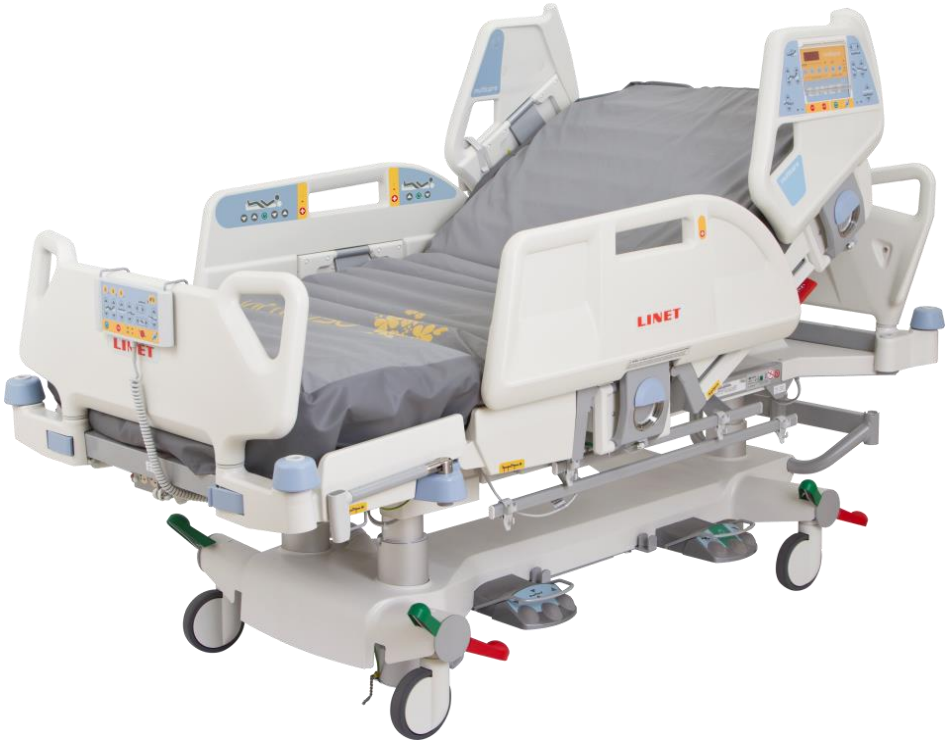
User manual and technical description



Multicare LE

Positionable bed for intensive care with scales

E212434

D9U001MC5-0110
Version: 09
Publication Date: 2019-11

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Multicare LE
Positionable bed for intensive care

Author: LINET, s.r.o.
Related links: www.linet.com

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Table of contents

1 Symbols

1.1 Warning Notices

1.1.1 Types of Warning Notices

Warning notices are differentiated by the type of danger using the following key 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 Other Symbols

1.2.1 Instructions

Structure of instructions:

- Perform this step.

Results, if necessary.

1.2.2 Lists

Structure of bulleted lists:

- List level 1
  - List level 2

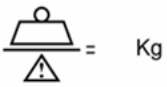
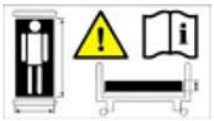
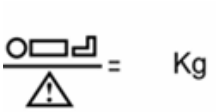
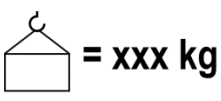
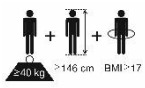
Structure of numbered lists:

a. List level 1

b. List level 1

1. List level 2
2. List level 2

1.3 Symbols and Labels on the Product (Multicare LE)

	Thermal protection for transformer
	Possible risk
	Only suitable for indoor use
	Applied parts type B
	Safety isolating transformer, general
	MET mark
	CE mark (Multicare with scales)
	Jack for attachment of conductor for potential equalisation
	Safe working load
	Warning against crushing or trapping
	Read instructions for use.
	Use mattress recommended by manufacturer.
	Maximum weight of patient
	Weight of bed
	Designation of hospital bed for adults

	Antibacterial surface finish
	WEEE symbol (recycle as electronic waste, do not put into the household waste)

1.4 Serial Label with UDI

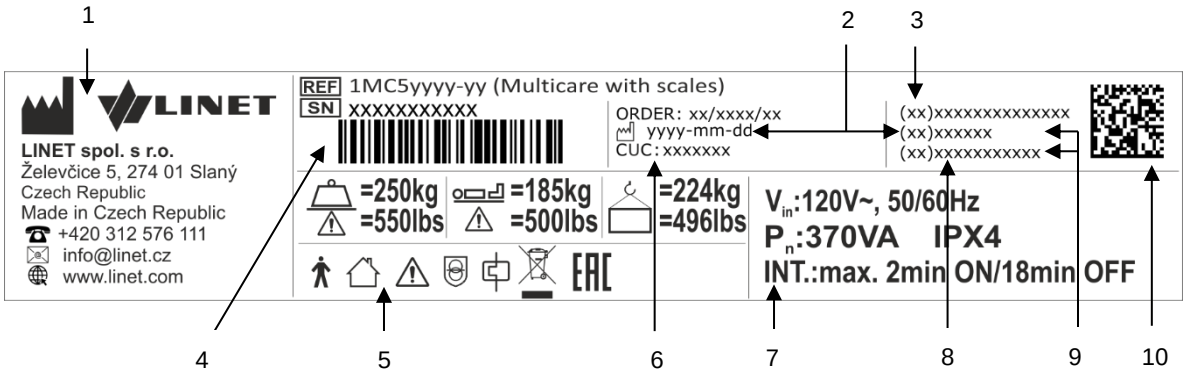


Fig. *Serial Label with UDI (Multicare LE with scales)*

1	Address of Manufacturer
2	Manufacturing Date (Year-Month-Day)
3	DI (Device Identifier) / GTIN (Global Trade Item Number)
4	1D Bar code GS1-128 (Serial Number)
5	Symbols
6	Configuration number
7	Electrical Specification
8	Serial Number
9	PI (Product Identifier)
10	2D Bar Code (GS1 DataMatrix) **DI+PI=UDI**

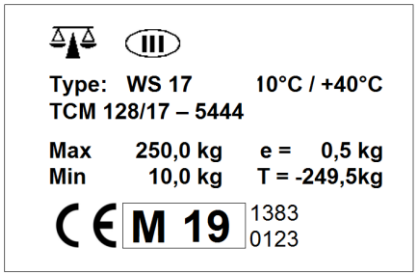


Fig. *Serial Label (WS17)*

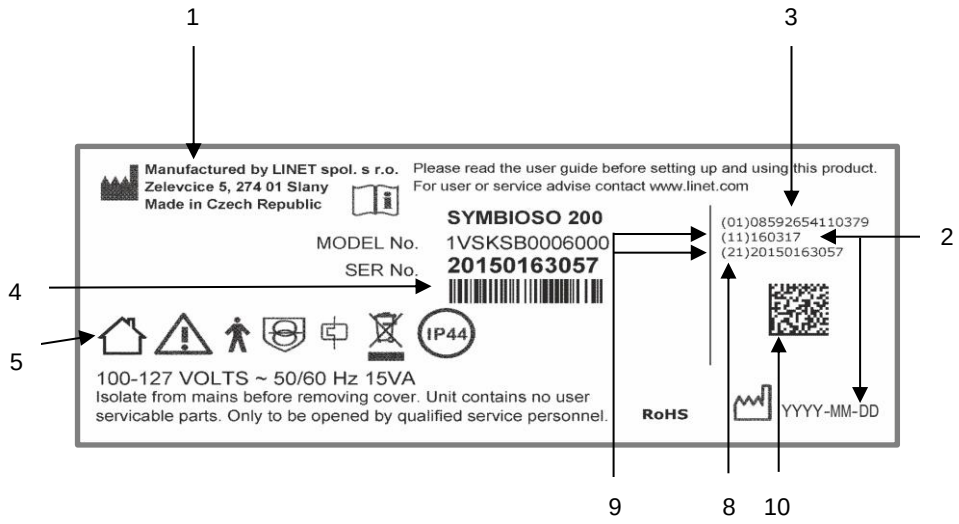


Fig. *Serial label with UDI (Symbioso - SCU)*

1	Address of Manufacturer
2	Manufacturing Date (Year-Month-Day)
3	DI (Device Identifier) / GTIN (Global Trade Item Number)
4	1D Bar code GS1-128 (Serial Number)
5	Symbols
8	Serial Number
9	PI (Product Identifier)
10	2D Bar Code (GS1 DataMatrix) **DI+PI=UDI**

1.5 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 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 and 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.

1.6 Abbreviations

AC	Alternating Current
CE	European Conformity
CPR	Cardiopulmonary Resuscitation
dB	Sound Intensity Unit
DC	Direct Current
EMC	Electromagnetic Compatibility
FET	Field-effect transistor
HF	High Frequency
ICU	Intensive Care Unit
IV	Intravenous
LED	Light Emitting Diodes
ME	Medical Electrical (Equipment)
OFF	Deactivated
ON	Activated
SCU	System Control Unit
SWL	Safe Working Load
UDI	Unique Device Identification (for medical devices)
USB	Universal Serial Bus

2 Safety and Dangers

WARNING!

Multicare LE 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 Multicare LE 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 Multicare LE bed avoid squeezing those between parts of the Multicare LE bed!

WARNING!

Multicare LE 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.

2.1 Safety Instructions

- Follow the instructions carefully.
- Only use the bed if it is in perfect working order.
- If necessary, check the bed functions daily or at each shift change.
- Ensure any user has read and understood this manual completely before operating the product.
- Use the bed only with the correct mains supply.
- Ensure that the bed is only operated by qualified personnel.
- Ensure that the patient (health permitting) has been informed about the operation of the bed and all applicable safety instructions.
- Move the bed only on even, hard-surfaced floors.
- Replace any damaged parts immediately with original spare parts.
- Ensure that maintenance and installation are performed only by qualified personnel 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 the castors are locked when the bed is occupied.
- 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 only by healthcare personnel.
- Never use the bed in areas where there is a hazard of explosion.
- Enable or disable functions on patient controls using the supervisor 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 only 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 mattress replacement system.
- Improper handling of mains cable can cause an electric shock hazard, other serious injuries or damage the bed.
- Ensure that the stipulated duty cycle (on-time) is not exceeded.
- Ensure that the moving parts of the bed are not blocked.
- To prevent failures, use the manufacturer's original accessories and mattresses only.
- 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 80 kg for mattress platform extension.
- Ensure that the bed and its components are only modified with the manufacturer´s approval.
- Use the mattress system only as specified in this manual and in perfect working order.
- Use the mattress system only with the correct mains supply (see Electrical Specifications (Symbioso)).
- Use the mattress system only in its original state and do not modify it in any way.
- Have the mattress system used only by or under supervision of trained and qualified nursing per- sonnel.

- Have the mattress system serviced and installed only by qualified personnel trained and authorised by the manufacturer.
- Do not exceed the maximum patient weight limit (see Mechanical Specifications (Symbioso)).
- Do not use the SCU near flammable gases. This does not apply to oxygen cylinders.
- Never use the mattress replacement system near radiators or other heat sources.
- Never cover the SCU while in use.
- Select a suitable location for the placement of bed accessories and other objects to prevent involuntary activation of buttons or controls which may result in the adjustment of bed positioning.
- Do not use the bed in the event parts have been removed (e.g. parts of mattress platform) unless these parts are designed to be removed (e.g. head and/ or foot end of the bed).
- Never place any accessories or handset on the side rails in the area where the integrated side rail controller is located.
- After each emergency situation always check if any of the controllers (in side rails, hand set or ACP) is not involuntarily pressed by the bed accessories or by the mattress.
- The weighing system must be tested at regular intervals and in accordance with the metrological regulations of the relevant country. All testing and certification must be carried out by qualified personnel. The healthcare provider is responsible for ensuring the required testing frequency and testing procedure of the weighing system is carried out.
- To avoid injury or crushing, take extra caution when operating any moving parts of the bed.
- To avoid unintended activation of moving parts during any use of the bed always check that none of the control elements of the bed is not involuntary pressed by persons, mattress or other objects.

2.2 Use and Storage Conditions

DANGER!

Danger to life due to electric shock!

To ensure the bed's class I protection against electric shocks:

➲ Ground the mains.

➲ Use exclusively Hospital Grade or Hospital Only receptacles for grounding.

