized Representative in Great Britain:

LINET UK Ltd
11 Brunel Way
Segensworth East
Fareham
Hampshire
PO15 5TX
United Kingdom

Authorized Representative in Switzerland:

Bigla Care AG
Bernstrasse 3
CH-3421 Lyssach
Switzerland

Authorized Representative in Malaysia:

Emergo Malaysia Sdn. Bhd.
Level 16, 1 Sentral, Jalan Stesen Sentral 5
KL Sentral
50470 Kuala Lumpur
Malaysia

Authorized Representative in Peru:

Drogería Emergo Peru S.R.L.
Calle Las Orquídeas Nro. 585, Int. 1301
San Isidro, Lima
Director Técnico Renato Delgado Rivera
RUC: 205 52 75 65 35
Peru

Authorized Representative in Philippines:

Biomedica Healthcare Inc.
Unit 2103 City land 10, Tower 1
Ayala Corner, Dela Costa Street
Makati City, Metro Manila
Philippines

Image 3 B
Bariatric hospital bed for acute care

Author: L I N E T, s.r.o.
Related links: www.linet.cz

D9U001AM2-0101
Version: 07
Publication date: 2023-03

Table of Contents

1 Symbols and Definitions

1.1 Warning Notices

1.1.1 Types of Warning Notices

Warning notices are differentiated by the type of danger using the following signal words:

► **CAUTION** warns about the risk of material damage.
► **WARNING** warns about the risk of physical injury.
► **DANGER** warns about the risk of fatal injury.

1.1.2 Structure of Warning Notices

SIGNAL WORDS!
Type and source of danger!
► Measures to avoid the danger.

1.2 Instructions

Structure of instructions:

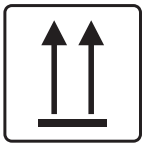
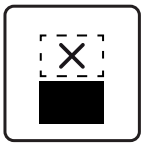
► Perform this step.
Results, if necessary.

1.3 Lists

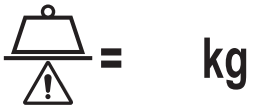
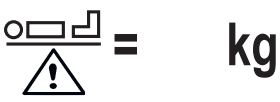
Structure of bulleted lists:

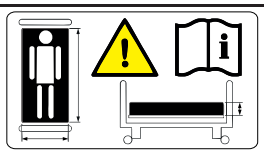
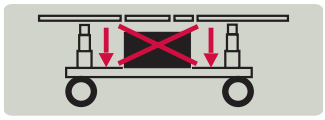
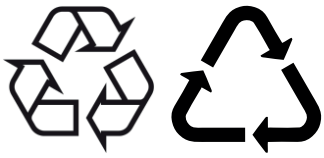
- List level 1
  - List level 2
    - List level 3

1.4 Symbols on the Package

	FRAGILE, HANDLE WITH CARE
	THIS WAY UP
	KEEP DRY (PROTECT FROM HUMIDITY)
	PAPER RECYCLING SYMBOL
	DO NOT USE HAND TRUCK HERE
	DO NOT STACK DURING STORAGE

1.5 Symbols and Labels on the Bed

	READ INSTRUCTIONS FOR USE
	WARNING
	THERMAL PROTECTION OF TRANSFORMER
	ONLY SUITABLE FOR INDOOR USE
	PROTECTION AGAINST ACCIDENTS DUE TO ELECTRICAL CURRENT – TYPE B APPLIED PARTS
	SAFETY ISOLATING TRANSFORMER, GENERAL
	CE MARK OF CONFORMITY WITH EU REGULATION
	JACK FOR ATTACHMENT OF CONDUCTOR FOR POTENTIAL EQUALISATION
	SAFE WORKING LOAD
	WARNING AGAINST CRUSHING OR TRAPPING
	MAXIMUM WEIGHT OF PATIENT

	USE MATTRESS RECOMMENDED BY MANUFACTURER
	WEIGHT OF BED
	DO NOT PUT ANY OBJECTS HERE
	WEEE SYMBOL (RECYCLE AS ELECTRONIC WASTE, DO NOT PUT INTO THE HOUSEHOLD WASTE)
	MEDICAL DEVICE (COMPATIBLE WITH MEDICAL DEVICE REGULATION)
	RECYCLING SYMBOL
	DO NOT POLLUTE THE ENVIRONMENT
	MANUFACTURER
	MANUFACTURING DATE
	REFERENCE NUMBER (PRODUCT TYPE DEPENDING ON CONFIGURATION)
	SERIAL NUMBER

	GO BUTTON (PRESS TO ACTIVATE CONTROL ELEMENT)
	STOP BUTTON (PRESS TO INTERRUPT BED POSITIONING)
	HEAD BOARD UNLOCKED OR FOOT BOARD UNLOCKED (POWDER COATED HEAD BOARD AND FOOT BOARD)
	HEAD BOARD LOCKED OR FOOT BOARD LOCKED (POWDER COATED HEAD BOARD AND FOOT BOARD)
	MASS OF MOBILE HOSPITAL BED (MASS OF EMPTY BED + SAFE WORKING LOAD)
UK CA	UK CONFORMITY ASSESSED (UKCA) MARKING (PRODUCT NORMATIVELY HARMONIZED FOR GREAT BRITAIN ECONOMIC AREA)
UK REP	AUTHORIZED REPRESENTATIVE IN GREAT BRITAIN
CH REP	AUTHORIZED REPRESENTATIVE IN SWITZERLAND

1.6 Acoustic signalisation

SOUND	MEANING
CONTINUOUS SOUND	overheating
	accumulator overcurrent
	actuator overload
REPEATED BEEP: 0,6s sound / 2,6s silence	STOP error (all STOP buttons are disabled)
REPEATED BEEP: 0,1s sound / 3s silence	switching of the transformer winding error (Brazil)
BEEP lasting 0,3s	confirmation
	stopping or locked function
	optionally: transition from tilt (Trendelenburg, Antitrendelenburg) to horizontal position
BEEP lasting 0,5s	lowering to the lowest position
	start of service mode or end of service mode
	keyboard error (positioning blocked)
BEEP lasting 3s	system error
REPEATED BEEP during 3 minutes: 1,1s sound / 1,1s silence	Brake Signal (only version with Brake Signal)

1.7 Visual signalisation

1.7.1 Mains Power LED (Attendant Control Panel)

MAINS POWER LED 	MEANING
lit	connected to the mains
flashing: 0,6s lit / 0,6s not lit	keyboard error (flashing inverted to Lock LED)
	error (first fault)
flashing: 0,1s lit / 0,1s not lit	service mode
not lit	disconnected from the mains power
	transformer switching error

1.7.2 Accumulator Indicator (Attendant Control Panel)

ACCUMULATOR INDICATOR 	MEANING
lit	accumulator disconnected or faulty
flashing: 1,6s lit / 0,2s not lit	accumulator deeply discharged
flashing: 0,1s lit / 0,1s not lit	accumulator discharged
flashing: 0,2s lit / 1,6s not lit	accumulator is charging
not lit	accumulator charged

1.7.3 Lock LED (Attendant Control Panel)

VISUAL SIGNALISATION / LOCK LED	lit	flashing: 0,6s lit / 0,6s not lit			not lit
Thighrest Lock LED	locked	lock error	keyboard error	motion blocked	unlocked
Backrest Lock LED	locked	lock error	keyboard error	motion blocked	unlocked
Bed Height, Trendelenburg and Antitrendelenburg Tilt Lock LED	locked	lock error	keyboard error	motion blocked	unlocked

1.8 Night Bed Illumination

It is possible to equip Image 3 B with undercarriage illumination. The lightning helps the patient or hospital personnel to better orientate in room with lowered or turned off light. The lowered intensity of lightning is set up after turning the bed on.

The bed is equipped with three-phase illumination:
1. Full intensity of illumination
2. Lowered intensity of illumination
3. Illumination is turned off

The lowered intensity of illumination is set up after the bed is turned on.

After pressing the GO button:
► The handset and bed illumination will light up at full intensity.

After elapsing the GO period:
► The illumination intensity of handset will be lowered.

7 minutes after GO period has elapsed:
► The intensity of bed illumination will be lowered.

In the event any button is pressed (Attendant Control Panel, Handset) outside of GO period:
► The bed illumination will light up at full intensity for 10 minutes and after that, the illumination will be lowered.
► Simultaneously, the handset will light up at full intensity for 7 seconds. After that the illumination will be lowered.

Turning off all illumination:
► Press Bed Lights control Button on the Attendant Control Panel and all illumination on the bed (handset and bed illumination) will be turned off. This function is not blocked by the activation GO button.

1.9 Definitions

Basic Bed Configuration	the pricelist model configuration, not including a mattress
Bed Weight	The value depends on the product configuration, accessories or customer adjustments.
Clearance of Undercarriage	the height from the floor to the lowest point of the undercarriage between the castors, for the manipulation of accessories under a braked bed in the standard position
Duty Cycle	cycle of operation of the motor: time of activity/time of rest
Ergoframe	Ergoframe is the kinematic system of Mattress support platform Adjustment whose effect is the elimination of pressure on the patient´s abdomen and pelvic area and frictional forces on the patient‘s back and legs.
Maximum Patient Weight	Maximum Patient Weight depends on the application environment according to IEC 60601-2-52. For application environment 1 (intensive/critical care) and 2 (acute care) reduce Safe working Load by 65 kg. For application environment 3 (long-term care) and 5 (ambulatory care) reduce Safe working Load by 35 kg.
Safe Working Load	the highest allowable load on the bed (patient, mattress, accessories and the load supported by those accessories)
Siderail Height	the height of the upper crossbar or the edges of the siderails (not the highest point of the siderail controls) from the patient surface
Standard Bed Position	■ The height of the patient surface with regard to the floor is 400 mm ■ The mattress support platform, including the individual parts, has to be in a horizontal (level - 0°) position. ■ The siderails are always locked in the upper position. ■ The basic position of the integrated extension.
Adult	Patient having a physical size equal to or more than 146 cm, a mass equal to or more than 40 kg and a body mass index (BMI) equal to or more than 17 (according to IEC 60601-2-52).
Mass of mobile hospital bed	Sum of empty bed mass and Safe Working Load.

1.10 Abbreviations

AC (~)	Alternating Current
ACP	Attendant Control Panel
CE	European Conformity
CPR	Cardiopulmonary Resuscitation
dBA	Sound Intensity Unit
DC (⎓)	Direct Current
CUC	Configuration number
EMC	Electromagnetic Compatibility
FET	Field-effect transistor
HF	High Frequency
HPL	High Pressure Laminate
HW	Hardware
ICU	Intensive Care Unit
INT.	Duty Cycle
IP	Ingress Protection
IV	Intravenous
LED	Light Emitting Diodes
ME	Medical Electrical (Equipment)
ON	Activation
OFF	Deactivation
ppm	parts per million, millionth (1000 ppm = 0,1%)
REF	Reference Number (product type depending on configuration)
SCU	System Control Unit (active mattress)
SN	Serial Number
SW	Software
SWL	Safe Working Load
UDI	Unique Device Identification (for medical devices)
USB	Universal Serial Bus
WEEE	Waste Electrical and Electronic Equipment

2 Safety Instructions

WARNING!
Image 3 B bed should be left in its lowest position when the patient is unattended in order to reduce risk of injury due to falls!

WARNING!
Siderails of Image 3 B should be located in the „up“ position to reduce the risk of the patient accidentally slipping or rolling off the mattress!

WARNING!
Incompatible siderails and mattresses can cause an entrapment hazard!

WARNING!
Inappropriate handling of the power supply cord, e. g. by kinking, shearing or other mechanical damages is hazardous!

WARNING!
When routing cables from other equipment in the Image 3 B bed avoid squeezing those between parts of the Image 3 B bed!

WARNING!
Image 3 B bed should not be used with bed hoists and bed lifts!

WARNING!
The bed is intended for adults.
Follow chapter Intended use.

WARNING!
Incompatible mattresses can create hazards.