Multicare LE and Symbioso are designed for use in rooms for medical purposes. Electrical installations must therefore meet local norms laying down the necessary conditions for electrical installations.

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

Multicare LE and Symbioso are not suitable for indoor environments:

- containing flammable gases (except oxygen cylinders).

NOTE *All references to the position of parts are as viewed from a patient's perspective i.e. as the patient is laying on the bed.*

3 Standards and Regulations

3.1 Multicare LE

The bed complies with the following standards and directives:

- IEC 60601-1
- ANSI/AAMI ES60601-1
- IEC 60601-1-2
- IEC 60601-1-6
- IEC 60601-2-52
- ISO 14971

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)

4 Functioning

4.1 Specifications of Use

Multicare LE are suitable for:

- Patients
  - Standard bed:
    - With weight ≥ 40 kg
    - With height ≥ 146 cm
    - With BMI ≥ 17
  - Bed equipped with Junior Kit:
    - Older than 4 years with minimal height of 90 cm
  - Whose weight (including mattress and accessories) does not exceed the SWL
  - in long-term treatment (depending on bed type)
- Personnel
  - qualified medical staff
  - any person familiar with the manual
  - patient (condition permitting)
- Use
  - intensive/critical care units
  - hospital rooms
  - patient transport
- Transport
  - in original bag
- Medical purpose
  - active air mattress system (constant low pressure)
  - support for patients in Multicare beds
  - pressure ulcer prevention
  - for patients requiring skin micro-climate management

5 Scope of Delivery and Bed Variants

5.1 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.

- Multicare hospital bed
- User Manual

5.2 Bed Variants

s = standart
o = optional

Optional bed features:

- Undercarriage
  - Standard undercarriage – under bed clearance under foot columns 44mm
  - Higher undercarriage – under bed clearance under foot columns 69mm
- Scales
  - with scales (with bed exit alarm)
- Castors
  - Tente Integral 5.9 in. double castors (s)
  - Tente Integral 5.9 in. single castors (o)
  - retractable fifth castor (o)
- Control Elements
  - Multiboard in both head sections of the siderails (s)
  - additional supervisor panel (o)
  - handset with adapter for easy connection (Plug and Play) (o)
  - handset with illuminated buttons and adapter for easy connection Plug and Play) (o)
  - foot control for lateral tilt (o)
  - foot control for height adjustment (o)
  - patient control elements integrated in both middle sections of the siderails (s)
  - variant with no patient controls in siderails (o)
  - illuminated patient keyboards (o)
- 1 pair of Mobi-Lift® handles (o)
- i-Brake® (o)
- x-ray cassette holder (o)
- Additional adapter for lifting pole (o)
- Wi-fi/LAN module (o)
- i-Drive Power® (o)
- EMR ready bed (o)
- Nurse Call
- LINIS SafetyPort
  - without LINIS SafetyPort (s)
  - preparation for LINIS SafetyPort (CE06: Sensor Preparation for LINIS products) (o)
  - with LINIS SafetyPort (CE32: Complete hardware for LINIS SafetyPort (Sensor & Hardware)) (o)

6 Setup

6.1 Transport

For a safe transport, observe the following:

- Ensure that no cables are run over when moving a bed.
- Ensure that the mains cable is attached with a hook (at the head end of the bed).
- Ensure that the castors are unlocked before moving the bed during the loading/unloading process (see Castor Control and Bed Transport).
- Move the bed only on suitable floor surfaces.

Suitable surfaces:

- Tile
- Hard linoleum
- Poured flooring

Unsuitable surfaces:

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

6.2 Setup

Set up the bed as follows:

- Unpack the bed.
- Check the delivery (see Scope of Delivery and Bed Variants).
- Remove isolating foil from the mains control box (see Battery Activation).
- Install equipment and accessories (see Assembly).
- In case of delivery with dismantled bed ends, mount the head and foot ends (see Bed Ends).
- Set up the bed only on a suitable floor surface (see Transport).
- Ensure that the mains cable does not collide or get stretched when adjusting the bed.
  Check that the plug is inserted correctly.
- Do not leave any extension cords or power strips loose on the floor.
- Ensure that all of 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 that the mains cable is always accessible.
- Have the separable plug of the mains cable changed and maintained only by qualified and trained service technicians authorised by the manufacturer.

7 Battery Activation

7.1 Control Section Placement

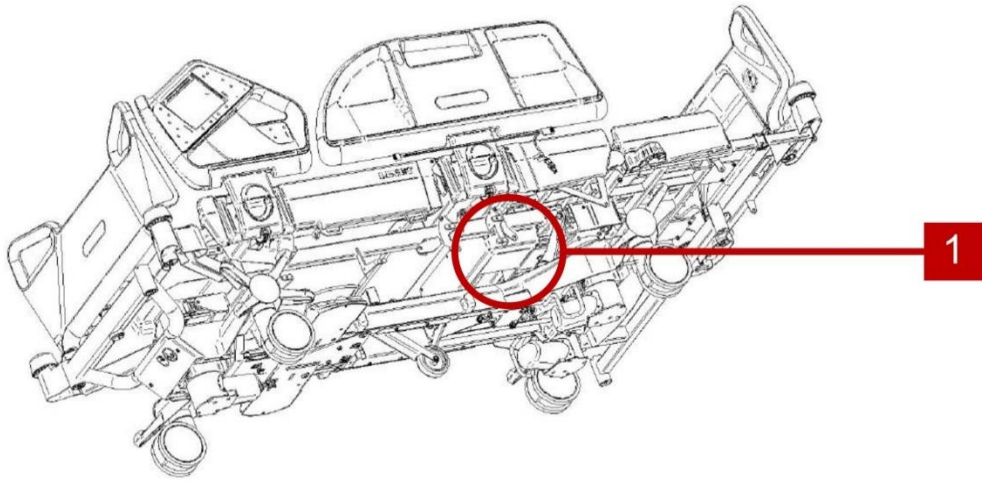


Fig. 2 Control section placement

7.2 Removing the Isolating Foil

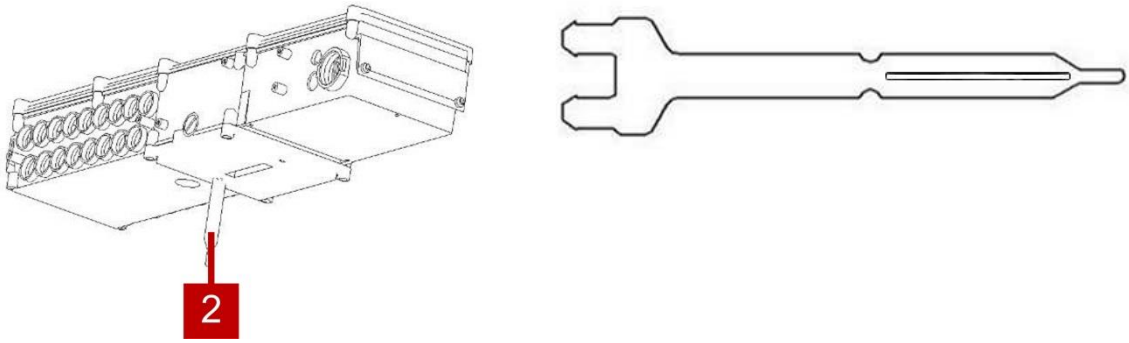


Fig. 3 Isolating foil

To remove isolating foil:

- Remove isolating foil from mains control box **1** by pulling strap **2**.
- Check if isolating foil is complete and undamaged as shown in Fig. 3.
- If isolating foil is damaged, contact the manufacturer's service department immediately.

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

8 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 seller´s customer service or trained hospital personnel.

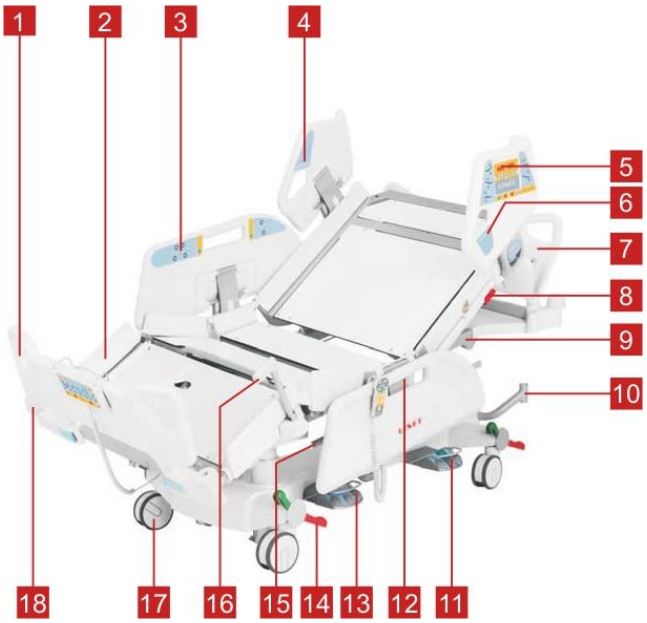


Fig. 4 Overview of Multicare

1. Removable Foot Board with Safety Lock
2. Four-part Mattress Platform with Ergoframe® System
3. Split Siderail – Middle Section with Integrated Control Panels for Patient
4. Split Siderail – Head Section
5. Multiboard
6. Nurse call
7. Removable Head Board
8. CPR Control Lever – Backrest Release
9. X-Ray Cassette Holder
10. Accessory Holder
11. Foot controls – height adjustment
12. Siderail Release Lever
13. Foot controls – lateral tilt
14. Castor Control Lever
15. Bi-lateral Accessory Rail
16. Mobilift® Handles
17. Castor Diameter 150 mm (5.9 in.) with Main Control Lever
18. Bumpers

NOTE *For safe, easy handling, Linet ® recommends having two technicians assemble the bed.*

8.1 Bed Ends

Dismount the bed ends as follows:

- Unlock sleeve fittings.
- Pull bed ends from sleeve fittings.
- Lock sleeve fittings.

Install the bed ends as follows:

- Unlock sleeve fittings.
- Slide bed ends into sleeve fittings.
- Lock sleeve fittings.

Fig. 5 Locking the Bed Ends

8.2 Potential Equalisation

The bed is equipped with a standard protective connector. This connector shall be 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. 6 Potential Equalisation

1. Potential equalisation connector – female
2. Potential equalisation connector – male

Use equalisation connector if:

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

Before connecting the patient to an intravascular/intracardiac device:

- Connect the ground wire of the device to the potential equalisation connector **2** on the bed on which the patient in question is lying.
- Use a standard hospital connector **1**.
- Make sure that the connectors match.
- Make sure that there is no possibility for inadvertent disconnection.

Before moving the bed:

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

9 Installation Symbioso

CAUTION!

Risk of pressure sores creation due to insufficient air in mattress!

➲ Symbioso must be inflated before patient is placed on mattress

The Symbioso mattress replacement system replaces any mattress on the Multicare bed frame.

9.1 Installation of Mattress

Fig. 7 Colour-coded Air Pipes (Symbioso 100)

Fig. 8 Colour-coded Air Pipes (Symbioso 250)

Fig. 9 CPR Strip

- ❖ Remove any existing mattress.
- ❖ Put mattress on bed frame with air pipes at foot end of bed.
- ❖ Disconnect the four sealing plugs.
- ❖ Connect air pipes to SCU observing colour code.

Fig. 10 Power Switch

❖ Make sure that the red CPR strips on both sides of the head end of the mattress are not left open but con- nected, and showing correctly through the slots in the cover.

NOTE *Check that the CPR valve sealing caps, mounted internally on both sides of the mattress at the head end, are closed, (open the cover to check). Close the cover and ensure that the red CPR pull tags are hanging outside the cover through the slots in the cover.*

❖ Switch on SCU using illuminated power switch 1 at back of SCU box.