WARNING!
To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

WARNING!
No modification of this equipment is allowed.

WARNING!
Do not modify this equipment without authorization of the manufacturer.

WARNING!
If this equipment is modified, appropriate inspection and testing must be conducted to ensure continued safe use of the equipment.

WARNING!
An additional MULTIPLE SOCKET-OUTLET or extension cord shall not be connected to the MEDICAL ELECTRICAL SYSTEM.

WARNING!
During specific investigations or treatments the significant risks of reciprocal interference posed by ME equipment may occur.

DANGER!
Risk of injury or death due to use of incorrect equipment!
► Always conduct the risk assessments required for the selection of suitable equipment.

WARNING!
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!

WARNING!
Only authorised and trained person using the tool is allowed to change fuses and power supplies!

WARNING!
This medical device is not intended for oxygen enriched environment!

WARNING!
This medical device is not intended for use with flammable substances!

WARNING!
This medical device is not portable medical electrical equipment!

WARNING!
Make sure the duty cycle (2 min ON/18 min OFF) is not exceeded during bed positioning!

WARNING!
Patient is allowed to use selected control elements only if hospital personnel had assessed that the patient´s physical and psychological state is in accordance with use of them and only if the hospital personnel had trained the patient in accordance with the instructions for use!

► Follow the instructions for use carefully.
► Any non-observance of this manual may lead to injuries or material damage.
► Exclusively use the bed if it is in perfect working order.
► If necessary, check the bed functions daily or at each shift change.
► Use the bed exclusively in its original condition.
► Use the bed exclusively with the correct mains supply.
► Ensure that the bed is operated exclusively by qualified personnel who have been trained according to the instructions for use.
► Ensure that the patient (health permitting) has been informed about the operation of the bed and all applicable safety instructions.
► Move the bed exclusively on even, hard-surfaced floors.
► Replace any damaged parts immediately with original spare parts.
► Ensure that maintenance and installation are performed exclusively by qualified personnel who have been trained by the manufacturer.
► Do not apply excess weight or loads to the bed according to SWL (safe working load).
► During peak loads or unavoidable excess loads (CPR), place mattress platform in the lowest position.
► Ensure that only one adult patient uses the bed at any time.
► Take care to avoid injuries or squeezing when operating moving parts.
► When using lifting poles or infusion stands, ensure that nothing will be damaged when you move or adjust the bed.
► Ensure that castors are braked when the bed not being moved, regardless of whether the bed is occupied or empty
► Keep the mattress platform in the lowest position at any time when the healthcare personnel are not treating the patient in order to prevent the patient from falling or injuries.
► Ensure that siderails are operated exclusively by healthcare personnel.
► Never use the bed in areas where there is a hazard of explosion.
► Enable or disable functions on the handset using the Attendant Control Panel as appropriate for the patient’s physical and mental state. Verify that the function is actually disabled.
► Never handle the mains plug with wet hands.
► Unplug the mains cable exclusively by pulling on the plug.
► Position the mains cable so that there are no loops or bends in the cable; protect the cable from mechanical wear and tear.
► Improper handling of mains cable can cause an electric shock hazard, other serious injuries or damage to the bed.
► Ensure that the stipulated duty cycle (on-time) is not exceeded (see INT. on product label).
► Ensure that the moving parts of the bed are not blocked.
► To prevent failures, use exclusively the manufacturer’s original accessories and mattresses.
► Ensure that the stipulated safe working load is not exceeded.
► If the patient‘s condition could lead to an entrapment, leave the mattress support platform in the flat position while the patient is unattended.
► Adjust bed height to approx. 20 cm below maximum height when transporting the bed in order to facilitate overcoming possible obstacles.
► Do not exceed maximum load of 75 kg for mattress platform extension.
► Ensure that the bed and its components are exclusively modified with the manufacturer´s approval.
► Ensure there is no risk of crushing or otherwise injuring the patient’s limbs (e.g. between siderails and mattress platform, between movable parts etc.) before positioning the bed or folding down the siderails.
► Close linen shelf before using the Antitrendelenburg position.
► Do not put any objects (e.g. accessories, infusions, cables) between or on siderails and movable parts.
► Use exclusively split plastic or split telescopic siderails for confused or disoriented patients.
► Before setting the extra-low position, ensure there is no risk of any parts of the bed colliding with servers, accessories or body parts.
► Ensure there is no risk of damaging the cables of Attendant Control Panel or handset when they are stored on siderails or head board/foot board.
► To prevent collisions, do not put oxygen bottle holders directly under mattress platform.
► Always set mattress platform to its lowest position and single parts of mattress platform to horizontal position in case the patient is left on the bed without supervision of personnel and if his health and mental status may indicate increase risk of falling out of the bed or entrapment.
► Personnel must consider overall adjustment of the bed and locking all of the positioning functions in accordance to health and mental status of patient, especially if the patient is left without supervision (even for short period of time) of the personnel.
► Manual positioning of parts of the bed which are designed for electronic positioning (e.g. backrest) is forbidden. Otherwise there is a risk of damaging and dysfunction of the backrest actuator or unprompted fall of the backrest.

3 Intended use

The intended use is the hospitalization of the patient in the acute and long-term care units, which includes above all the following aspects:

► Adjustment of the specific positions needed for the preventive reasons, routine nursing, treatments, mobilization, physiotherapy, examinations, sleeping, and relaxation. These positions are further specified and described in the clinical evaluation of this device, together with their potential clinical outcomes and benefits.

► Providing the safe environment for the patient during all relevant procedures. The particular requirements on patient safety are the subject of the clinical evaluation, including evaluation of the risk/benefit ratio. The relevant safety issues are the part of the risk management file.

► Patient in-bed indoor transport out of the patient room.

► Providing the suitable working conditions for the caregivers to perform the routine and specific tasks during the patient hospitalization.

3.1 User population

► Adult overweight patients in the standard care units (based on individual patient status assessment by caregiver the patient can utilize dedicated device functions)

► Caregivers (nurses, doctors, technical personnel, transport personnel, cleaning personnel)

3.2 Contraindications

► The medical device is not intended for the pediatric patients use.

Certain positions are not suitable for specific diagnoses/medical conditions (e.g. spinal cord injuries vs. Fowler position, higher ICP patients vs. Trendelenburg). Staff expert assessment / nursing consideration is needed in all individual case of contraindication.

3.3 Operator

► Caregiver

► Patient (based on individual patient status assessment by caregiver the patient can utilize dedicated device functions)

4 Incorrect Use

Image 3 B is not suitable for:

- Use
  - Other than described in the instructions for use

NOTE For information concerning uses other than those outlined in the “Intended use” section above, please contact LINET®.

LINET®’s efforts in research, design and manufacture ensure LINET® products are of the highest quality and fit for their intended purpose. However, LINET® can take no responsibility for any damage to the products or any harm to patients, staff or other individuals resulting from:

► Not following the instructions in the manual, including warning notices.

► Using the product for a purpose other than the intended purpose stated in the relevant documentation provided by LINET® (see Intended use).

5 Product Description

5.1 Image 3 B (1AM2) - Single Collapsible Siderails and Powder Coated Head Board and Foot Board

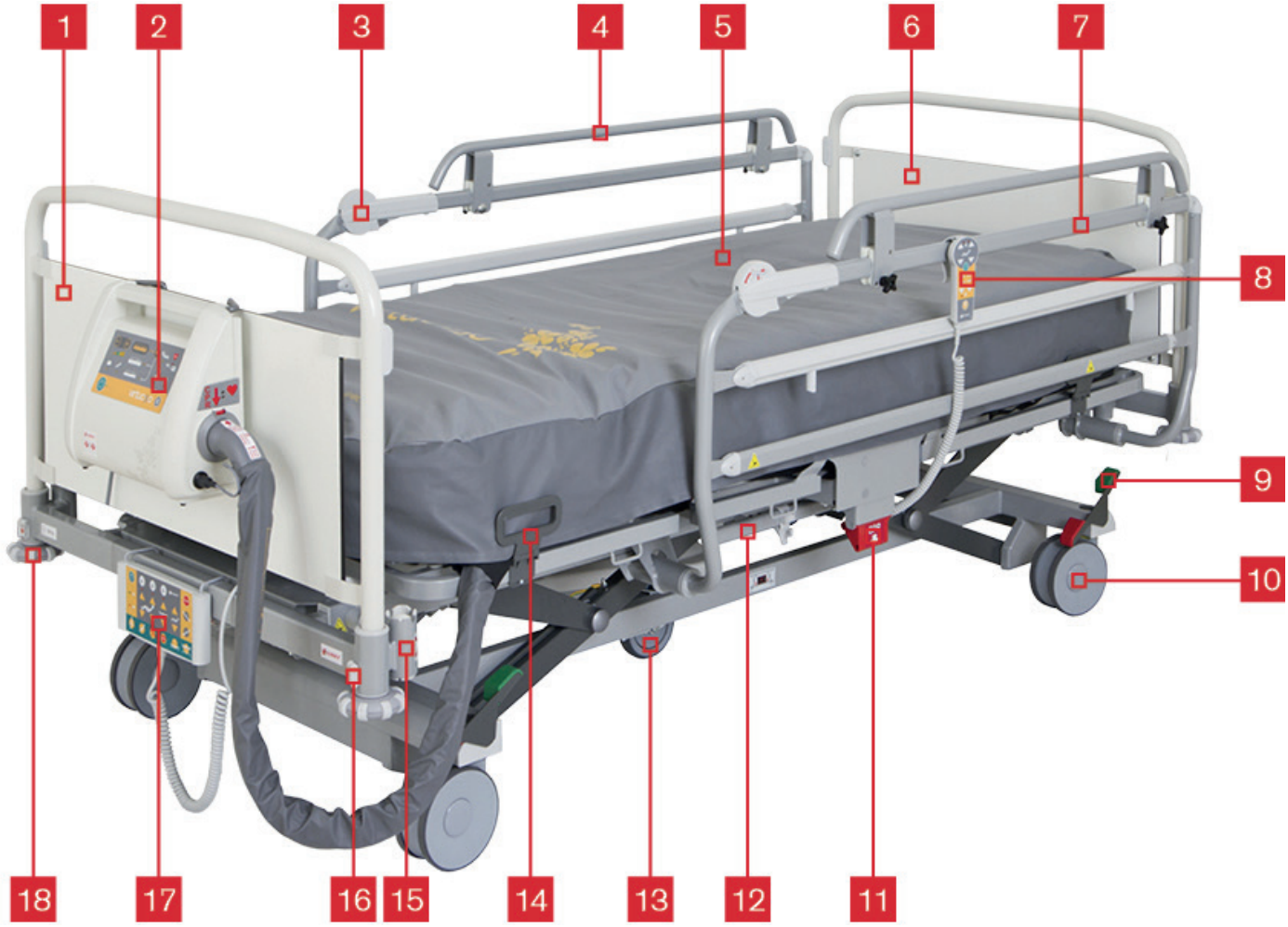


Fig. Overview Image 3 B – Single Collapsible Siderails

1. **Foot board**
2. **Virtuoso II compressor**
3. **Siderail release mechanism**
4. **Siderail extension – Extender®**
5. **Virtuoso II active mattress for bariatrics**
6. **Head board**
7. **Single collapsible siderails**
8. **Handset**
9. **Castor control lever**
10. **Castor**
11. **CPR control lever – backrest release**
12. **Accessories rail**
13. **Fifth castor**
14. **Calfrest handle / Mattress holder**
15. **Housing for the Protector®**
16. **Foot board unlocking mechanism**
17. **Attendant Control Panel**
18. **Protective bumper**

NOTE For safe, easy handling, LINET® recommends that two technicians put the bed into service.

6 Technical Specification

6.1 Applied parts type B

All the accesories the patient can reach are type B applied parts.

List of type B applied parts:

- ACP Attendant Control Panel
- Handset
- Satellite controller
- Siderails
- Head board and foot board
- Mattress support platform

6.2 Mechanical Specification

Parameter	Value
Dimensions	220 cm x 110 cm
Siderail Height Above Mattress Support Platform	48 cm
Siderails Length	146 cm
Maximum Mattress Height	26 cm
Mattress Support Platform Dimensions (Mattress)	200 cm x 100 cm
Mattress Support Platform Extension	0 cm / 10 cm / 22 cm / 30,5 cm
Mattress Support Platform Height Adjustment	28 cm – 80 cm (85 cm - depending on configuration)
Undercarriage Clearance	13 cm (15,5 cm - depending on configuration)
Castor Diameter	12,5 cm
Maximum Backrest Angle	70°
Maximum Thighrest Angle	34°
Ergoframe®	10 cm / 6 cm
Trendelenburg	14°
Antitrendelenburg position	14°
Bed Weight	160 kg
Maximum Lifting Pole Load	100 kg
Safe Working Load (including Mattress and Accessories)	320 kg
Mass Of Mobile Hospital Bed (Mass Of Empty Bed + Safe Working Load)	492 kg
Maximum patient weight Application environment 1, 2 Application environment 3, 5	 255 kg 285 kg

6.3 Environment Conditions

Environmental Conditions - Operation	
■ Ambient Temperature ■ Relative Humidity ■ Atmospheric Pressure	10 °C — 40 °C 30 % — 75 % 795 hPa — 1060 hPa
Environmental Conditions - Storage and Transport	
■ Ambient Temperature ■ Relative Humidity ■ Atmospheric Pressure	-20°C — +50°C 20% — 90% (non-condensing) 795 hPa — 1060 hPa

6.4 Electrical Specifications

DANGER!
Danger to life due to electric shock!
► Ensure that maintenance and service of electrical parts are performed only by qualified personnel if the bed is connected.

Parameter	Value
Input Voltage	**230 V AC, 50/60 Hz** **100 V AC, 50/60 Hz** **110 V AC, 50/60 Hz** **120 V AC, 50/60 Hz** **127 V AC, 50/60 Hz** **110-127 V AC, 50/60 Hz or 230 V AC, 50/60 Hz**
Maximum Power Input	**370 VA**
Ingress Protection	**IP X4**
Safety Class	**Class I (with type B Applied Parts)**
Electrical Motor Duty Cycle	**max. 2 minutes ON / 18 minutes OFF**
Accumulator **Fuse** **Version 1** **Version 2** **Version 3**	**Pb ACCU 2 x 12 V / 1,2 Ah / Fuse 15A** **2x T1.6A L 250 V for 230 V version** **2x T3.15A L 250 V for 100-127 V version** **2x T1.6A L 250 V for 230 V version / 2x T3.15A L 250 V for 100-127 V version**

NOTE Upon request, LINET® can deliver hospital beds with electrical specifications that comply with regional standards (custom voltage, different mains plugs).

6.5 Electromagnetic compatibility

Bed is intended for hospitals except for near active HF surgical equipment and the RF shielded room of a medical system for magnetic resonance imaging, where the intensity of EM disturbances is high.

Bed has defined no essential performance.

WARNING!
It is recommended to avoid the use of this device next to or in block with other device, because it could lead to improper operation. If such use is needed, this device and the other equipment should be under surveillance to verify proper operation.

List of used cables:
1. Mains cable, maximum length 6 m
2. ACP Attendant Control Panel, maximum length 3m
3. Handset, maximum length 3m

WARNING!
Use of the accessories, converters and other cables, than specified and provided by manufacturer of this bed could lead to increase of electromagnetic emission or lower the electromagnetic immunity of this bed and lead to improper operation.

WARNING!
Mobile RF communication device (including end use devices like antenna cables and external antenna) should not be used closer than 30 cm (12 inches) from any part of this Image 3 B bed, including cables specified by manufacturer. Otherwise this could lead to deterioration of functionality of this bed.

WARNING!
Do not overload the bed (SWL), respect the duty cycle (INT.) and consider chapter 18 Maintenance in order to maintain the basic safety with regard to electromagnetic disturbances for the expected service life.

6.5.1 Manufacturer instructions - electromagnetic emissions

Emission Test	Compliance
RF emissions CISPR 11	Group 1
RF emissions CISPR 11	Class B
Harmonic emissions IEC 61000-3-2	Class A
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies

6.5.2 Manufacturer instructions - electromagnetic susceptibility

Immunity Tests	Compliance level
Electrostatic discharge (ESD) IEC 61000-4-2	± 8 kV for contact discharge ± 15 kV for air discharge
Radiated RF IEC 61000-4-3 Proximity fields from RF wireless communications equipment IEC 61000-4-3	3 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz See Table 1
Fast electrical transients / burst IEC 61000-4-4	±2 kV for power line repetition frequency 100 kHz
Surge IEC 61000-4-5	± 1 kV Line-to-line ± 2 kV Line-to-ground
Conducted RF IEC 61000-4-6	3 V (0,15 MHz – 80 MHz) 6 V in ISM bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m
Voltage dips, short interruptions on power supply input lines IEC 61000-4-11	0 % UT; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° a 315° 0 % UT; 1 cycle and 70 % UT; 25/30 cycle Single phase: at 0° 0 % UT; 250/300 cycle

Table 1 - IMMUNITY to RF wireless communications equipment

Test frequency (MHz)	Band (MHz)	Service	Modulation	Immunity Test Level V/m
385	380 - 390	TETRA 400	Pulse modulation 18 Hz	27
450	430 - 470	GMRS 460, FRS 460	FM ± 5 kHz deviation 1 kHz sine	28
710 745 780	704 - 787	LTE band 13, 17	Pulse modulation 217 Hz	9
810 870 930	800 - 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE band 5	Pulse modulation 18 Hz	28
1 720 1 845 1 970	1 700 - 1 990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE band 1, 3, 4, 25; UMTS	Pulse modulation 217 Hz	28
2 450	2 400 - 2 570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE band 7	Pulse modulation 217 Hz	28
5 240 5 500 5 785	5 100 - 5 800	WLAN 802.11 a/n	Pulse modulation 217 Hz	9

NOTE There are applied no deviations to requirements of IEC 60601-1-2 ed. 4

NOTE There are no known other measures for keeping the basic safety based on EMC phenomena.

NOTE Beds equipped with communication module meet standard for IEEE 802.11 b/g/n (2400,0 MHz – 2483,5 MHz, modulation DSSS (IEEE 802.11 b), OFDM (IEEE 802.11 g/n) 20MHz bandwidth, EIRP = 0,34 W).

7 Use and Storage Conditions

The bed may not be used and stored in indoor environments:

► Where there is a risk of explosion.
► Containing inflammable anaesthetics.

The bed is designed for use in rooms for medical purposes. Electrical installations must therefore meet local stan-dards laying down the necessary conditions for electrical installations.

► Disconnect the bed from the mains in exceptional cases (i.e. lightnings, earthquake).

8 Scope of Delivery and Bed Variants

8.1 Scope of Delivery

Delivery:

- Upon receipt, check that the shipment is complete as specified on the delivery note.
- Notify the carrier and supplier of any deficiencies or damages immediately as well as in writing or make a note on the delivery note.
- The bed is delivered with deactivated accumulator. To activate accumulator see chapter “Accumulator activation”.

8.2 Bed Variants

8.2.1 Standard version: Image 3 B Model 1AM2

Features – Image 3 B Model 1AM2 (model no. see product label):

- Mattress Support Platform
  - mattress platform consisting of removable plastic segments
- Head Board and Foot Board
  - powder coated with fixed, coloured HPL panels
  - aluminium head board and foot board with fixed coloured HPL panels
- Siderails
  - Single collapsible siderails, powder coated
- Castors
  - 125 mm Tente Linea with individual braking system
  - 150 mm Tente Linea, with central braking system
- Control Elements
  - ACP Attendant Control Panel
  - Handset with illuminated keyboard
  - Handset without illuminated keyboard
- Other
  - Linen shelf
  - Vertical safety bumpers
  - One pair of universal accessory holders
  - One pair of urinary bag holder
  - CPR emergency backrest release
  - Segufix holders
- Colour concept
  - Powder-coated metal parts RAL 9006 (light grey) + RAL 7043 (dark grey)
  - Powder-coated metal parts RAL 9002 (white)

9 Putting into Service

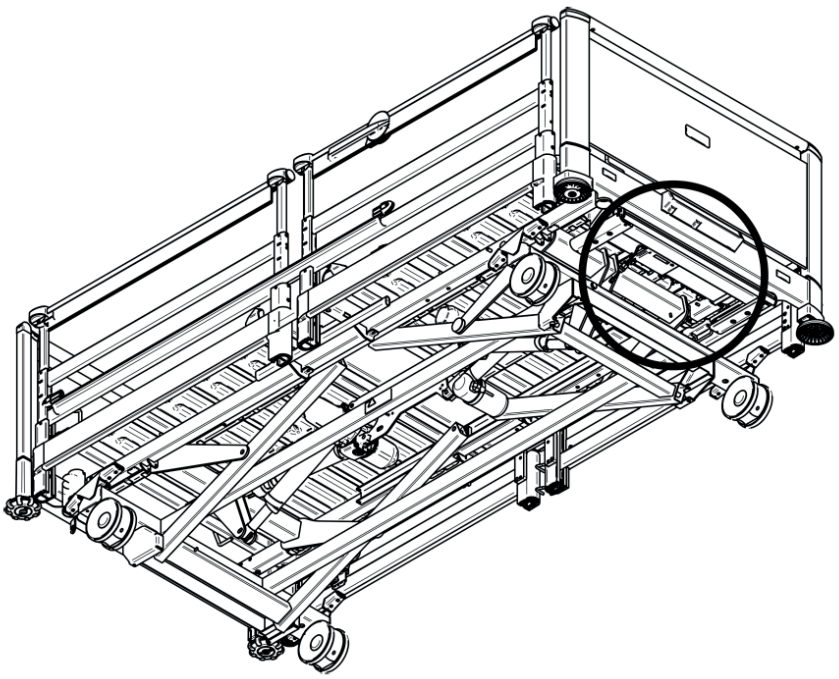
WARNING!
Risk of injury when working on the bed!
► Ensure that the bed is disconnected from the mains connection prior to putting into service, putting out of service and maintenance.
► Ensure that the castors are locked prior to putting into service, putting out of service and maintenance.

CAUTION!
Material damage due to incorrect putting into service!
► Ensure that putting into service is performed exclusively by manufacturer´s customer service or trained hospital personnel.

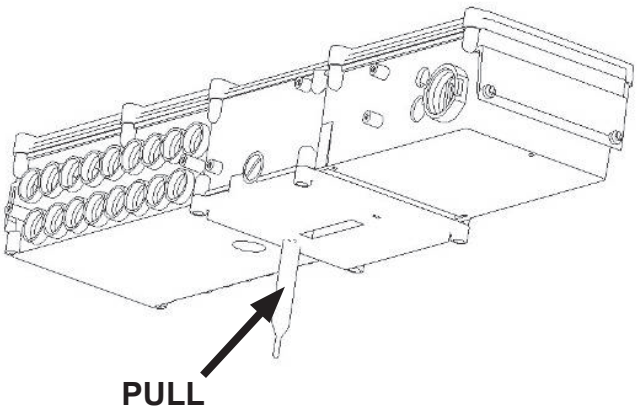
Set up the bed as follows:
► Unpack the bed.
► Check the delivery (see Scope of Delivery).
► Remove isolating foil from mains control box (see Removing Isolating Foil).
► Install equipment and accessories.
► In case of delivery with dismounted head board and foot board, mount the head board and foot board (see Head Board and Foot Board).
► Set-up the bed only on a suitable floor surface (see Transport).
► Ensure the mains cable does not collide or get stretched when adjusting the bed. Check the plug is inserted correctly.
► Do not leave any extension cords or power strips loose on the floor.
► Ensure all the required mechanical and electrical prevention mechanisms are available on site.
► There is no mains switch on the bed, i.e. the mains cable is the only means to isolate the bed from the mains.
► Ensure the mains cable is always accessible.
► The plug on the mains cable should only be changed and maintained by qualified and trained service technicians authorised by the manufacturer.