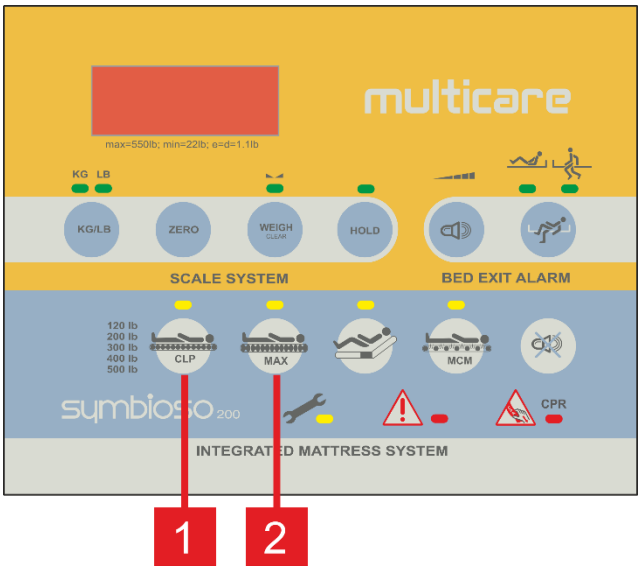


Fig. 11 Selection Button

❖ Press CLP button **1** or Max inflate button **2** to start the mattress inflating.
❖ Mattress starts to inflate in selected mode.

NOTE *When switched on, the SCU will return to the last mode (MAX or CLP) and pressure setting. The mode and pressure settings are only valid when the SCU has been running with these settings for more than 5 minutes.*

During the inflation process:
▪ Indicator **1 or 2** flashes yellow, depending on the last mode setting.
▪ When the set pressure level is reached, indicator **1 or 2** will remain solid on.

The inflation process can take up to 15 minutes with a fully deflated mattress.

9.1.1 Safety Strap

The sides of the foam base fit the sides of the Multicare mattress platform to prevent the mattress from shifting when the patient is getting into or out of bed.

Furthermore, the mattress is equipped with an additional quick-release strap to prevent the mattress from shifting if the head or foot board is removed. This strap is located next to the air pipe outlet on the mattress cover base.

To fix the strap:
❖ Loop black strap around metal bed frame and feed it back through the plastic clip.

To release the strap:
❖ Pull loose end of strap upward to release clip.

Fig. 12 Safety Strap

9.2 Installation of SCU (System Control Unit)

CAUTION!

Material damage due to incorrect installation of SCU!
➲ If the SCU does not come factory-fitted, have it installed by a service engineer authorized by Linet ®.

10 Operation

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 for the difference to balance itself.

10.1 Initial Operation

Prepare the bed for service as follows:

- Connect the bed to the mains.
- Charge the battery.
- Raise and tilt the mattress platform to the highest position.
- Lower and tilt the mattress platform to the lowest position.
- Check that the castors as well as main brake work correctly.
- Check that the bed extension works correctly.
- Check that it is possible to remove the head and foot boards.
- Check all of the functions on the control elements (Multiboard etc.).
- Check that the siderails function properly.
- Dispose of all packaging (see Disposal).

10.2 Battery

For declared lifetime period of leaded accumulators is recommended during storage:

1. To prevent accumulators from deep discharging (state-of-charge under 70%) and to keep accumulators at least partly charged by regular recharging
2. To store accumulators on dry and cold places (from 10°C to 0°C)
3. To prevent accumulators from being in the sunshine

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

10.3 Battery Operation

- Check the batteries' functionality at least once a month in accordance with the user and service manuals and have the batteries changed if necessary.
- The manufacturer recommends to replace the battery by qualified service organization after 2 (two) years of use. After this period the supposed service life of battery ends and the manufacturer cannot guarantee the battery service life after this period.
- The battery must be replaced with the new battery approved by manufacturer after maximum 5 (five) years of use at the latest.
- Use only batteries approved by the manufacturer.

NOTE *The service life of the batteries depends on the frequency and method of use.*

The manufacturer will assume no responsibility for any damage to the bed or the battery caused by:

- non-observance of the manufacturer's instructions in the user manual
- using batteries not approved by the manufacturer

NOTE *The manufacturer provides a 6-month warranty for the full function of the batteries.*

To charge the battery:

- Connect the bed to the mains.

NOTE *Some bed adjustment options are not available without a battery, for example, height adjustment under a load of above 200 kg.*

The LED indicates the battery's charge status:

Yellow LED	Battery charge status
Not lit	Battery capacity is sufficient (charging completed)
Short flashing (shortly lit, longer not lit) (circa 1.8 sec.)	Battery is charging - continue charging until the LED is extinguished. In emergency cases, the battery 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, battery is defective or broken. Contact manufacturer.
Long flashing (longer lit, shortly not lit) (circa 0.2 sec.)	Low battery voltage - battery can not be used as a backup power supply even for a short period; battery is completely discharged or defective (if this type of signalisation persists, it is necessary to replace the battery - service action)
Lit continuously for several hours (circa 10 hours), when bed is connected to the mains.	Battery absence or failure condition (battery is connected incorrectly, line between the power supply and battery is broken or battery fuses are faulty); contact service department of the manufacturer in case of such signalisation.

10.3.1 Replacing the battery

CAUTION!

Damage to the bed due to incorrect battery replacement!

- ➲ Have the battery replaced exclusively by qualified personnel.
- ➲ Exclusively use batteries approved by the manufacturer.

CAUTION!

Material damage due to overheating!

If the battery is faulty, degassing may occur. In rare cases this might cause deformations of the battery case, control panel housing or cable.

- ➲ Stop using the bed immediately (see Removing the Bed from Service).
- ➲ Inform the manufacturer's service department.

CAUTION!

Risk of reducing battery durability due to incorrect use!

- ➲ Use bed on battery only in crisis situations (e.g.: power blackout, patient compli- cations during transport, etc.)
- ➲ After reconnecting bed to the mains charge battery to full capacity (see chart Bat- tery charge status).

- ❖ Have batteries replaced only by a qualified service organisation.
- ❖ For more detailed information on how to replace the batteries, request service manual from manufacturer.
- ❖ The manufacturer recommends to replace the battery by qualified service organization after 2 (two) years of use. After this period the supposed service life of battery ends and the manufacturer cannot guarantee the battery service life after this period.
- ❖ The battery must be replaced with the new battery approved by manufacturer after maximum 5 (five) years of use at the latest.

Status “Faulty battery”

The battery is regarded as faulty if at least one of the following conditions applies:

- Battery charging constantly
- Low voltage on battery
- Low charging current of battery

- This status is indicated by the battery status indicator being constantly lit.
- These statuses are summarised to Linis and written to Blackbox.

To cancel this status:

- Press STOP button.

Status “Discharged battery”

The battery is regarded as discharged if the following condition is met:

- Defined decrease of voltage depending on discharging current

- This status is indicated by the battery 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.

To cancel this status:

- Press STOP button.

10.4 Removing the Bed from Service

Remove the bed from service as follows:

- Disconnect the bed from the mains.
- Disconnect the ground wire.
- Deactivate the battery.
- Remove accessories.

To prevent damage during storage:

- Pack or cover the bed and accessories.
- Ensure that storage conditions are the same as the operating conditions.

10.4.1 Deactivating the Battery

To avoid damaging the bed and the environment during storage:

- Deactivate the battery on the supervisor panel.

To deactivate the battery on the supervisor:

- Disconnect the bed from the mains.
- Disconnect the ground wire.
- Activate the keypad by pressing the GO button on the supervisor.
- Press the Thigh Rest Up + Thigh Rest Down + Trendelenburg Position buttons at the same time and hold them for three seconds.

The battery is deactivated.

11 Control System (Multicare LE)

WARNING!

Risk of injury when adjusting the bed!

- ➲ Ensure that there are no body parts between the mattress platform elements and the mattress platform frame when adjusting the bed.
- ➲ Ensure that 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 depending on the model:

- Multiboard in both head sections of the siderails
- Additional supervisor
- Handset
- Handset with adapter for easy connection (Plug and Play)
- Handset with illuminated buttons and adapter for easy connection (Plug and Play)
- Foot control for lateral tilt
- Foot control for height adjustment
- Patient control elements integrated in both middle sections of the siderails

Disabling individual functions on the supervisor panel will affect all control elements.

If the bed does not react to individual position settings:

- ❖ Check whether the function is disabled on the supervisor panel.

11.1 Multiboard in Both Head Sections of the Siderails

The Multiboard is the main control element. It is integrated in the outside of both head sections of the siderails.

- Ensure that only nursing staff trained for critical care operate the Multiboard.

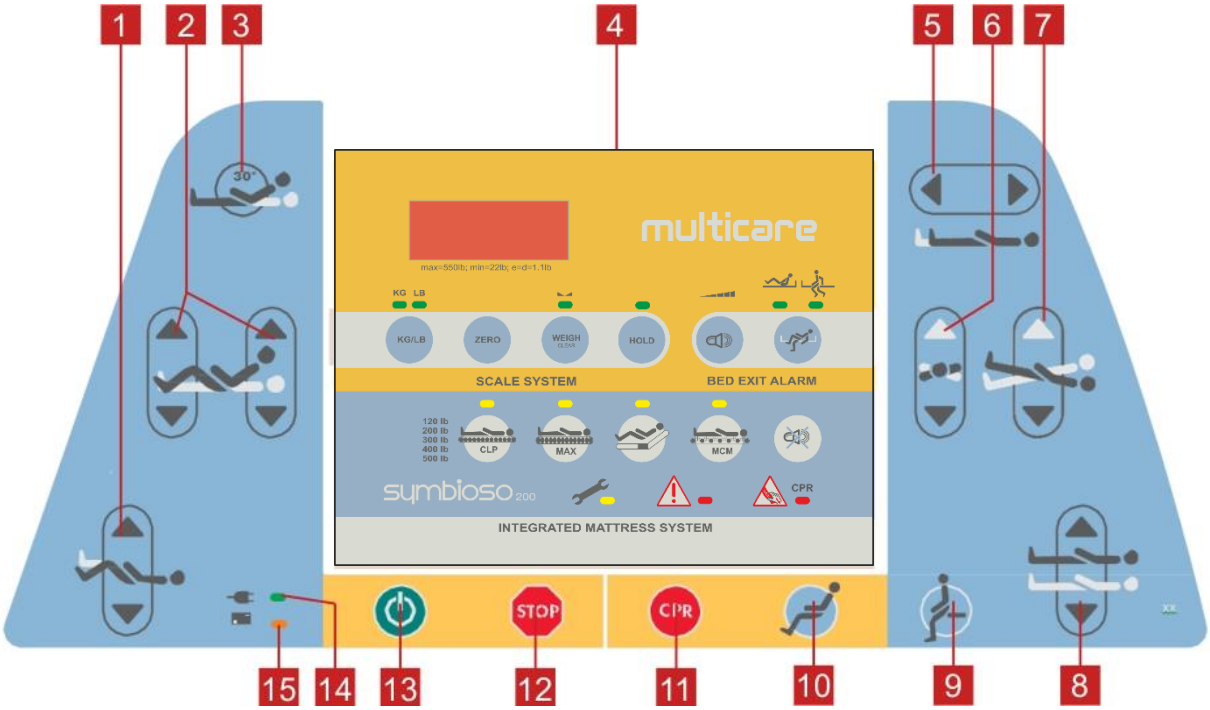


Fig. 13 Multiboard

1. Button Thighrest adjustment
2. Buttons Autocontour setting
3. Button Backrest tilt 30°
4. Control panel Scales and Symbioso
5. Buttons Mattress platform extension
6. Buttons Longitudinal tilt adjustment
7. Buttons Lateral tilt
8. Buttons Height adjustment
9. Button Mobilisation position
10. Button Cardiac chair position
11. Button CPR (resuscitation) position
12. Central STOP button
13. GO Button
14. LED Mains power
15. LED Battery charge status

11.1.1 Central STOP Button

The central STOP button **12** immediately interrupts all bed movements in case of unauthorized bed positioning or an electronic failure.

Pressing the central STOP button **12** immediately stops all electronic bed movements.

11.1.2 Activating GO Button

The GO button **13** activates the keypad or the touchscreens of all control elements.

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 the GO button **13** , the keypad active for another 3 minutes.

During this time the following is possible:

- Adjusting individual mattress platform elements by pressing the corresponding function buttons.
- Disabling individual functions with the lock buttons.

Pressing a function button will keep the keypad active for another 3 minutes.

11.1.3 Function Buttons

The function buttons **1**, **2**, **3**, **5** and **6** adjust the position of the backrest, thigh rest and calf rest as well as the tilting and extending of the mattress platform. The buttons **9** and **10** allow adjusting the CPR and Cardiac Chair memory functions.

NOTE *Bed positioning which depends on columns is continuous.*

NOTE *During continuous positioning Backrest stops automatically in 30 and 45 degrees. To continue in positioning press corresponding button once more.*

NOTE *Pressing two function buttons at the same time will be recognized as an error by the controller. The controller will interrupt immediately all bed movements immediately.*

Set the position as follows:

- Activate the keypad by pressing the GO button.
- Press and hold function button until desired position is reached.

11.1.4 Mains power LED

Status	Meaning
lit LED	connected to the mains
unlit LED	disconnected from the mains
flashing LED	system error

11.2 Additional Supervisor Panel

The additional supervisor panel is an optional control element. The additional supervisor panel can be hung from the foot board if required. It is possible to hold the additional supervisor in the hand while operating.

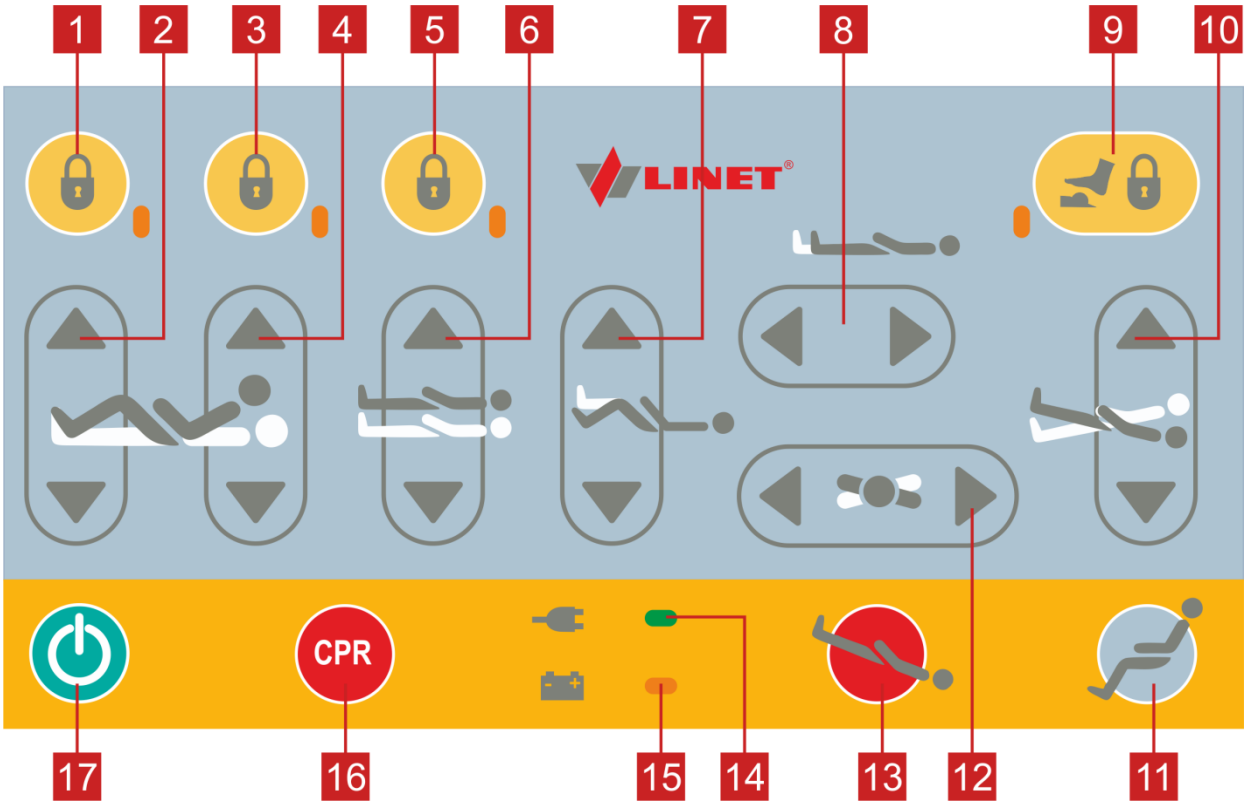


Fig. 14 Additional Supervisor Panel

1. Button and LED Thigh Rest, Calf Rest and Extension Lock
2. Button Thigh Rest Adjustment
3. Button and LED Backrest Lock
4. Button Backrest Adjustment
5. Button and LED Height/Tilt Lock
6. Buttons Height Adjustment
7. Buttons Calf Rest Position
8. Buttons Mattress Platform Extension
9. Button and LED Foot Control Lock
10. Buttons Longitudinal Tilt
11. Button Cardiac Chair Position
12. Buttons ALT
13. Button Trendelenburg Position
14. LED Mains Power
15. LED Battery Charge Status
16. Button CPR (Resuscitation) Position
17. GO Button

To set position:

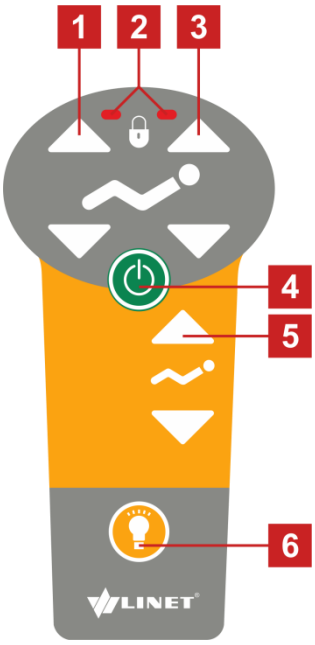
- Activate the keypad by pressing the GO button.
- Press and hold corresponding button until desired position is reached.

11.2.1 Mains power LED

Status	Meaning
lit LED	connected to the mains
unlit LED	disconnected from the mains
flashing LED	system error

11.3 Handset

A handset is included with the bed as an optional feature. The position of the handset depends on the patient's condition. 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. The illumination is activated for 7s if any button was pressed and the illumination is activated for 3 minutes if GO Button was pressed.



1. Buttons Thigh Rest Position
2. LED Thigh Rest/Backrest Lock
3. Button Backrest Position
4. GO Button
5. Button Autocontour
6. Button Flashlight

To switch on the flashlight:

- Press flashlight button **6**.

Set the position as follows:

- Activate the keypad by pressing the GO button.
- Press and hold function button until desired position is reached.

NOTE *The nursing staff must decide whether the patient can adjust the bed.*

If the patient's condition requires it, preventing the patient from adjusting the bed is possible by:

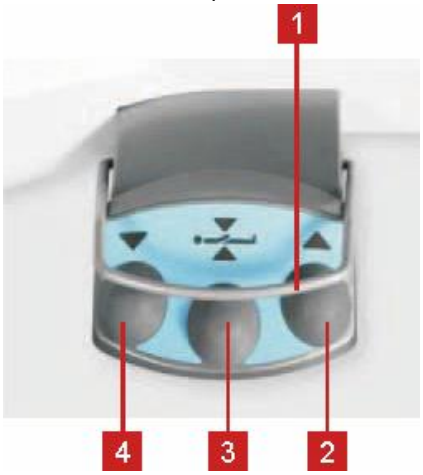
- Disable functions.

NOTE *An adapter for the handset is available. The adapter enables quick mounting and dismounting (e.g. replacing a defective handset, using the handset for another bed).*

Fig. 15 Handset

11.4 Foot Control Bed Height

The foot control is optional and allows setting the height of the bed with one's feet.



1. Protection Frame against Unwanted Activation
2. Foot Switch Raise Mattress Platform
3. Foot Switch Examination Position
4. Foot Switch Lower Mattress Platform

Set the position as follows:

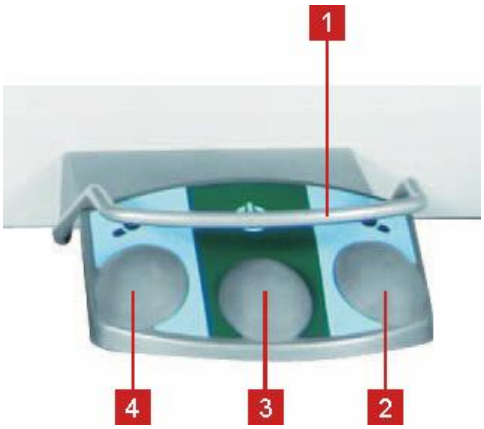
- Press foot switch **2**, **3** or **4** to activate foot control.
- Press and hold foot switch until desired position is reached.

NOTE: *It is possible to activate foot control by pressing GO button on the control elements of the bed then it is not needed to activate the foot control by buttons **2**,**3** or **4**.*

Fig. 16 Foot Control Bed Height

11.5 Foot Switch Lateral Tilt

The foot control is optional and allows setting the lateral tilt of the bed with one's feet.



1. Protection Frame against Unwanted Activation
2. Foot Switch Tilt Right
3. Foot Switch GO
4. Foot Switch Tilt Left

Set the position as follows:

- Activate the keypad by pressing the GO button.
- Press and hold foot switch until desired position is reached.

Fig. 17 Foot Switch Lateral Tilt

11.6 Integrated Control Panels for Patient

The control panels integrated in the middle sections of the siderails allow the patient to adjust the positions of the backrest and thigh rest.

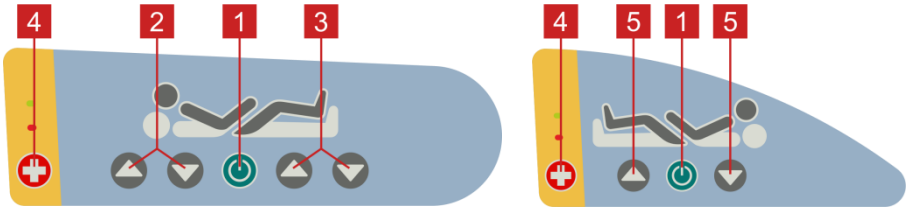


Fig. 18 Integrated Control Panel for Patient

1. GO Button
2. Buttons Backrest Adjustment
3. Buttons Thigh Rest Adjustment
4. Nurse Call Button
5. Autocontour Adjustment (backrest and thigh rest are moved simultaneously)

Set position as follows:

- Activate the keypad by pressing the GO button.
- Press and hold function button until desired position is reached.

NOTE: *Adjusting functions of the control panel are only available when the side rail is lifted up. It is not possible to adjust the bed via integrated control panel if the side rail is lifted down.*

11.7 CPR Backrest Release

WARNING!

Risk of injury due to lowering the backrest too quickly!

- ➲ Ensure that the siderails are in the lowest position.
- ➲ Ensure that there are no body parts between the siderails and the backrest.
- ➲ Press the backrest down using the mattress guard handle only.

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

1. Release Handle

Set the position as follows:

- ❖ Pull and hold release handle **1**.
- ❖ Press backrest down.

Fig. 19 Releasing the Backrest

11.8 Side rails

WARNING!

Risk of injury, damaging or involuntary movement of the bed due to incorrect placement of accessories or handset!

- ➲ Never place any accessories or handset on the side rails in the area where the integrated side rail controller is located.

The split side rails are components of the bed. A pneumatic spring supports the operation of the split side rails. The nursing personnel are responsible for the side rails being folded up while the patient is in bed.

To fold siderails up:

- ❖ Pull siderail up until it latches.

To fold siderails down:

- ❖ Press upper edge of siderail inwards.
- ❖ Unlock siderail by pulling release handle.
- ❖ Fold down siderail slowly.

Fig. 20 Fold up the Split Side rail

11.9 Castor Control and Bed Transport

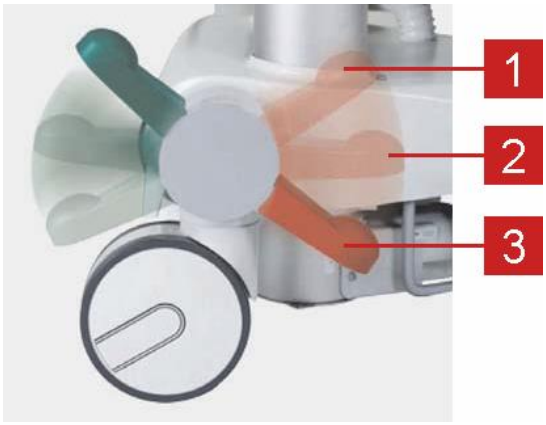
CAUTION!

Material damage due to incorrect transport and involuntary movement!