9.1 Accumulator Activation

9.1.1 Placement of Control Section

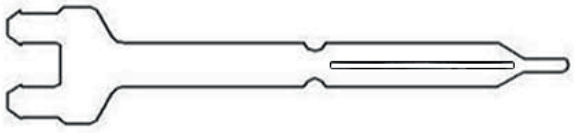


9.1.2 Removing the Isolating Foil



9.1.3 Isolating Foil

Check if isolating foil is complete and undamaged as shown:



If isolating foil is damaged, contact the manufacturer’s service department immediately.

NOTE: It is recommended to wear gloves when removing the isolating foil.

9.2 Head Board and Foot Board

WARNING!
Risk of injury when inserting the head board and foot board!
► To insert head board and foot board into corner posts, hold them by the corner handles on top with both hands.
► Install head board and foot board before the first use.

WARNING!
Risk of injury due to incorrectly installed head board and foot board!
► Ensure head board and foot board are correctly inserted, especially when moving the bed.
► Ensure head board locks and foot board locks are locked, especially when moving the bed.

WARNING!
Risk of injury when removing the head board and foot board!
► Before removing head board and foot board, ensure siderails are folded down and there are no accessories attached to the head board and foot board.
► If a patient is lying in a bed with the head board and/or foot board removed, supervise the bed at all times.

WARNING!
Material damage due to excess load!
► Ensure nobody sits on the head board or foot board.

NOTE: The head board and foot board may be delivered in several decor colour variants.

9.2.1 Aluminium head board and foot board

Fig. Locking the head board or foot board (aluminium head board and foot board)

1. Locked
2. Unlocked

Manipulation with head board and foot board

Insert the head board or foot board as follows:
► Unlock safety levers on corner posts (**red arrow** on the picture marks direction).
► Slide head board or foot board into slots on corner posts with coloured panel on the outside.
► Lock safety levers on corner posts.

Remove the head board or foot board as follows:
► Unlock safety levers on corner posts.
► Pull head board or foot board upward.

9.2.2 Powder coated head board and foot board

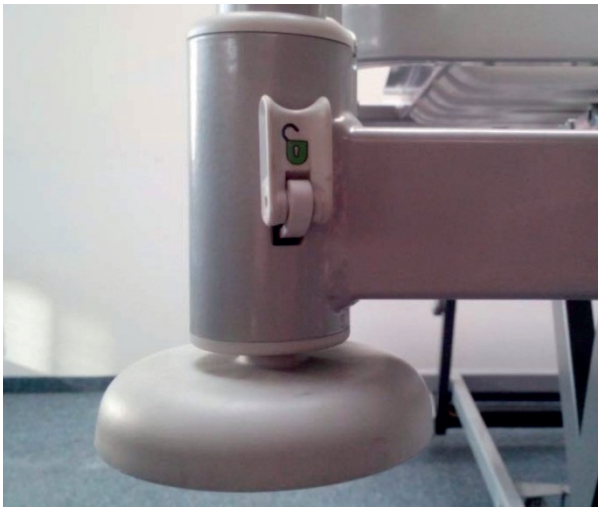


Fig. Unlocked position

Fig. Locked position

1. **Unlocked (the head board or foot board can be removed)**
2. **Locked (head board or foot board is locked)**

Manipulation with head board and foot board

Insert the head board or foot board as follows:

- ► Unlock safety levers on corner posts (**green lock** - unlocked, **red lock** - locked).
- ► Slide head board or foot board into slots on corner posts with coloured panel on the outside.
- ► Lock safety levers on corner posts.

Remove the head board or foot board as follows:

- ► Unlock safety levers on corner posts.
- ► Pull head board or foot board upward.

9.2.3 Correct Orientation of Head Board and Foot Board

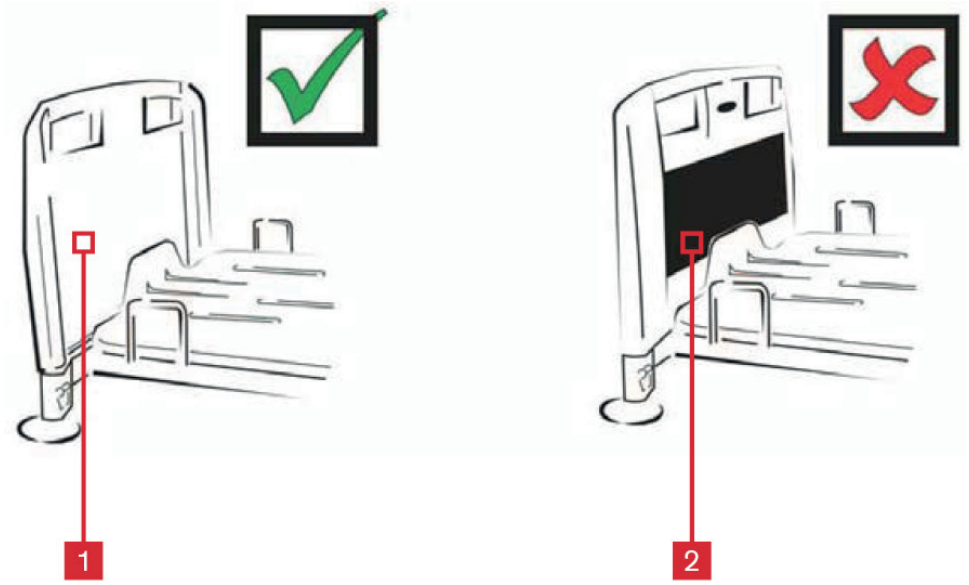


Fig. Installing the head board and foot board

1. **Right (coloured panel outside)**
2. **Wrong (coloured panel inside)**

NOTE: It is possible to install head board or foot board to the bushings with locked lock.

9.3 Mattress support platform

The mattress support platform consists of removable plastic sections.

Fig. Mattress support platform

To remove/install sections of the mattress platform:

- ► Pull out mattress support platform sections.
- ► Install mattress support platform section.
- ► The correct fitting of section is signalized by hearable “click”.
- ► Ensure that mattress support platform sections are fitted correctly by trying pull the section up with little manpower.

*Fig. Bed sides (**H**=head, **F**=foot, **R**=right, **L**=left)*

9.4 Potential Equalisation

The bed is equipped with a standard protective connector. This connector is used for potential equalisation between the bed and any intravascular or intracardiac device connected to the patient to protect the patient from static electric shocks.

Fig. Potential equalisation connector – male

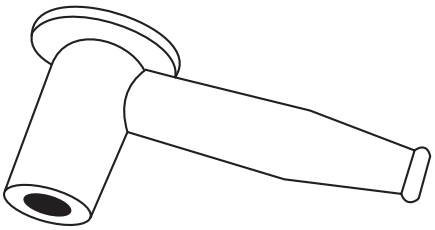


Fig. Potential equalisation connector - female

Use equalisation connector if:

- The patient is connected to any intravascular or intracardiac device.

Before connecting the patient to an intravascular/intra-cardiac device:

- ► Connect the ground wire of the device to the potential equalisation connector on the bed on which the patient in question is lying.
- ► Use a standard hospital connector.
- ► Make sure the connectors match.
- ► Make sure there is no possibility of accidental disconnection.

Before moving the bed:

- ► Disconnect the patient from the intravascular or intracardiac device.
- ► Disconnect the potential equalisation connector.

9.5 Before Use

CAUTION!
Material damage due to temperature difference!
► If there is a considerable temperature difference between the bed and the place of operation (after transport/storage), leave bed unconnected for 24 hours to allow the temperature to equalise.

Prepare the bed for service as follows:
► Dispose of all packaging (see Disposal).
► Connect the bed to the mains.
► Charge the accumulator.
► Raise the mattress platform to the highest position.
► Remove the isolating foil from control section.
► Lower and tilt the mattress platform to the lowest position.
► Check the castors and main brake work correctly.
► Check the bed extension works correctly.
► Check it is possible to remove the head and foot boards.
► Check all of the functions on the control elements (Attendant Control Panel etc.).
► Check the siderails function properly.

9.6 Transport

For safe transport, observe the following:
► Ensure no cables are run over when moving a bed.
► Ensure the mains cable is attached with a hook (at the head end of the bed).
► Ensure the castors are unlocked before moving the bed during the loading/unloading process (see Castor Control and Bed Transport).
► Ensure the siderails are lifted and locked while the patient is on the bed during the transport.
► Move the bed only on suitable floor surfaces.

Suitable surfaces:
■ Tile
■ Hard linoleum
■ Hard flooring

Unsuitable surfaces:
■ Soft, unsealed or defective flooring
■ Soft wooden flooring
■ Soft and porous stone floors
■ Carpeted floors with underlay
■ Soft linoleum
  □ For longer distances, ensure the castor steering function (main control) is activated.
  □ Ensure the brakes are released while moving the bed.

9.7 Firmware

The bed includes firmware that can be updated only by an authorised service technician.
This firmware is protected against unauthorised access by mechanical housing (tool is needed to access), by seal (components with processor are sealed), by exclusive compatibility with an authorised software tool and by check of compatibility of the new firmware with the bed.

10 Power Supply Cord (Mains Power Cable)

CAUTION!
Disconnecting bed from the mains does not stop motions of the bed!
► Stop the bed before disconnection bed from the mains.

Attachment plug is means of connecting and disconnecting bed from the mains.
Power supply cable (mains power cable) must be attached with a hook at the head end of the bed during transport.

Where the integrity of the external protective conductor in the installation or its arrangement is in doubt
► operate the bed from internal accumulator only.

11 Accumulator

CAUTION!
Risk of reducing accumulator durability due to incorrect use!
► Use bed on accumulator only in crisis situations (e.g.: power blackout, patient complications during transport, etc.).
► After reconnecting bed to the mains charge accumulator to full capacity (see chart Accumulator charge status).

CAUTION!
Risk of damage or destruction of accumulator!
► If the accumulator is faulty, degassing may occur. In rare cases this might cause deformations of the accumulator case, control panel housing or cable.
► If this occurs stop using the bed immediately (see Removing the Bed from Service).
► Inform the manufacturer's service department immediately.

For declared lifetime period of leaded accumulators is recommended during storage:
1. To prevent accumulators from deep discharging and to keep accumulators at least partly charged by regular recharging
2. To store accumulators on the dry places with temperature from 10°C to 40°C
3. To prevent accumulators from being in the sunshine

Accumulator lifetime could be up to 5 years if operated under optimum conditions.
Accumulator capacity can be significantly reduced if:
► too high ambient temperature
► many accumulator charge/discharge cycles
► recurrence of deep discharge
► bed is often powered only by the accumulator

The accumulator supplied with the bed is delivered uncharged. The accumulator serves as a backup during power failures or while transporting the patient.

► Use only accumulators approved by the manufacturer.
► The manufacturer provides a 6-month warranty for the full function of accumulators.
► Check the accumulator functionality at least once a month in accordance with the user and service manuals and have the accumulator changed if necessary.
► The manufacturer will assume no responsibility for any damage to the bed or the accumulator caused by:
  ■ Non-observance of the manufacturer's instructions in the instructions for use.
  ■ Using accumulators not approved by the manufacturer.
  ■ Accumulator replacement non-qualified service organisation.

To charge the accumulator:
► Connect the bed to the mains and check the yellow LED on the Attendant Control Panel according to the following table.

NOTE: Some bed adjustment options are not available without a accumulator, for example, height adjustment under a load of above 200 kg.
► Charging and accumulator capacity is indicated by the yellow LED placed on the ACP control panel.