- Prior to transport, ensure that the bed is disconnected from the mains.
- Prior to transport, ensure that the auxiliary outlet plug (if available) is disconnected from the mains.
- Ensure that the castors are locked prior to assembly, disassembly and maintenance.
- Ensure that the castors are locked when the bed is occupied.
- Hang the mains cable on the appropriate hook on the bed during transport.
- Have the bed transported exclusively by nursing personnel and by at least 2 persons.

Castor control

The control levers are located in the four corners of the undercarriage.



Castor control lever positions:

1. **Forward Movement**
   The front left castor is locked. 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**
   All of the castors are braked.

Fig. 21 Positions of Castor Control Lever

Bed transport:

Fig. 22 Bed Transport

Transporting the bed:

- Adjust bed height to at least 20 cm (9 in.) below maximum height.
- Push bed by handles on head or foot end.

11.9.1 i-Brake® (optional)

It is possible to equip the bed with an automatic castor brake. The automatic castor brake prevents injuries of patients and staff due to an unbraked bed.

The brakes are activated automatically 60 seconds after the bed is plugged in, and 60 seconds after they have been released if the bed is not being moved.

It is possible to activate the brakes manually as well.

11.9.2 Retractable 5th wheel i-Drive® (optional)

It is possible to equip the bed with a 5th wheel in the chassis centre. The 5th wheel helps to steer and manoeuvre the bed in long corridors and small rooms.

If the bed is plugged in, the 5th wheel automatically retracts. In this position, the 5th wheel does not obstruct access to any devices under the chassis.

To activate the 5th wheel i-Drive®:

- Disconnect the bed from the mains.
- Adjust the castor control so that the green lever points down

11.10 Mobi-Lift®

Mobi-Lift® is optional. It serves as a support handle to enhance the patient's safety when getting up. Mobi-Lift® is a support handle with a built-in height adjustment button. It allows the patient to raise and lower the mattress platform.

Fig. 23 Mobi-Lift® Support Handle

11.10.1 Using the Support Handles

WARNING!

Risk of injury due to slipping or falling when standing up!

- Ensure that the support handles are completely inserted in the sleeve fittings.
- Ensure that no bed linen is caught between the sleeve fitting and the support handle.

To adjust the support handle:

- Lift the handle up towards the bed.
- Push the handle into the sleeve fitting as far as it will go.

To adjust the height of the mattress platform:

- Press GO button on any control element.
- Press the button to adjust the height.

11.11 Accessories

WARNING!

Risk of injury due to incompatible accessories!

➲ Use exclusively original accessories from the manufacturer.

NOTE *The manufacturer is not responsible for the use of unapproved accessories.*

11.11.1 Lifting Pole

To ensure safe use of the lifting pole:

- Never exceed the maximum load of 75 kg (165.35 lbs).
- Never use the lifting pole for rehabilitation exercises.
- To prevent the bed from tipping over, ensure that the lifting pole does not project out from the bed.
- Replace plastic handle every 4 years.

To install the lifting pole:

- Insert lifting pole in corresponding sleeve fitting on lifting pole adapter at head end.
- Ensure that safety pin locks into place.

A plastic grab handle with an adjustable strap shall be attached to the lifting pole.

NOTE *The lifting pole adapter is optional. It is necessary to specify this feature in the order.*

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

11.11.2 Accessory rails

Load capacity:

- Maximum load of 5 kg (11.02 lbs) without leverage
- Maximum load of hook pair 10 kg (22.05 lbs)

Accessories for hanging on the accessory rail:

- Urine bag holder
- Redon bottle basket
- Stainless steel rails

Fig. 24 *Accessory Rail*

11.11.3 Safety Night Light

It helps the nursing staff as well as the patient to orientate.

NOTE *The night light is turned off during battery operation.*

11.11.4 Infusion Stands

WARNING!

Risk of injury due to use of incorrect accessories or because of incorrect use!
Infusion Stands must only be used for their intended use. Always read the instructions for use!

- Only mount an infusion pump to the lower (wider) telescopic section of an infusion stand above the head/foot end 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 after installation.
- Do not over tighten the infusion pump clamps during fitment. Over tightening may damage the infusion stand.
- Infusion pump can be only used if the infusion stand is fitted in the accessory holder socket in the head end on the undercarriage of the bed (see **Chyba! Nenalezen zdroj odkazů.**).

Infusion stands can be fitted to the head and foot end of the bed by either fitting into the IV/Infusion sockets mounted on the bed or using alternative accesory holder socket in the head end on the undercarriage of the bed.

- Use only infusion stands with 4 hooks for hanging IV bags or baskets for intravenous solutions.
- Ensure the infusion stand individual hook 2kg maximum Safe Working Load is not exceeded.
- Capacity per hook: 2 kg (4.41 lbs).
- Ensure the infusion stand 20kg maximum Safe Working Load is not exceeded.
- The total maximum loading of the IV/Infusion poles must not exceed 20 Kg (44.1lbs).

Fig. 25a Infusion Stand

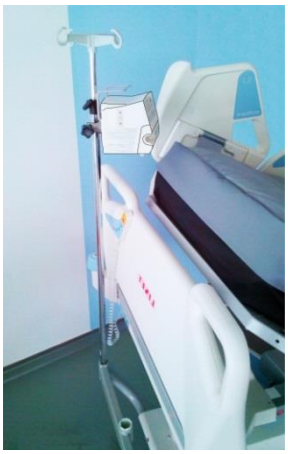


Fig. 25b Infusion Pump – Correct Fitment

11.11.5 Stabilising ALT Pads

The stabilising pads ensure a stable position of the patient during ALT in order to prevent extubation or disconnection of IV lines or other equipment.

Stabilising pad set:

- 2 lateral arm pads
- 2 lateral leg pads
- 2 head pads
- 1 internal leg pad

❖ Always use Linet ® stabilising ALT pads for positioning patient in centre of bed during ALT.

Applying pads:

❖ Position the patient in the middle of the bed.
❖ Place lateral pads between patient and siderails.
❖ Attach head pads to arm pads with Velcro.
❖ Place internal pad between the patient's legs.
❖ Tilt mattress platform left and right by 30° to check if the patient's position is stable.
❖ The position is stable if the patient does neither shift nor turn over.

Fig. 26 Stabilising Pads

11.11.6 Ventilation Circuit Holder

The ventilation circuit holder prevents an extubation.

❖ Always use Linet ® ventilation circuit holder to prevent extubation during ALT.

Applying ventilation circuit holder:

❖ Put ventilation circuit holder in hole on right or left of head end.
❖ Fasten ventilation circuit holder with wing screw provided.
❖ Put intubation tube through plastic head of ventilation circuit holder.
❖ Tilt mattress platform left and right by 30° to check if intubation tube is fastened securely.
The fastening is secure if no parts of the ventilation circuit are disconnected.

Fig. 27 Ventilation Circuit Holder

11.11.7 Monitor Tray

The monitor tray is suitable for transporting monitors with a weight of up to 33.07 lbs.

Installing the monitor tray:

- ❖ Insert two vertical monitor tray tubes into corner sleeves on foot end.
- ❖ Fixate monitor with safety belts in order to avoid any damage during transport.

Fig. 28 Monitor Tray

11.11.8 110 V Auxiliary Outlet

DANGER!

Danger to life due to incorrect use!

- ➲ Do not use auxiliary outlet for life-sustaining equipment.
- ➲ Ensure that total leakage current in the chassis does not exceed 10 µA.

DANGER!

Danger to life due to damaged cables or faulty grounding!

- ➲ Do not use damaged cables.
- ➲ Use plastic hooks on head end to secure cables when moving the bed.
- ➲ Check grounding regularly.
- ➲ Ensure that power outlet plug is connected to a receptacle marked with a green dot for **Hospital Only** or **Hospital Grade**.

An auxiliary power supply outlet for medical devices is located under the foot board.

Maximum total load:

- ■ 10 A

Receptacle rating:

- ■ 125 Vca
- ■ 10 A
- ■ 60 Hz

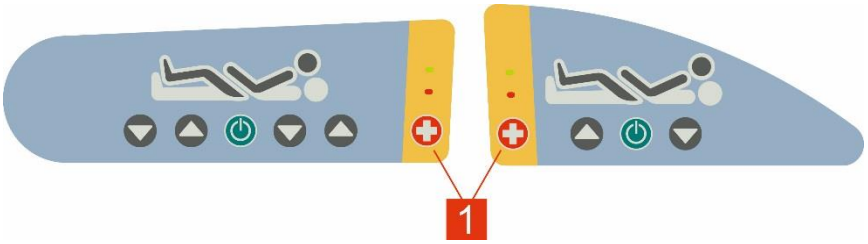
NOTE *Auxiliary outlet energy is available exclusively it the Multicare accessory plug is connected to the mains.*

Fig. 29 110 V Auxiliary Outlet

11.11.9 Nurse Call

Button for activating the Nurse Call function:

The buttons for activating the Nurse Call function are located on the inner and outer sides of the foot section side rails. Speakers and microphones are on the inner sides of the head section side rails.



1. Nurse Call button

2. Speaker and microphone

Fig. 30 Buttons for the Nurse Call function

Activating the Nurse Call function:

- Press button 1 - Nurse Call.

When the nurse confirms the activation of this function:

- Press button 1 - Nurse Call.

The patient can speak into the microphone – 2 located on the inner side of the head section side rails.

11.11.10 Oxygen Bottle Holders

WARNING!

Risk of injury with oxygen bottle holder due to incorrect use or due to careless driving!

- Ensure the oxygen bottle holder is correctly fitted in correct position.
- It is necessary to place oxygen bottle holder (with or without O2 bottle) before transport to secure transport position.
- Be aware of people or objects in close proximity when driving or manipulating the bed equipped with oxygen bottle holder.
- Secure the oxygen bottles against falling or involuntary movement with rubber strap.
  Place the oxygen bottle holder on the bed by instructions in the following text.
  Ensure the oxygen bottle valve will not get damaged by careless or incorrect manipulation or placement.

The oxygen bottle holders are suitable for transporting oxygen bottles with a weight of up to 33.07 lbs and a volume of 11 lbs.

Version A

- Put oxygen bottle holder on transversal profile behind head end.

NOTE *Using oxygen bottle holder 4MAR2010PC004 is not possible if the bed is equipped with an additional adapter for a lifting pole.*

Fig. 31 Oxygen Bottle Holder A

Version B

- Put holder on sleeve fittings in multifunctional accessory adapter on chassis.
- Ensure the locking pin of oxygen bottle holder B is locked in sleeve fitting.

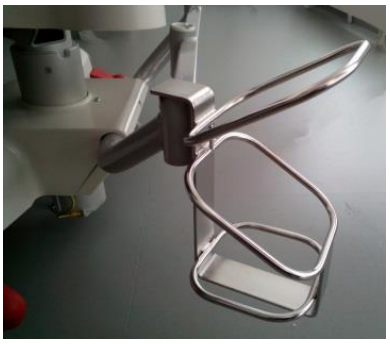


Fig. 32a Oxygen Bottle Holder B – correct fitment

Fig. 32b Oxygen Bottle Holder B – incorrect fitment

Version C

- Put oxygen bottle holder on all 4 accessory adapters on chassis.

Fig. 33 Oxygen Bottle Holder C

11.11.11 LINIS SafetyPort (optional)

LINIS SafetyPort is a medical device data system enabling transferring specific parameters from the bed to the hospital information system. The use of integrated sensors in the bed allows continuous monitoring of the safety parameters. Data collection and evaluation take place at one central location simultaneously for all beds connected to the system. The records are completely anonymous and the system does not work with the patient's name or identification number. All data are sent automatically and updated on a regular basis. Moreover, the customer is able to configure the data he requires to be receiving.

12 Using Symbioso

12.1 Preparing the Bed for the Patient

DANGER!

Risk of suffocation due to air-impermeable mattress cover!

- ➲ Use mattress cover correctly.
- ➲ The nursing staff are responsible for the safety of the patient on the mattress cover.

WARNING!

Risk of injury when putting patient into bed!

Before putting the patient into bed:

- ➲ Ensure that mattress is completely and correctly inflated.
- ➲ Ensure that mattress is correctly secured with safety straps.

CAUTION!

Material damage due to dampness or contamination!

- ➲ Make sure mattress cover has been cleaned and is completely dry (see Cleaning/ Disinfection).

12.1.1 Preparation

- ❖ Inflate mattress (see Setup).
- ❖ Put a sheet loosely on the mattress if not prescribed otherwise by qualified personnel.

12.1.2 Putting the Patient into the Bed

- ❖ Lay patient on mattress.

For an ideal lying position:

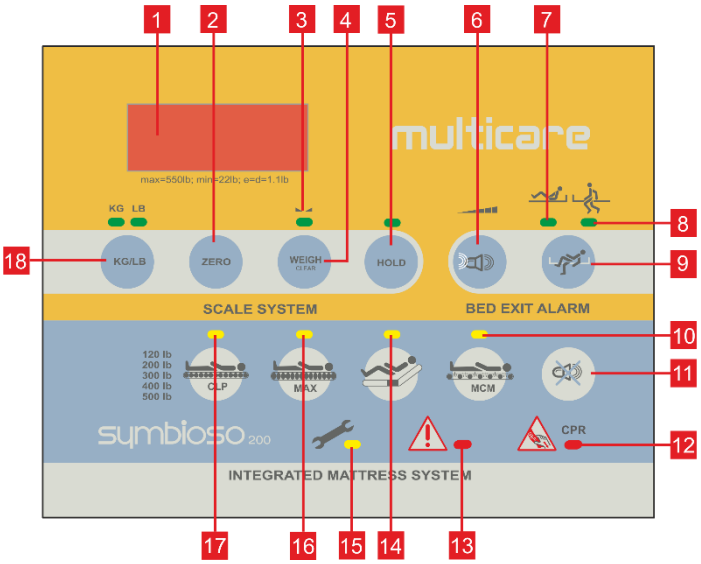
- ❖ If additional blankets or sheets are used, make sure that ease of movement is sufficient.
- ❖ Ensure that blankets, sheets, clothing etc. do not cause pressure sores (e.g. due to creases, seams etc.).
- ❖ Do not place any additional sheets, blankets etc. between mattress and patient.

13 Patient Weighing

13.1 Control Element Weighing System

Multicare LE is equipped with a weighing system that allows weighing the patient in bed. The control panel for this system is part of the Multiboard.

13.1.1 Screen Scales



1. Primary display – absolute weight
2. Button Zero
3. Weight balance indicator
4. Button Weigh/Clear
5. Button Hold
6. Button Bed Exit Alarm volume
7. Inner zone indicator
8. Outer zone indicator
9. Button Bed Exit Alarm
10. Button MCM mode (with indicator)
11. Button Symbioso alarm mute
12. CPR indicator
13. System Error indicator
14. Button Fowler Boost (with indicator)
15. Service due indicator
16. Button MAX mode (with indicator)
17. Button CLP mode (with indicator)
18. Button KG/LB (change between two units of weight)

Fig. 34 Control panel scales and Symbioso

13.1.2 Display

- Primary display **1**:
  Displays the calibrated and metrological certified weight.

13.1.3 Taring Weight

Taring is used to set ZERO on the display before placing the patient on the bed. It is used to show the actual weight of the patient.
Taring must be done with an unloaded bed, without the patient. The mattress platform is positioned about 20 cm above the lowest position and the mattress platform is in the horizontal position.

To tare weight:

- Ensure that nothing touches the bed except you.
- Press icon 2 (Zero) for 0.5s. Hold the icon for another second until the primary display starts to blink.
- Press icon 2 to confirm taring. “0” is shown on display.

Place the patient on the bed.

To cancel taring:

- Press icon 4 while taring.

13.1.4 Bed Overload

If the bed load is over 550 lbs:

- The “Hi” icon is shown on the display.

If the bed load is over 573 lbs:

- Additional acoustic alarm is activated.

NOTE: *If the bed is overloaded it is impossible to position or manipulate the bed until overloading is removed.*

NOTE: *Bed overloading always has higher priority than HOLD/FREEZE and Taring functions.*

13.1.5 Bed Underload

If the bed is underloaded (factory zero – 11 lbs):

- Display shows the icon „Lo“

13.1.6 Weighing in tilt

The bed can be weighed in tilt. Accuracy is guaranteed by the spirit level, which is located at the head/foot of the bed. If the bubble is in the highlighted circle then weighing is accurate.

13.1.7 Hold Mode

Hold mode must be used only when the weights are stabilized. It allows attaching or removing bed accessories without changing the weight.

To activate hold mode:

- Wait 5 s until the weights are stabilized. The icon **3** will be illuminated when the weights are stabilized.
- Press button **5** for 2 s.
- The display shows „HOLD“.
- Add or remove required accessories.

To deactivate hold mode:

- After adding or removing accessories wait 5 s, until the weight is stabilized on both displays. When the weight is stabilized the icon **3** is illuminated.
- Press button **5** for 2 s.
- Both displays shows the original weight.

To deactivate hold mode without saving the weight:

- Press button **4**.

13.1.8 2-Zone Bed Exit Alarm

Inner zone alarm (indicator 7)
Alarm starts when patient moves closer to siderails or bed ends.

Outer zone alarm (indicator 8)
Alarm starts when patient leaves bed.

Activating bed exit alarm:

- Press button **9** for 2 s.

Dectivating bed exit alarm:

- Press button **9** for 2 s.

To select a zone:

- Press icon **9** briefly until indicator for required zone is lit.

To adjust the volume:

- Press button **6** until desired volume is reached.

13.2 Max Inflate Mode (MAX)

Max Inflate Mode guarantees a firm surface as required for nursing procedures. This mode interrupts CLP (Constant Low Pressure).

Max Inflate Mode is required for:

- transferring patients
- complex nursing procedures
- transporting the bed

To activate/deactivate the mode:

- Press button **16**.

The mattress icon will flash during the inflating process, and remain ... as soon as maximum inflation is obtained.

After 30 minutes, the SCU will automatically switch back to CLP mode. It is possible to re-select Max Inflate Mode once. After that, at least 30 minutes of CLP mode are required before Max Inflate Mode is enabled again.

13.3 Constant Low Pressure Mode

CLP Mode keeps the mattress pressure at the level selected. The pressure is checked every 30 seconds, and adjusted if necessary.

To activate/deactivate the mode:

- Press button **17**.

13.3.1 Fowler Boost Function

The Fowler Boost function lineary increases pressure in the seat section according to position of back rest.
It is possible to disable this function for lighter patients.

To enable/disable the function:

- Press button **14**.

13.3.2 Pressure Levels

Risk of injury due to incorrect pressure level!
The recommended pressure levels may not be the optimum for all situations but should be used in conjunction with clinical judgement based on the individual patient; e.g. weight, weight distribution, position and comfort needs.

- Do not reduce pressure level setting by more than 1 step for the patient's comfort.
- Regardless of the pressure level, make sure the patient is not lying directly on the foam base.

It is possible to select different pressure levels to match weight, weight distribution and comfort requirements.

To change the pressure level:

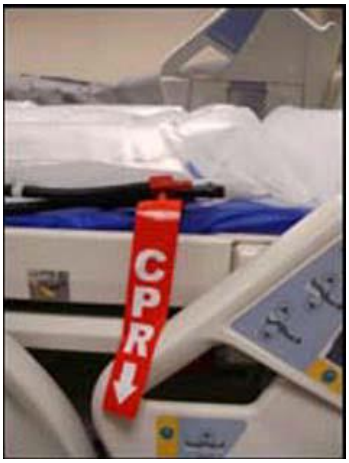
- Press - or + of button **17** until required pressure level is obtained.

Recommended pressure levels:

- 1: up to 120 lb
- 2: up to 200 lb
- 3: up to 300 lb
- 4: up to 400 lb
- 5: 400 lb +

NOTE *The pressure levels indicated are merely recommendations. Which pressure level is best suited for a patient depends on factors such as weight, weight distribution and personal comfort.*

13.3.3 CPR (Symbioso)



Symbioso is equipped with CPR strips on both sides next to the manual backrest release.

- ❖ Pull CPR strip on patient's left- or right-hand side.
- ❖ The mattress will deflate.

CPR Mode is activated.

Before re-inflating the mattress:

- ❖ Unzip the cover, but do not remove the cover.
- ❖ Reconnect the CPR valve sealing caps, mounted internally on both sides of the mattress at the head end.
- ❖ Close the cover and ensure that the red CPR pull tags are hanging outside the cover through the slots in the cover.

Fig. 35 CPR Strip

NOTE *In the pictures, the mattress is shown without the cover for clarity. Removing the cover is not necessary for replacing the CPR strip.*

13.4 Alarms

⚠ WARNING!

Risk of injury due to lack of support!

If the air mattress is empty so that the patient is lying directly on the foam base, and it is not possible to solve the problem by following the troubleshooting instructions:

➲ Move patient onto a suitable support surface as quickly as possible.

Symbioso is equipped with a comprehensive alarm system which detects any problems with the system performance.
Alarms are indicated by a red triangle on the Multiboard and an audible alarm signal.

In case of an alarm:

- ❖ Mute the alarm signal.
- ❖ Make a note of the error code number displayed on the Multiboard display.
- ❖ Check for errors (see Troubleshooting).

14 i-Drive Power (optional)

14.1 i-Drive Power System - Basic Description

It is possible to equip the bed with the i-Drive Power wheel. The i-Drive Power helps hospital staff to drive the bed during patient transport with minimal manpower.
The i-Drive wheel is located in the center of the bed under the undercarriage. i-Drive Power is equipped with its own battery and charger and it is not dependent on the bed functions so, if discharged you can still use the bed functions.
The bed is equipped with one i-Drive controller. i-Drive is oriented in straight direction of the bed.

14.2 Safety instruction for i-Drive Power

- Follow the instructions carefully.
- Ensure that the bed is operated only by qualified staff.
- Make sure the siderails are pulled up during the transport.
- Never use bed positioning buttons during transport.
- Never use Fast forward button when descending. The Fast forward button is recommended for use when ascending as it is more efficient.
- Special precaution need to be considered when reversing. Always keep distance from the bed and never use reverse button when descending or ascending.
- Do not use Free Drive to transport on a slope greater than 1 degree unless adequate personnel are available to manage safe bed transport.
- Never use the i-Drive Power to drive the bed up or down the slope that exceeds 6 degrees.
- Never leave the bed with an activated i-Drive Power system without supervision of the trained staff.
- Always use the regular mechanical brake system to brake and stabilize the bed.
- Pay increased attention when driving the bed using i-Drive Power. Be aware of people and objects in close proximity and avoid collision with them by careful driving, especially by appropriate speed control.
- Make sure the bed is unplugged and bed brakes are released before using i-Drive Power.
- Push the emergency stop drive button if immediate movement interruption is needed (e.g. to avoid collision with other persons or objects).
- Retract the i-Drive Power wheel to the undercarriage when parking. This will prevent misuse when unbraking and braking the bed.
- The i-Drive Power electromagnetic brake is designed just for temporary bed stop and not for the permanent parking.
- Switch off the i-Drive Power battery prior to long-term storage or transport (see chapter 6.1).
- Push the emergency retraction button under the chassis cover to retract the i-Drive Power wheel
- in case an of i- Drive Power system failure. This will enable moving the bed to a safe area manually without using i-Drive Power.
- Retract the i-Drive Power wheel to the undercarriage every time you intend to move the bed sideways.
- Pay attention to the LED battery status indicator and plan your drive using the i-Drive Power accordingly. Insufficient battery capacity can cause unexpected complications and risks during the drive.
- Always plug the bed in when you finish your drive in order to recharge the battery and keep your bed ready to go using the i-Drive Power.
- The i-Drive Power battery must be replaced every 2 years to maintain proper functions of the i-Drive Power.

14.3 Specifications of Use

WARNING!

Risk of injury due to careless driving!

- Always drive safely and carefully.
- Observe the path for any obstacles and avoid collisions.
- Ensure there are no people in your way.
- Manipulate with the bed carefully not to drive over any staff or patients.

Intended use:

- bed transport (with or without patient)

Unintended use:

- riding the bed
- other usage than described in user manual

NOTE *Each bed can transport only one patient at a time and cannot be used to transport other items (except bed accessories in secured position).*

NOTE *For information concerning uses other than those outlined in the "Specifications of Use" section above, please contact Linet ®.*

14.4 Manipulation

CAUTION!

Damage to i-Drive Power main control panel cable due to wrong cable placement!

➲ Ensure that the main control panel connecting cable (**13**) is placed exactly as on the Chyba! Nenalezen zdroj dkazů. **36**.