The LED indicates the accumulator charge status:

Yellow LED	Accumulator charge status
Not lit	Accumulator capacity is sufficient (charging completed)
Short flashing (short, intermittent illumination) (circa 1.8 sec.)	Accumulator is charging - continue charging until the LED is extinguished. In emergency cases, the accumulator can be used as a backup power source for a short period. If LED is still flashing after 12 hours of charging or stops flashing, but you cannot position with bed, accumulator is defective or broken. Contact manufacturer.
Long flashing (long illumination) (circa 0.2 sec.)	Low accumulator voltage - accumulator cannot be used as a backup power supply even for a short period; accumulator is completely discharged or defective (if this type of signalisation persists, it is necessary to replace the accumulator - service action)
Long, intermittent illumination for several hours (circa 10 hours), when bed is connected to the mains.	Accumulator absence or failure condition (accumulator is connected incorrectly, line between the power supply and accumulator is broken or accumulator fuses are faulty); contact service department of the manufacturer in case of such signalisation.

To maintain maximum functionality of the accumulator:
► Unplug the bed from the mains as least as possible.

In case the accumulator cover or control section is deformated by heat
► Unplug the bed from the mains.
► Do not use the bed (see. Removing the Bed from Service).
► Contact service of the manufacturer.

11.1 Status Faulty Accumulator

The accumulator is regarded as faulty if at least one of the following conditions applies:
► Accumulator charging constantly
► Low voltage on accumulator
► Low charging current of accumulator

Status “faulty accumulator” is indicated:
► By the accumulator status indicator being constantly lit.
► A fault accumulator status can be cancelled by pressing the STOP button.
► Accumulator status data is saved to the Linis system and written to the “Blackbox”.

11.2 Status Discharged Accumulator

The accumulator is regarded as discharged if the following condition is met:
► Defined decrease of voltage depending on discharging current

Status “discharged accumulator” is:
► Status is indicated by the accumulator status indicator flashing quickly.
► The electric CPR position is the only possible position.
► This status will be cancelled automatically when the bed switches to sleep mode.

11.3 Removing the Bed from Service

How to remove the bed from service:
► Disconnect the bed from the mains.
► Disconnect the ground wire.
► Deactivate the accumulator (see Deactivating the Accumulator).
► Remove accessories.

To prevent damage during storage:
► Pack or cover the bed and accessories.
► Ensure storage conditions are the same as the operating conditions.

11.4 Deactivating the Accumulator

To avoid damaging the bed and the environment during storage:
► Deactivate the accumulator on the Attendant Control Panel.

To deactivate the accumulator on the Attendant Control Panel:
► Disconnect the bed from the mains.
► Disconnect the ground wire.
► Activate the keypad by pressing the GO button on the Attendant Control Panel.
► Press the Thighrest Up + Thighrest Down + Trendelenburg Position buttons at the same time and hold them for three seconds.
► The accumulator is deactivated.

NOTE: Try some functions to ensure the accumulator is deactivated.

To activate the accumulator again:
► Connect Power Cable to the mains.

12 Manipulation

WARNING!
Risk of injury when adjusting the bed!
► Ensure there are no body parts between the mattress platform elements and the mattress platform frame when adjusting the bed.
► Ensure there are no body parts below the mattress platform frame before adjusting the bed.
► Secure or remove any items on the bed.

The bed is operated by different control elements.

Control elements:
► ACP Attendant Control Panel
► Handset

Disabling individual functions on the Attendant Control Panel affects all of the control elements.

If the bed does not react to individual position settings:
► Check whether the function is disabled on the Attendant Control Panel.

12.1 ACP – Attendant Control Panel (nurse controller)

Attendant Control Panel is main control panel of the bed. Nurse controller can be placed in the shelf. We recommend placing ACP panel on the head board or foot board or hold it in the hands while controlling the bed.

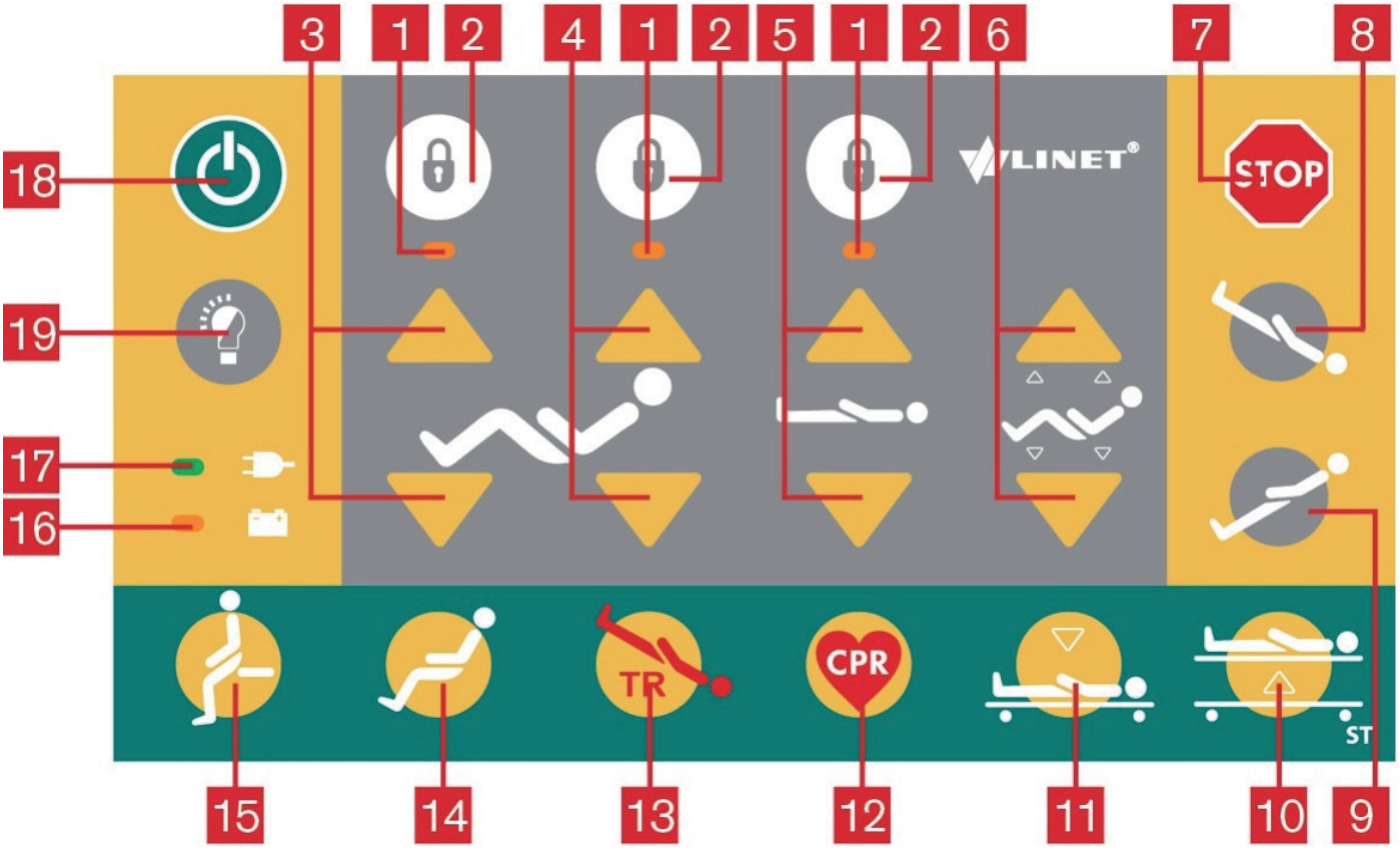


Fig. Attendant Control Panel

1. **Lock indicators**
2. **Lock Buttons for respective functions**
3. **Thighrest Positioning Buttons**
4. **Backrest Positioning Buttons**
5. **Height Adjustment Buttons**
6. **Auto-Contour Buttons (simultaneous setting of backrest and thighrest)**
7. **Central STOP button**
8. **Button Trendelenburg Tilt (mattress support platform tilt only)**
9. **Button Antitrendelenburg Tilt (mattress support platform tilt only)**
10. **Button Examination Position**
11. **Button Extra Low Position**
12. **Button CPR (Resuscitation) Position**
13. **Emergency Trendelenburg Position Button**
14. **Button Cardiac Chair Position**
15. **Button Mobilisation Position**
16. **LED Accumulator charge status (only for beds with backup accumulator)**
17. **LED Mains power**
18. **Activating GO Button**
19. **Bed Lights Control Button (ON/OFF)**

NOTE: In case that the bed is not equipped with bed light control, button 19 is not on the controller.

To set positions:

► Activate the keypad by pressing the GO button.
► Press and hold corresponding button until required position is reached.

12.1.1 Central STOP Button

The central STOP button 7 immediately interrupts all bed movements.
Pressing central STOP button 7 for at least 0.3 seconds immediately stops all electronic bed movements.

12.1.2 Activating GO Button

The GO button 18 activates the keypads on all control elements except the foot control.
A GO button is included on a number of different control elements. The function of the GO button is identical on all control elements. After pressing GO button 18, the keypad will remain active for 3 minutes. It is possible to control every function on the bed except the locked functions. Pressing a function button will keep the keypad active for another 3 minutes.
It is necessary to activate the keypad again if the 3 minute period without pressing any function is passed.

12.1.3 Function Buttons

Function buttons 3, 4, 5 and 6 allow the setting of different positions, for example the height and tilt of the mattress support platform, adjust individual mattress platform elements, etc.

NOTE: The bed can be stopped by pressing two different buttons even on two different controllers. If the press of the buttons is longer than 0,5 second the bed will stop all the movements immediately.

To set a position:
► Activate the keypad by pressing the GO button.
► Press and hold the respective button until required position is reached.

12.1.4 Lock Buttons

Lock button 2 allows disabling individual functions on the Attendant Control Panel.

To disable functions:
► Activate the keypad by pressing the GO button 18.
► Press respective lock button.
The respective LED flashes to indicate the lock.

NOTE: The individual functions are locked in the central control panel, the satellite control and the handset.

To enable disabled functions:
► Activate the keypad by pressing the GO button.
► Press the respective lock button.
The respective LED goes out. The function is enabled.

12.1.5 Position Buttons

WARNING!
Risk of injury due to moving parts!
► Ensure that no body parts are trapped between moving parts of bed and mattress platform.
► Ensure that no persons or body parts are close to bed or accessories (e.g. infusion stand, lifting pole) when mattress platform is moving

CAUTION!
Material damage due to moving parts!
► Ensure that no objects (e.g. cables) are trapped between moving parts of bed and mattress support platform.
► Ensure that no objects are close to bed or accessories (e.g. infusion stand, lifting pole) when mattress support platform is moving.

The therapeutic and safety-related positions are pre-programmed. When a position is set, several parts of the bed and mattress support platform will move simultaneously.

Programmed positions:
► Cardiac chair position
► Trendelenburg position
► CPR (resuscitation) position

To set the programmed positions:
► Activate the keypad by pressing the GO button.
► Press and hold corresponding function button until the desired position is reached.

Trendelenburg Position (13)

The Trendelenburg position serves as an anti-shock position. All parts of the mattress platform are flattened. Mattress platform tilts head down.

Cardiac Chair Position (15)

The cardiac chair position is suitable for patients with cardiac arrhythmia and breathing difficulties.

Settings after pressing and holding the Cardiac chair button (15):
► Calfrest tilts into lowest position, thighrest moves into the upright position (34°).
► 6 second after positioning calfrest and thighrest the backrest will move into an upright position (70°).

CPR (Resuscitation) Position (12)

The CPR position is for resuscitating the patient in an emergency.

Settings after pressing and holding the CPR button (12):
► Mattress platform moves into a horizontal position.

NOTE: For quick mechanical positioning, see CPR Backrest Release.

12.2 Handset

The handset is included as a standard feature. The handset is available with and without button illumination. The button illumination of the illuminated handset is active when the bed is connected to the mains. The functions of both handsets are identical. Where the handset is to be stored on the bed depends on the patient's condition.

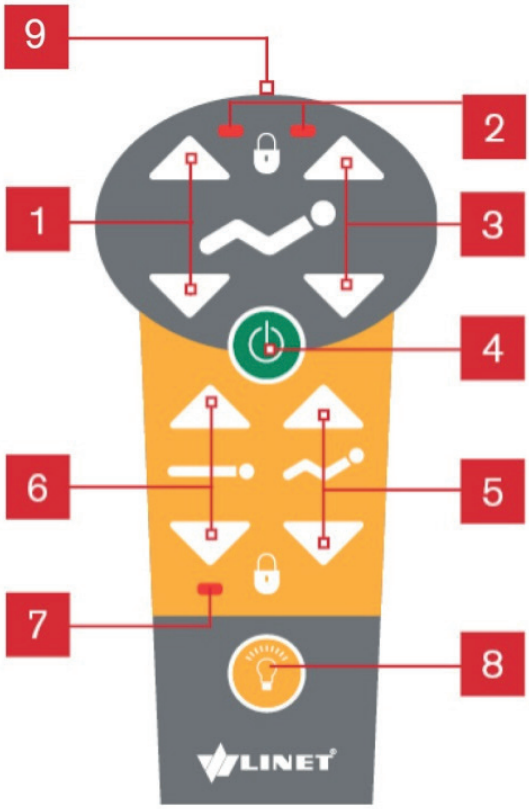


Fig. Handset

1. Thighrest Adjustment Button
2. Thighrest/Backrest Lock LED
3. Backrest Adjustment Button
4. Activating GO Button
5. Auto-Contour Button
6. Height Adjustment Button
7. Height Lock LED
8. Flashlight Button
9. Flashlight

To switch on the flashlight:
► Press and hold flashlight button 8 and flashlight 9 on the top of the handset will light up.

Set the positions as follows:
► Activate the keypad by pressing the GO button.
► Press and hold the function button until the desired position is reached.

NOTE: Depending on the patient's condition, the nursing staff decides whether the patient is allowed to adjust the bed's position.

If required, prevent the patient from adjusting the bed as follows:
► Disable functions.
► Unplug handset (if the bed is equipped with Plug and Play).

NOTE: The handset can be plugged into another LINET® hospital bed with the Plug and Play slot.

12.3 CPR backrest release

WARNING!
Risk of injury due to lowering the backrest too quickly!
► Ensure single collapsible siderails are in their lowest position or ensure split plastic siderails are in their highest position.
► Ensure there are no body parts between siderails and backrest.
► Press the backrest down only by the mattress guard handle or the siderail.

The bed permits quick mechanical lowering of the backrest for emergency resuscitation (CPR) procedures.

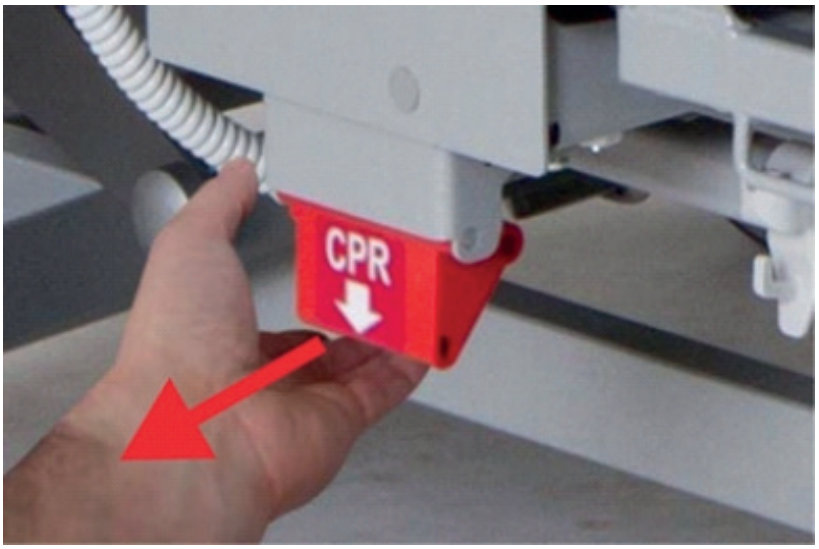


Fig. Backrest release CPR

Set the position as follows:
► Pull and hold CPR backrest release lever and simultaneously press backrest down by the mattress guard handle.

NOTE: In some cases (e.g. with bed in Emergency Trendelenburg Position without power supply) it is possible to use the CPR lever to raise the backrest.

12.4 Siderails

The single collapsible siderails are components of the bed. The siderails cannot be dismounted. Hospital personnel are responsible for locking siderails in the highest position when the patient is on the bed.

To fold the siderail down:

- ► Take hold of the release mechanism and push the siderail towards the head of the bed to unlock the locking system **1**.
- ► Press button **2** to unlock.
- ► Fold down siderail as required **3**.
- ► To raise the siderail push the siderail up. The siderail will click into place and lock automatically.

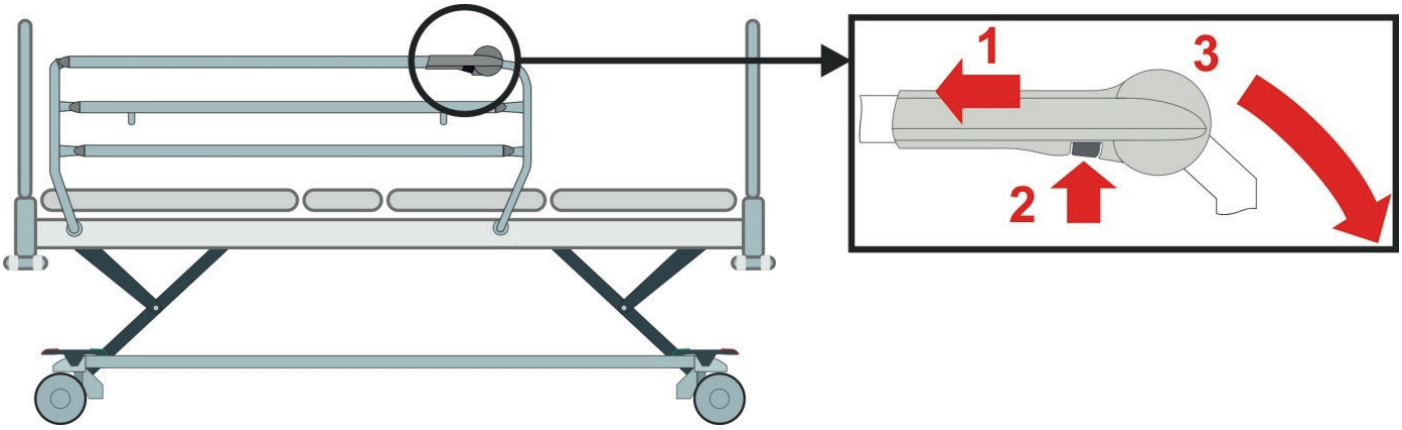


Fig. Siderail release mechanism

12.5 Castor Control and Bed Transport

CAUTION!
Material damage due to incorrect transport or involuntary movement!

- ► Prior to assembly, disassembly and maintenance, ensure the castors are locked.
- ► Ensure the castors are locked while the bed is occupied and/or not being transported.
- ► Prior to transport, ensure that bed is disconnected from mains.
- ► Put mains cable on hook provided for transport.
- ► Have the bed transported only by nursing or trained personnel.

CAUTION!
Damage to the bed due to incorrect use!

- ► Use 125 mm castors exclusively on flat, even surfaces without any gaps.

12.5.1 Bed with Castor Control Levers

The castor control levers are located on both sides of the foot end.
The central braking system facilitates movement of the bed by a single person. The bed has a main lock control lever for the four castors. The brakes are at the foot end of the undercarriage.

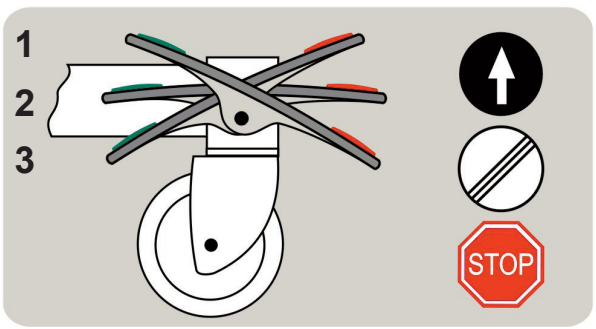


Fig. Central braking system lever

Castor control:

1. Forward Movement: A castor is arrested. The bed moves straight ahead. If the bed is equipped with a fifth castor, this castor determines the direction of movement.
2. Unrestricted Movement: All of the castors are unlocked.
3. Braked: Both castors are locked.

To move the bed:
► Adjust the bed height to at least 20cm below maximum height.
► Push the bed using handles on head board or foot board.

13 Equipment

13.1 Accessory Rails

Fig. Accessory Rail

Load capacity:
► Maximum load of 5 kg without leverage.
► Maximum load of hook pair 10 kg.

Accessories for hanging on the accessory rail:
► Cannula holder
► Urinary bag holder
► Urinary bottle basket
► DIN steel bar

13.2 The Fifth Castor

The bed can be equipped with a 5th castor to make it easier to manoeuvre and control the bed. The standard locking castor will automatically be excluded from the bed specification if the 5th castor is requested as this will replace the need for this function. The control lever for the 5th castor is identical to the control lever for the braking system. To activate the 5th castor, press the foot operated lever shown in Figure 14, position 1.

13.3 Brake Signal – Signalization of Unbraked Bed

It is possible to equip Image 3 B with signalization of unbraked bed. The signalization of unbraked bed signalizes, that bed is connected to the mains but is not braked. This status is signalized by acoustic signal. To shut down acoustic signal brake the bed or unplug bed from the mains.

14 Mattress

The manufacturer recommends the use of the following mattress systems on the Image 3 B bed:
► EFFECTACARE 20+
► PRIMACARE 20 B

15 Accessories

WARNING!
Risk of injury due to incompatible accessories!
► Only the manufacturer's original accessories can be used.

WARNING!
Risk of injury due to damaged accessories!
► Use exclusively accessories in perfect condition.

NOTE: The manufacturer assumes no responsibility for the use of accessories not approved by the manufacturer.

NOTE: All accessories conform to EN 60601-2-52:2010.

The following accessories are suitable for the Image 3 B:

- ■ Lifting pole
  - □ powder-coated
  - □ chrome-plated
- ■ Triangular holder, grey plastic
  - □ for lifting pole
  - □ for lifting pole, adjustable by retractor
- ■ IV holder
  - □ for lifting pole, 3 hooks, powder-coated
  - □ for lifting pole, 3 hooks, stainless steel
  - □ for lifting pole, 4 hooks, chrome-plated
- ■ Telescopic IV pole
  - □ 4 plastic hooks, chrome-plated
  - □ 4 plastic hooks, chrome-plated, S-shaped top part, with lock against unwanted rotation
  - □ 4 metal hooks, chrome-plated, lock against unwanted rotation
  - □ 4 metal hooks, stainless steel, S-shaped top part, lock against unwanted rotation
- ■ Infusion bottle basket
  - □ for IV pole, stainless steel
- ■ IV pump holder
  - □ cross-shaped, chrome-plated
- ■ Pole for devices and accessories
  - □ chrome-plated
- ■ Urinary bag holder
  - □ self-adjusting level, powder-coated
- ■ Writing shelf
  - □ white, for plastic or metal head board and foot board
- ■ Name holder
  - □ plastic, for plastic head board and foot board
- ■ Chart holder
  - □ plastic, for plastic head board and foot board

15.1 Lifting Pole

The lifting pole is an optional accessory. It is necessary to specify this feature in the order.