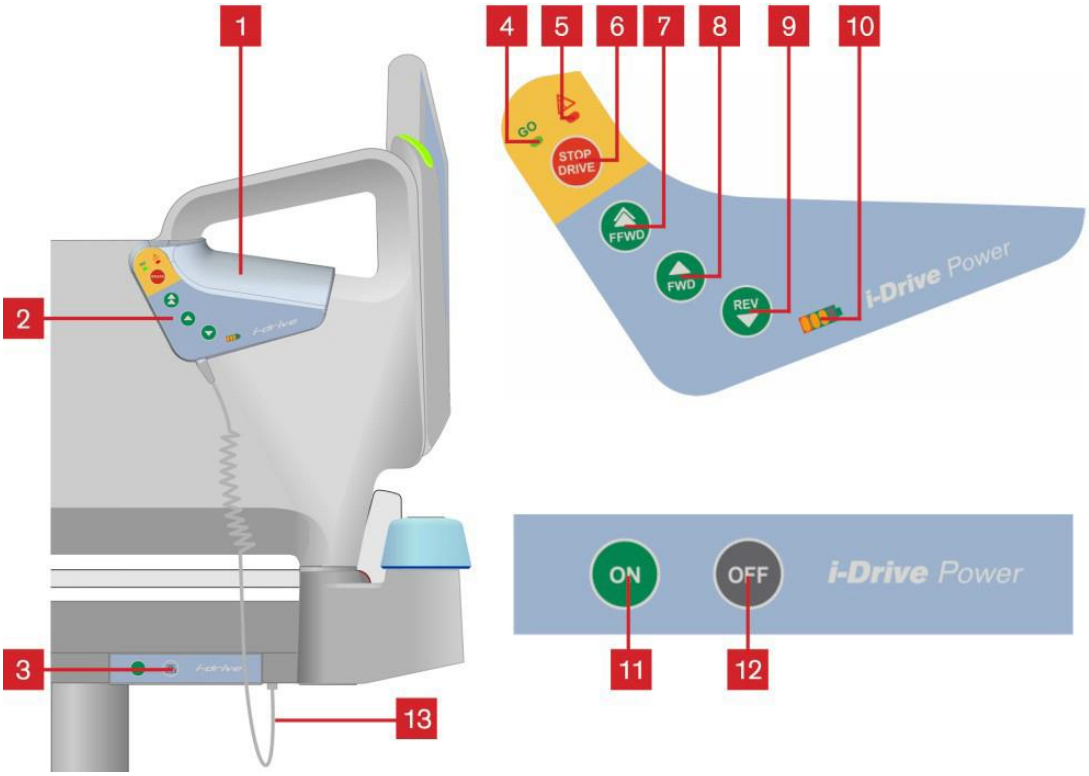


Fig.36 i-Drive Power controllers

Functions:

1. Safety Sense (touch sensor)
2. Main control panel
3. Activation panel
4. GO indicator
5. Fault indicator
6. Stop drive button
7. Fast forward button
8. Forward button
9. Reverse button
10. Battery status and fault indicator
11. i-Drive wheel Activation button
12. i-Drive wheel Retraction and Deactivation button
13. Main control panel cable – correct cable placement

NOTE *The i-Drive Power controller cannot control the bed functions. Control the bed using the bed control elements.*

NOTE *The main control panel is enhanced with a touch sensor (**1**); your hand must always be in contact with the i-Drive Power control panel to use the functions. If released, the i-Drive Power will stop.*

NOTE *Raising and lowering of the i-Drive wheel is electrically controlled by the i-Drive activation panel.*

14.4.1 Powered Drive

CAUTION!

Damage to property due to incorrect transport and involuntary movement!

- ➲ Prior to transport, ensure that the bed is disconnected from the mains.
- ➲ Prior to transport, ensure that the auxiliary outlet plug (if available) is disconnected from the mains.
- ➲ Ensure that the castors are locked prior to assembly, disassembly and maintenance (e.g.: i-Drive Power maintenance).
- ➲ Ensure that the castors are locked when the bed is occupied.
- ➲ Hang the mains cable on the appropriate hook on the bed during transport.

1. Check, if the mains switch of i-Drive Power is activated. (see chapter 16.4.3)
2. Press the ON (**11**) button on the Activation panel. The i-Drive wheel will lower and the GO indicator (**4**) will flash.
3. Place your hand on the Safety Sense touch sensor (**1**) and push the buttons **7** or **8** for forward motion, or **9** for reverse motion. Your hand must be placed on the Safety Sense sensor to use the i- Drive Power, if released, the i-Drive Power will stop.
4. The i-Drive motor is immediately stopped and the electric brake is activated after pressing the red stop drive button (**6**) when braking or in emergency.
5. i-Drive Power control system is automatically deactivated and the electric brake is activated if no i-Drive function is used for 3 minutes. This is signalized by the green indicator (**4**) which is extinguished after 3 minutes.

NOTE *Your hand must be placed on the Safety Sense panel to use the i-Drive Power.*

NOTE *i-Drive Power is not designed for ascending or descending a slope greater than 6° or longer than 65 ft. (20 m), especially when loaded. The support of personnel is needed when ascending or descending with a full SWL.*

NOTE *The i-Drive wheel has an electromagnetic brake for emergency or normal stopping of the bed. When parking it is always necessary, for safety reasons, to use the bed brakes (see chapter: Castor control and bed transport) which will brake all four bed castors.*

NOTE *When i-Drive wheel is lowered, it is not possible to move the bed to the sideways. Press the OFF button to retract the wheel, release the castors to the neutral position and then move the bed to any direction required.*

14.4.2 Braking

1. Press and hold the stop drive button (**6**) to brake immediately.

-or-

2. Press and hold the reverse button (**9**) to brake slowly (Press the Forward button to brake when reversing)

-or-

3. Release your hand from the touch sensor area (**1**) and i-Drive Power will brake automatically.

NOTA *Always brake the bed when not transporting by using the castor control lever. The i-Drive brake is not designed to permanently brake the bed.*

NOTE *In a crisis situation (e.g. acceleration when driving down a steep slope) i-Drive dual braking prevents acceleration and slows down bed movement. However, it is not guaranteed the bed will stop by itself without personnel support (using stop drive button and castor control lever).*

NOTE *When descending, it is possible to actively brake using the opposite direction button to slow.*

14.4.3 i-Drive Power Activation/Deactivation

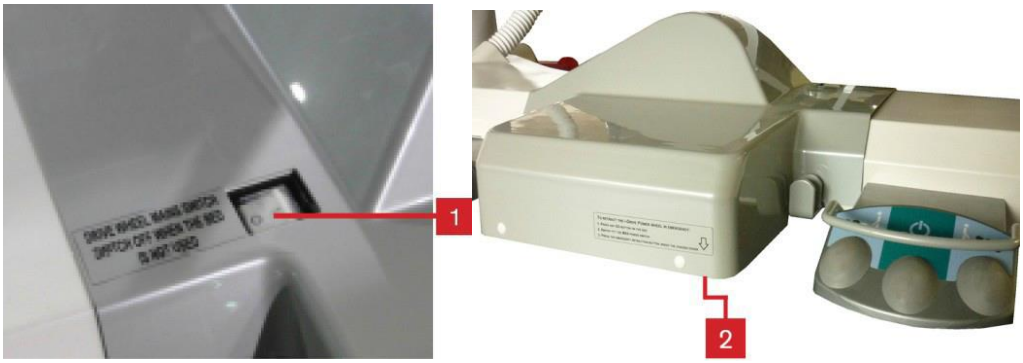


Fig. 37 i-Drive mains switch

To activate the i-Drive Power:

1. Check, if the mains switch of i-Drive Power is activated (**1**).
2. Press the Activation button ON located on the activation panel. The i-Drive wheel will lower and the green indicator will flash.

To deactivate the i-Drive Power:

1. Retract the i-Drive wheel using the Retraction button located on the activation panel.
2. Deactivate the i-Drive using the mains switch (**1**).

Emergency i-Drive Power wheel retraction:

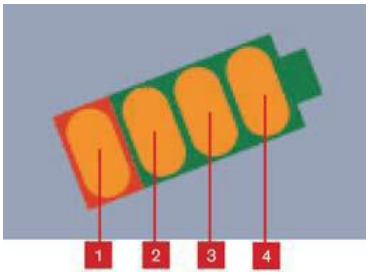
1. Press any GO button on the bed.
2. Deactivate the i-Drive using the mains switch (**1**).
3. Press the emergency retraction button (**2**).

NOTE *Use emergency retraction in case of battery discharge or drive malfunction to move the bed to a safe area manually without using i-Drive Power.*

14.4.4 Free Drive

The i-Drive motor is equipped with free drive, which is active after pressing the forwards (**7** or **8**) or backwards (**9**) buttons (until user holds the touch sensor area).
Free Drive is deactivated and the brake is activated when the direction of motion is changed. This is feature for lowering the risks when going to a slope.

14.5 Battery



Battery charge status:

1. While this indicator is flashing, the battery is critically discharged.
2. 50%
3. 75%
4. 100% - the battery is charged

Fig. 38 Battery indicator levels

To charge the battery:

- Connect the bed main cable to mains power.
- i-Drive will be charged (with the battery discharged, the charging may take up to 9 hours).

NOTE *Battery charge values are just informational. Battery life is reduced when the battery is allowed to discharge completely.*

14.6 Fault Signalization

The system is protected against failure states, by stopping and braking the drive system, and respective signalization. The fault indicator flashing briefly and the battery indicator shows the fault state. Some defects are cleared automatically (e.g.: drive overheating).

Error	LED1	LED2	LED3	LED4
Drive overheated*	Off	Off	Off	On
Electronics overheated*	Off	Off	On	Off
Brake error	Off	Off	On	On
Retraction not completed	Off	On	Off	Off
5V off limits	Off	On	Off	On
FETclosingpenetrated	Off	On	On	Off
Control circuit overheated	Off	On	On	On
Controlcircuiterror	On	Off	Off	Off
Activation button stuck	On	Off	Off	On
Retraction button stuck	On	Off	On	Off
Activebuttonafterstart	On	Off	On	On
** An acoustic signal occurs before the drive is blocked (short acoustic signalization)*				
NOTE *LED indicators are numbered from theleft (see Fig.39)*				

14.7 Light Indicators

Indicator	Meaning
Go Indicator	
▪ Constantly lit	Hand is on touch sensor; drive wheel is ready for use.
▪ Flashing	Hand is not on touch sensor; i-Drive is not ready for use.
Fault Indicator	
▪ Constantly lit	i-Drive cannot be activated (i-Drive wheel is not lowered, castor control lever is braked, bed is connected to the mains).
▪ Flashing	System is faulty (indicated on battery status indicator, see service manual) -or- i-Drive control box heat protection is activated

14.8 Technical Specifications

Specification	Value
i-Drive wheel diameter	8,27 in.
Max. fast forward speed (flat ground, loaded)	2,75 MPH (±15%)
Max. forward speed (flat ground, loaded)	1.34 MPH (±15%)
Max. reverse speed (flat ground, loaded)	1.34 MPH (±15%)
Max. angle of ascent	6°
Noise level (when retracting the drive wheel)	65 dB

14.9 Electrical specification

Specification	Value
Battery Voltage	36 V DC, Capacity: 12 Ah
Maximum Power Input	300 W
Fuse Accumulator fuse	pipe fuse T 3.15 A MDP 030 (30 A)

14.10 I-Drive Power Maintenance

Periodical maintenance of the i-Drive Power must be done by qualified service technician or authorized service organization at least once a year.

Service technician must check the following:

- battery status and eventual replacement of batteries (after maximum of three years of duty)
- gas spring – replace if necessary (after maximum of three years of duty)
- i-Drive Power wheel – replace if necessary
- lifting mechanism – grease if necessary
- cables, control elements – replace if necessary
- i-Drive Power function

NOTE *To continue maintenance please see chapter Maintenance.*

15 X-Ray Lung Examination

Fig. 39 X-Ray Lung Examination

The backrest of the bed consists of HPL and is x-ray translucent. The bed is equipped with an x-ray cassette hol- der with 2 U-profiles under the backrest. This design allows taking x-ray images of the patient's lungs without moving the patient manually.