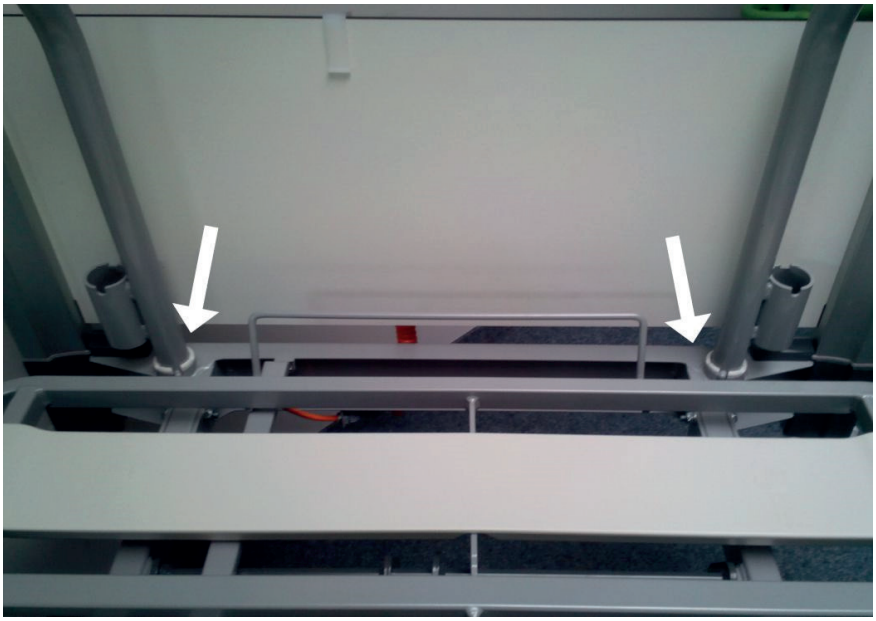


Fig. Placing the lifting pole

Fig. Image 3 B with bariatric lifting pole

Lifting pole variants:
- Bariatric lifting pole

To ensure safe use of the lifting pole:
- ► Never exceed the maximum load of 100 kg of lifting pole.
- ► Never use the lifting pole for rehabilitation exercises.
- ► To prevent the bed from tipping over, ensure the lifting pole does not project out from the bed.
- ► Replace plastic handle every 4 years.

Lifting pole positions:
- Over the backrest (working position).

To install the lifting pole:
- ► Attach plastic grab handle with an adjustable strap to the lifting pole.
- ► Insert the lifting pole into both housings at the corners at the head of the bed with the help of a second person
- ► Ensure that both safety pins are locked into place

NOTE: The date of manufacture is marked on the grab handle. LINET® recommends replacing the plastic grab handle every four years.

15.2 Infusion Stands

WARNING!
Risk of injury due to use of unsuitable accessories!
- ► Use infusion stands exclusively for accessories listed in the instructions for use.
- ► Only mount an infusion pump to the lower (wider) telescopic section of an infusion stand above the head board or foot board.
- ► Never mount an infusion pump to the upper (thiner) telescopic section of an infusion stand.
- ► Ensure the infusion pump will not collide with any movable parts of the bed (especially Backrest part) or with the patient. This must be verified during installation.
- ► Do not use the infusion stand as driving/pushing device during the bed transport.

It is possible to insert infusion stands in the sockets at the head end and foot end of the bed.
- ► Use exclusively infusion stands with 4 hooks for hanging IV bags or baskets for intravenous solutions.
- ► Ensure that the infusion stand's weight-bearing capacity is not exceeded.
- ► Ensure that the weight-bearing capacity of the 4 hooks is not exceeded. Capacity per hook: 2 kg

15.3 Siderails Extension – Extender®

WARNING!
Risk of injury or collision due to incorrect use!
► The Extender® can be used with single collapsible siderails only. The manufacturer will not be held responsible for any consequences if the Extender® is used with other types of siderails.
► Movement of the bed must be considered if the Extender® is installed.
► Use of the Extender® in a manner other then stated in the instructions for use is on the responsibility of personnel. The manufacturer shall not be held liable for incorrect use!

It is recommended the siderail extension – Extender® be used if a mattress higher than the recommended height was placed on the bed. The Extender® is used to raise the height of the siderails and helps to secure patients safety. The Extender® is designed for single collapsible siderails only.

It is recommended that the Extender® be used with the following mattresses:

► Passive mattress: higher than 14 cm
► Active mattress: with maximum height 25 cm
  ■ Virtuoso - bariatric

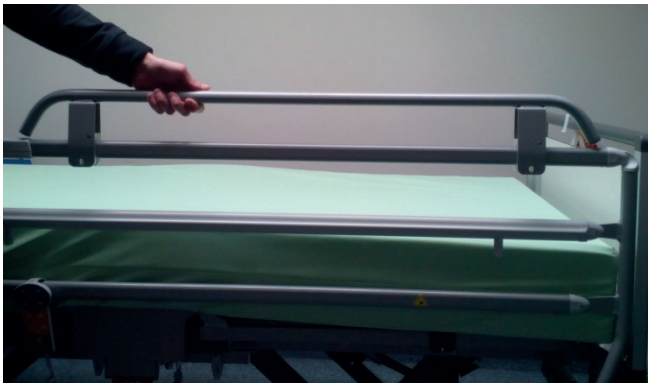


Fig. Installing the Extender® on the siderail

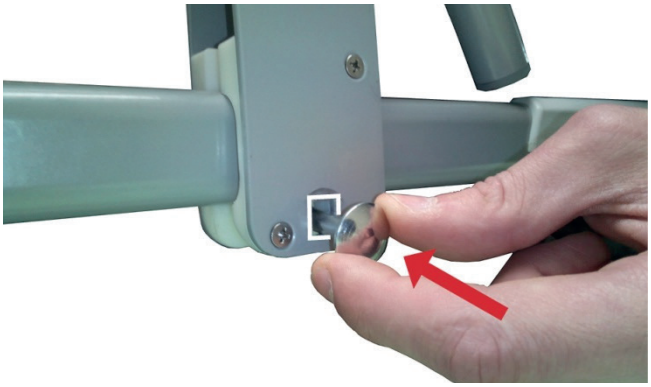


Fig. Inserting the screw

Fig. Securing the Extender®

Fig. Image 3 B with installed Extender®

Install the Extender® as follows:
► Place the Extender® on the upper edge of the siderail. Siderails must be in the upper position.
► Insert the screw from the inside of the bed thru the securing hole in the Extender®. The square hole is pointed into the mattress support platform.
► Secure the screw with the plastic rosette nut and tighten. The rosette nut is pointed out from the bed.
► Check that the Extender® is secured correctly.

15.4 Image 3 B Protector®

WARNING!
Risk of injury due to patient falling out of bed!
- ► Ensure the Protector® is securely anchored to the housing.
- ► To check stability, push the Protector up without touching the release button.
- ► Always check that the siderail is properly locked.

WARNING!
Risk of damage to the bed or patient injury!
- ► Do not attach the head board or foot board to accessory housing (**3**).
- ► Do not use the Protector with bed extension.
- ► The Protector® can be used with powder coated head/foot board only.

The Protector® is not a component of the bed. The Protector® is an optional accessory.

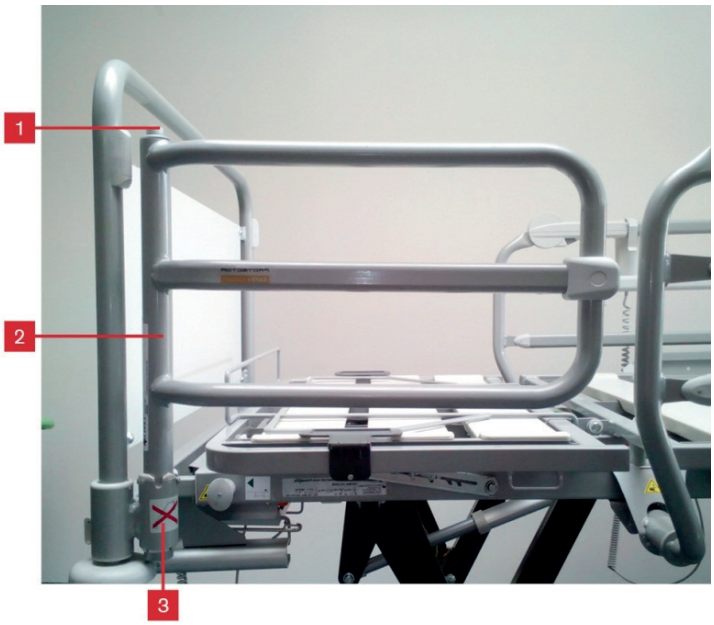


Fig. Closed Protector

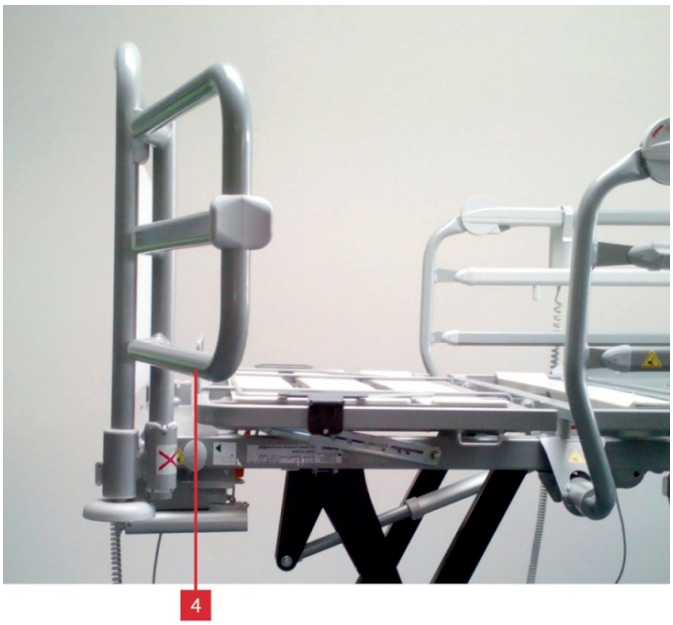


Fig. Open Protector

Mount the Protector in the closed position as follows:
- ► Put the tube of the Protector (**2**) into the housing near the foot of the bed (**3**), so that the Protector is facing the siderail.
- ► The safety pin must be locked in place.

Mount the Protector in the open position as follows:
- ► Put the tube of the Protector (**2**) into the housing near the foot of the bed (**3**), so that the Protector is facing out from bed.
- ► The safety pin must be locked in place.

Dismount the Protector as follows:
- ► Press and hold the release button (**1**).
- ► Push the Protector up.

16 Cleaning/Disinfection

WARNING!
Risk of injury when working on the bed!
► Prior to assembly, disassembly, cleaning and maintenance, ensure that all adjustment functions are locked.
► Ensure the bed is disconnected from the mains during cleaning process.
► Pay extra attention when cleaning any movable or controlling mechanisms of the bed to prevent involuntary activation, entrapping or crushing.
► Cleaning should be entrusted to the person who has been trained to control the bed.

WARNING!
Risk of damaging the bed due to use of incorrect cleaning detergents or cleaning processes!
► The bed is not designed for machine washing.
► The bed is not designed for cleaning by spraying, showering nor for pressure or steam cleaners.
► The selection of cleaning detergents/disinfections and their correct concentration is responsibility of responsible person in charge of cleaning/disinfection in accordance with the informations provided in this manual.
► Never use germicidal or other radiants for disinfection of the bed, if those radiants act directly on the bed.
► Follow these instructions and follow the prescribed dosage by the manufacturer of cleaning detergents.
► Not following recommended processes may result in damaging or deterioration of the bed condition.
► **Check if used cleaning agents and disinfectants are compatible with materials that the product consists of! For information see the following table.**

BED COMPONENTS THAT ARE INTENDED TO BE CLEANED **Do not clean what is not mentioned in this column!**	**MATERIALS (SURFACES OF THE MENTIONED BED COMPONENTS)** **Competent user is responsible for check if used cleaning agents and disinfectants are compatible with mentioned materials!**	
Head board and foot board	powder coated steel version: Lacquered steel + High Pressure Laminate (HPL)	aluminium version with HPL board: Oxidized aluminium alloy + Lacquered steel + Stainless steel + High Pressure Laminate (HPL) + Polyamide (PA)
Head siderails and foot siderails	single collapsible siderails (3/4 siderails): Lacquered steel + Polyamide (PA) + Polyoxymethylene (POM) + Acrylonitrile butadiene styrene (ABS) + Polyvinyl chloride (PVC)	
Mattress support platform covers (Backrest)	Polypropylene (PP)	
Seat section	Lacquered steel	
Castors	Polyurethane (PUR) + Polyamide (PA) + Polypropylene (PP)	
Castor control levers	Polyamide (PA6) + Lacquered steel	
Frame of the mattress support platform	Polyamide (PA) + Lacquered steel + Stainless steel	
Undercarriage	Acrylonitrile butadiene styrene (ABS) + + Lacquered steel	
Corner covers	Acrylonitrile butadiene styrene (ABS)	
Corner bumpers	Polypropylene (PP) + Polyamide (PA)	
Keyboards (Attendant Control Panel, Handset, control elements integrated in the siderails)	Acrylonitrile butadiene styrene (ABS) + Polyoxymethylene (POM) + Polyethylene terephthalate (PET)	
CPR levers	Polyamide (PA6)	
Labels	Polyethylene terephthalate (PET)	
Accessory rail	Polyoxymethylene (POM) + Lacquered steel	
Actuators	Polyamide (PA6) + Aluminium (Al)	
Linen Shelf	aluminium Linen Shelf: Oxidized aluminium alloy + Zinc-coated steel + Stainless steel + Acrylonitrile butadiene styrene (ABS) Polyamide (PA) + Polyoxymethylene (POM)	iron Linen Shelf: Lacquered steel + Zinc-coated steel + Polyamide (PA)

16.1 Safety Instructions for Cleaning and Disinfection of the Bed

Preparation for cleaning:

► Drive the bed on a place where the cleaning process will be performed and then brake the bed.
► Position the mattress platform to its highest positions and also position the backrest and thighrest parts so the back side of those parts are accessible for cleaning.
► Lock all adjustment functions of the bed to prevent involuntary adjustment of the bed or injuries during cleaning.
► Disconnect the bed from the mains.
► Check if all connectors are properly fixed (controllers, actuators and control unit).

Recommendations for cleaning:

► Only use detergents designed for cleaning the medical technologies.
► Dilute the detergents in accordance with instructions from manufacturer of detergents.
► Never use any strong acids or bases. Optimal pH range is 6-8.
► Never use abrasive powders, steel wool or other materials and detergents that may damage the surface of the bed.
► Never use detergents with solvents that may affect the structure and consistency of the plastic parts (benzene, toluene, acetone etc.).

Cleaning process:

► Clean by wiping the bed with damp, well-wrung textile material.
► The detergent can be applied by spraying on bed or on the textile material.
► Perform cleaning and disinfection of the bed in the appropriate range. The range of cleaning and disinfection should be distinguished according to the degree of contamination of the bed and the cleaning mode (daily, before changing patient or complete).
► Electronic parts that may be contaminated clean carefully and only their outer side. Never open those connectors due to cleaning or disinfection. Those components should not be exposed to prolonged or continuous exposure to moisture.
► Let the bed dry completely after cleaning or disinfection process.
► After drying the bed place the mattress back on the mattress support platform.
► After drying the bed check functions of the bed.

16.2 General Instructions for Cleaning and Disinfection

16.2.1 Daily Cleaning

It is recommended to clean all parts of the bed which are touched by patient or personnel (e.g. siderails, head board and foot board, handset, lifting pole etc.) and all handles, all control elements and accessory rails.

16.2.2 Cleaning before Changing Patients

It is recommended to completely clean and disinfects all parts of the bed which are touched by patient or personnel (see Daily Cleaning), mattress platform, columns, undercarriage covers and mattress.

16.2.3 Complete Cleaning / Cleaning before First Use

It is recommended to clean the bed completely before the first use and then at least once in 4-8 weeks.

16.2.4 Cleaning of Spilled Fluids

Spilled fluids should be cleaned as soon as possible. Always disconnect the bed from mains before cleaning the spilled fluids. Some fluids used in health care may cause permanent stains.

16.2.5 Damaged Foam Mattress

Mattress should be periodically checked for cracks, holes or cracks that may affect the integrity, water resistance or resistance to infections of the cover. Contact the service department of the manufacturer according to scope of damage to cover.

16.3 Modes of Cleaning and Disinfection

Part of bed – Image 3 B	Daily C&D	Changing patient C&D	Complete C&D
Single collapsible siderails (stickers)	☑	☑	☑
Head board and Foot board (stickers)	☑	☑	☑
Controllers (cables)	☑	☑	☑
Mattress support platform covers	☑	☑	☑
Undercarriage cover	☒	☑	☑
Corner bumpers	☒	☑	☑
Mains cable	☒	☒	☑
Undercarriage frame	☒	☒	☑
Castors	☒	☒	☑
Actuators	☒	☒	☑

17 Troubleshooting

DANGER!
Danger to life due to electric shock!
► If a fault occurs ensure the electric motor, power box and other electrical parts checked by qualified personnel only.
► Do not open protective covers of the electric motor or power box.

Error/Fault	Cause	Solution
Adjusting with position buttons not possible	GO button was not pressed	Press the GO button.
	Function disabled on Attendant Control Panel	Enable disabled function.
	Actuators have no power Defective actuators Defective accumulator	Check the mains connection. Notify the service department of the manufacturer.
	Plug inserted incorrectly	Insert the mains plug correctly.
	Faulty power box	Notify the service department of the manufacturer.
	Faulty control element	Notify the service department of the manufacturer.
Faulty mattress support platform height/tilt adjustment	There is an object on the undercarriage cover	Remove the object.
	Function disabled on Attendant Control Panel	Enable disabled function.
	Actuators have no power Defective actuators Defective accumulator	Check the mains connection. Notify the service department of the manufacturer.
	Plug inserted incorrectly	Insert the mains plug correctly.
	Faulty power box	Notify the service department of the manufacturer.
	Faulty control element	Notify the service department of the manufacturer.
Lowering backrest from the upright position not possible	Object under the backrest or in the drive mechanism	Remove the obstacle
	Locking handle is defective	Notify the service department of the manufacturer.
Adjusting siderails not possible	The siderail lock is dirty	Clean the locking mechanism.
	Locking handle is defective	Notify the service department of the manufacturer.
Faulty brakes	The brakes are blocked by dirt	Clean the brake system.
	The brake mechanism is defective	Notify the service department of the manufacturer.
Inserting head board and foot board not possible	The head board or foot board is in the wrong position	Check the locking mechanism. Position the head or foot board correctly.
	Defective mechanism	Notify the service department of the manufacturer.

18 Maintenance

WARNING!
Risk of injury when working on the bed!
► Ensure that the bed is disconnected from the mains power prior to installation, putting into service, maintenance and deinstallation.
► Ensure that the castors are locked prior to installation, putting into service, maintenance and deinstallation.

WARNING!
Risk of injury due to defective bed!
► Have a defective bed repaired immediately.
► If the defect cannot be repaired, do not use the bed.

CAUTION!
Material damage due to incorrect maintenance!
► Ensure that maintenance is performed exclusively by manufacturer´s customer service or by authorised service personnel certified by the manufacturer.
► If the defect cannot be repaired, do not use the bed.

LINET ® recommends attaching the maintenance plaque to the bed.

18.1 Regular maintenance

► Check regularly movable parts for wear.
► Perform regularly visual check of the product (with delivery note if necessary).
► Ask service department of the manufacturer for addition of the original spare parts if some product parts are missing.
► Ask service department of the manufacturer for replacement of any damaged product parts by the original spare parts.
► Check that the accumulator is working properly. Disconnect the bed from the mains power to check signalisation of accumulator indicator according to the instructions for use.
► Have the accumulator replaced if it is not working properly.
► Check regularly that all accessories are working properly.
► Replace damaged accessories immediately.

18.2 Spare Parts

The serial label is located on the frame of the mattress support platform. The serial label contains information for claims and ordering replacement parts.

Information about spare parts is available from:
■ Manufacturer´s customer service
■ Sales department

18.3 Safety Technical Checks

WARNING!
Risk of injury due to incorrect safety technical checks!
► Ensure that safety technical checks are performed exclusively by manufacturer´s customer service or by authorised service personnel certified by the manufacturer.
► Ensure that the safety technical checks are recorded in the service and maintenance log.

Safety technical check of the medical bed must be performed at least once every 12 months.

The procedure for performing the safety technical check is stipulated in EN 62353:2014.

NOTE On request, the manufacturer will provide service documentation (e.g. circuit diagrams, component part lists, descriptions, calibration instructions etc.) for service personnel for the repair of ME equipment designated by the manufacturer as repairable by service personnel.

19 Disposal

19.1 Environment Protection

The company LINET® is aware of the importance of environmental protection for future generations. Within this company the environmental management system is applied in accordance with the internationally agreed standard ISO 14001. The compliance with this standard is annually tested by the external audit executed by an authorised company. Based on the Directive No. 2002/96/EC (Directive **WEEE** - Waste, Electric and Electronic Equipments) the company LINET, s. r. o. is registered in the List of Electric and Electronic Equipment Producers (**Seznam výrobců elektrozařízení**) on the Ministry of the Environment of the Czech Republic (Ministerstvo životního prostředí).

Materials used in this product are not environmentally hazardous. LINET® products meet valid requirements of national and European legislation in the areas of **RoHS** and **REACH**, so they do not contain any prohibited substances in excess quantities. None of the wooden parts is made of tropical wood (such as mahogany, rosewood, ebony, teak etc.) or made of timber from the Amazon region or from similar rainforests. Product noise (sound pressure level) meets requirements of the regulations for the protection of public health against undesirable effects of noise and vibration in protected interior spaces of buildings (according to standard IEC 60601-2-52). Used packaging materials are in accordance with requirements of the Packaging Act (**Zákon o obalech**). For disposal of packaging materials after installation of products contact your sales representative or manufacturer´s customer service about the possibility of a free take-back of packaging through an authorized company (more details on **www.linet.cz**).

19.2 Disposal

The main objective of the obligations arising from the European Directive No. 2012/19/EU on Waste, Electric and Electronic Equipments (nationally regulated in Act No. 185/2001 Coll. as amended. On Waste and in Decree of the Ministry of the Environment No. 352/2005 Coll. as amended), is to increase the re-use, material recovery and recovery of electric and electronic equipment at the required level, thereby avoiding the production of waste and thereby avoiding the possible harmful effects of hazardous substances contained in electric and electronic equipment on human health and the environment. LINET® electric and electronic equipments that have a built-in battery or accumulator are designed so that the used batteries or accumulators can be safely removed by LINET® qualified service technicians. There is an information about its type on the built-in battery or accumulator.

19.2.1 Within Europe

To dispose of the electric and electronic equipment:

- ► The electric and electronic equipment must not be disposed of as household waste.
- ► Dispose of this equipment at designated collection points or take-back points.

To dispose of the other equipment:

- ► The equipment must not be disposed of as household waste.
- ► Dispose of this equipment at designated collection points or take-back points.

LINET® participates in a collective system with take-back company REMA System (see **www.remasystem.cz/sberna-mista/**). By bringing electric and electronic equipment to a take-back point, you participate in recycling and you save primary raw material resources while protecting your environment from effects of unprofessional disposal.

19.2.2 Outside Europe

- ► Dispose of the product or its components in accordance with local laws and regulations!
- ► Hire an approved waste disposal company for disposal!

20 Warranty

LINET® will only be held responsible for the safety and reliability of products that are regularly serviced and used in accordance with the safety guidelines.

Should a serious defect arise that cannot be repaired during maintenance:

► Do not continue to use the bed.

This product is covered by a 24-month warranty from the date of purchase. The warranty covers all material and manufacturing-related failures and errors. Failures and errors caused by incorrect use and external effects are not covered. Justified complaints will be fixed free of charge during the warranty period. Proof of purchase, with the date of purchase, is required for all warranty service. Our standard terms and conditions apply.

21 Standards and Regulations

Apllied norms are stated on Declaration of Conformity.

The manufacturer adheres to a certified quality management system in compliance with the following standards:

- **ISO 9001**
- **ISO 14001**
- **ISO 13485**
- **MDSAP (Medical Device Single Audit Program)**