15.1 Necessary Steps before the Examination

NOTE *This procedure is suitable for patients who cannot be moved due to critical conditions (e. g. internal bleeding).*

- Make sure that patient is in centre of bed.
- Make sure that backrest is in lowest position and siderails are folded up.
- Pull out x-ray cassette holder.
- Insert x-ray cassette (format 16.93 in. x 13.78 in.).
- Push back x-ray cassette holder with x-ray cassette so that the cassette centre indicator is exactly under the edge of the mattress platform.
- Correct position of x-ray cassette holder using the tooth mechanism so that the upper edge of the x-ray cassette is exactly under the patient's shoulder line.
- Adjust parameters of the x-ray device.

16 Examination with C-arm

Backrest and seat of the bed are x-ray translucent. The bed is equipped with a column construction. This design allows C-arm-assisted operations (mainly cardiological operations such as temporary external cardiostimulation) without moving the patient. The x-ray tube of the C-arm is located between the undercarriage and the mattress platform.

16.1 Necessary Steps before the Operation

- Make sure that backrest is in highest position and siderails are folded up.
- Position upper part of C-arm (sensor and indicator) above the patient's chest.

17 Cleaning/Disinfection

Antibacterial surface finish:
Selected parts of the Multicare bed are treated against the spread of bacteria with certified technology by Sanitized®. This technology supplements regular bed disinfection procedures. Regular bed cleaning cannot be omitted relying only on the antibacterial surface finish. Clean the bed according to the following instructions.

WARNING!

Risk of injury due to accidental bed movement!

- ➲ Always disable the function buttons when cleaning between the undercarriage and mattress platform.

CAUTION!

Material damage due to incorrect cleaning/disinfection!

- ➲ Do not use washing machines.
- ➲ Do not use pressure or steam cleaners.
- ➲ Exclusively use the recommended cleaning agents.
- ➲ Follow the instructions and observe the dosages recommended by the manufacturer.
- ➲ Ensure that disinfectants are selected and applied exclusively by qualified hygiene experts.

For safe and gentle cleaning:

- ❖ Disconnect the bed from the mains.
- ❖ Do not use any strong acids or bases (optimum pH range 6 - 8).
- ❖ Exclusively use detergents that are suitable for cleaning medical equipment.
- ❖ Do not use abrasive powders, steel wool, or other materials and cleaning agents that might damage the mattress replacement system.
- ❖ Never use any corrosive or caustic detergents.
- ❖ Never use detergents that deposit calcium carbonate.
- ❖ Never use detergents with solvents that might affect the structure and consistency of the plastics (benzene, toluene, acetone, etc.).
- ❖ Clean the bed with a well-wrung, damp cloth.
- ❖ Clean electrical components carefully and allow them to dry sufficiently.

Linet ® recommends the following cleaning agents:

Parts to be cleaned	Cleaning agents
Multicare hospital bed	■ Mikrozid, Terralin Protect, Thermosept (Schülke & Mayr) ■ Bacillol AF, Bacillol Rasant, Dismozon Pur, Microbac Forte, Neodisher Dekonta (BODE Chemie) ■ Lysoformin 3000, Lysoform Spezial (LYSOFORM) ■ Incidin plus, Incidin rapid (Ecolab) ■ Perform, TPH protect (Schülke)
Mattress cover base, comforter covers, air cells, foam base, SCU	■ standard hospital detergents ■ alcohol or chlor based desinfections
Mattress cover top	■ standard hospital detergents ■ alcohol and quaternary ammonium-based disinfectants

17.1 Preparing for Cleaning

Prepare for cleaning as follows:

- ❖ Put the mattress platform in the highest position.
- ❖ Adjust the back and thigh rests so that the reverse sides are accessible.
- ❖ Disable the function buttons on the control elements using the supervisor panel.
- ❖ Disable the foot controls using the supervisor panel.
- ❖ Disconnect the bed from the mains.
- ❖ Move the bed to the location where it will be cleaned.
- ❖ Lock the brakes on the bed.

17.2 Cleaning (Multicare LE)

17.2.1 Daily Cleaning

Clean the following bed parts:

- All control elements for adjusting the bed
- All handles
  - CPR release handle
- Bed ends
- Siderails (in highest position)
- Freely accessible mattress surface
- Mobi-Lift®
- Accessory rails

17.2.2 Cleaning before Changing Patients

Clean the following bed parts:

- All control elements for adjusting the bed
- All handles
  - CPR release handle
- Bed ends
- Siderails (in highest position)
- Freely accessible mattress surface
- Mobi-Lift®
- Accessory rails
- All plastic mattress platform covers
- Plastic undercarriage covers
- Telescopic columns
- Mattress on all sides
- Freely accessible metal parts of mattress platform
- Cable ducts
- Lifting pole sleeve fitting
- Infusion stand sleeve fitting
- Bumpers
- Castors
- Brakes

17.2.3 Complete Cleaning and Disinfection

Clean the following bed parts:

- All control elements for adjusting the bed
- All handles
  - CPR release handle
- Bed ends
- Siderails (in highest position)
- Freely accessible mattress surface
- Mobi-Lift®
- Accessory rails
- All plastic mattress platform covers
- Plastic undercarriage covers
- Telescopic columns
- Mattress on all sides
- Freely accessible metal parts of mattress platform
- Cable ducts
- Lifting pole sleeve fitting
- Infusion stand sleeve fitting
- Bumpers
- Castors
- Brakes
- Interior parts
- (accessible after removing mattress platform covers)

17.3 Cleaning (Symbioso)

17.3.1 General guidance – Standard Cover

- Do not use any strong acids or alkalines, (optimum pH range 6 – 8. Do not exceed pH of 9).
- Only use detergents that are suitable for cleaning medical equipment.
- Do not use abrasive powders, steel wool, or other material and cleaning agents that might damage the mattress. Do not scrub mattress surface.
- Never use any corrosive or caustic detergents.
- Never use detergents that deposit calcium carbonate.
- Never use detergents with solvents that might affect the structure and consistency of the plastics (benzene, toluene, acetone, phenol, etc.).
- Use only hospital-approved cleaners and observe local directives concerning infection control.
- Always rinse with water after cleaning and dry thoroughly before use.

Mattress parts to be cleaned	Recommended Cleaning Agents (General cleaning)
Top Cover *High MVP (Moisture Vapor Permeable) Material.*	Standard hospital detergents, Alcohol or Quaternary Ammonium based disinfectants, Chlorine based disinfectants containing up to 1000 ppm Chlorine, followed by rinsing with water and drying thoroughly before use.
	Decontamination: Blood spills/C-diff. etc
	Chlorine based disinfectants containing up to 10,000 ppm Chlorine. Dwell time on surface at 10,000 ppm of 2 minutes, followed by rinsing with water and drying thoroughly before use.
Base Cover, Air Cells, Foam Base	As procedures above.

Due to the variety of laundry equipment, chemicals and conditions in use, customers should satisfy themselves through pre-testing. It is essential that articles be thoroughly rinsed and dried after all cleaning procedures and before storage or reuse. Wet or damp PU surfaces are more prone to mechanical damage than when dry.

As stated above, after application of a suitable cleaner, the surface must be rinsed with water and dried before use. (Even if the cleaner instructions say that this is not required). This prevents a build up of chemicals on the mattress surface which could be reactivated during use and affect biocompatibility. The High MVP Coating may swell and change appearance during cleaning. This will recover after being thoroughly dried.

NOTE: *Continued use of high concentration, chlorine-based disinfectants may significantly reduce the performance and the working life of a coated material.*

NOTE: *On High Vapour Permeable covers, vapour from chemicals with small molecules can occasionally diffuse through the polyurethane membrane in a similar manner to water vapour. Any staining on the inside of the cover caused by such an occurrence is not due to any loss of liquid / microbial barrier properties of the fabric, and being cosmetic only, should not be treated as a cover failure as replacement is not required.*

Type of Cleaning	Parts to be cleaned
Routine Cleaning and Disinfection	▪ exposed mattress parts ▪ exposed SCU parts
Full Cleaning and Disinfection	▪ exposed mattress parts ▪ exposed SCU parts ▪ internal parts of mattress ▪ internal parts of cover

17.3.2 Routine Cleaning and Disinfection

Cleaning the mattress:

- Check mattress cover top for any signs of damage.
  Replace or repair and completely disinfect mattress cover top if damaged.
- Check inside of mattress cover top for signs of liquid ingress.
  Replace or clean and completely disinfect mattress cover top if damp inside.
- Leave mattress cover on mattress.
- Clean with 60 °C warm water and cleaning detergent.
- Rinse mattress with cold water.
- Let mattress dry or wipe dry.

- Wipe mattress with disinfectant.
- Rinse mattress with cold water.
- Let mattress dry or wipe dry.

Cleaning the SCU:
- Wipe SCU with disinfectant.
- Let SCU dry or wipe dry.

17.3.3 Full Cleaning and Disinfection

Cleaning the mattress:
- Deflate mattress and remove cover (see Removing the Mattress Cover).
- Check mattress cover top and base for any signs of damage.
  Replace or repair and completely disinfect mattress cover top and base if damaged.
- Check mattress cover top and base for signs of liquid ingress.
  Replace or clean and completely disinfect mattress cover top and base if damp inside.
- Clean all mattress cells and pipes with 60 °C warm water and cleaning detergent.
- Rinse mattress with cold water.
- Let mattress dry air dry or wipe dry.
- Wipe mattress with disinfectant.
- Rinse mattress with cold water.
- Let mattress dry air dry or wipe dry.

Cleaning the mattress cover:
- Remove cover (see Removing the Mattress Cover).
- If machine washing mattress top/base covers, the temperature should be raised during the wash cycle, to 65°C/149°F, for 10 -15 minutes, or 71°C/160° F, for 3 - 10 minutes, using hospital approved detergents and rinsing agents. (Note: maximum wash temperature 75°C/167°F).
- Dry cover in tumble dryer at low temperature.

Cleaning the air pipe:
- Wipe air pipe with cleaning agent or disinfectant.
- Let air pipe dry.

Cleaning the SCU:
- Remove filter.
- Wipe SCU and filter with disinfectant.
- Let SCU and filter dry.
- Reinsert filter.

17.4 Removing the Mattress Cover

- Carefully open zipper under side skirt of mattress cover on foot end of mattress.
- Remove top part of mattress cover.
- Undo corner toggles holding comforter cover and remove comforter cover.
  Inspect comforter cover and clean if necessary.
- Undo toggles holding top deck to foam base.
- Undo plastic clip next to air pipe inlet on base cover holding foam base to cover.
- Remove bottom part of mattress cover.

After cleaning the mattress cover:
- Reinstall mattress cover by reversing the process described above.
- Make sure all toggles are put back in their respective holes.

17.4.1 General guidance – Slippy Cover

WARRANTY: *Due to the nature and MVP (Moisture Vapor Permeability) rating of the Slippy Cover Material, the Warranty is 1 year. Chemical damage caused by using aggressive or incorrect cleaners will not be accepted under the warranty*

LIFESPAN: *Typically 50 cleaning cycles in accordance with manufacturers' instructions.*

- Do not use any strong acids or alkalines, (optimum pH range 6 – 8. Do not exceed pH of 9).
- Use only hospital-approved cleaners suitable for use on coated textiles and observe local directives concerning infection control.
- Do not use abrasive powders, steel wool, or other material and cleaning agents that might damage the mattress. Do not scrub mattress surface. Do not allow mechanical damage to occur, (e.g. Needle stick, scalpel/scissors cuts).
- Never use any corrosive or caustic detergents. Do not use cleaners containing Peroxide.
- Never use detergents that deposit calcium carbonate.
- Never use detergents with solvents that might affect the structure and consistency of the plastics (benzene, toluene, acetone, phenol, etc.).
- Use only hospital-approved cleaners and observe local directives concerning infection control.
- Always rinse with water after cleaning and dry thoroughly before use.
- Always refer to wash label and user guide for each system, as there may be specific instructions for the cover being used.

Mattress parts to be cleaned	Recommended Cleaning Agents (General cleaning)
Top Cover *High MVP (Moisture Vapor Permeable) Material* *Slippy Mattress Cover Top*	Standard hospital detergents or cleaners suitable for use on coated textiles, as described above. Chlorine based disinfectants containing up to 1000 ppm (0.1%) available Chlorine, followed by rinsing with water and drying thoroughly before use.
	Decontamination: Blood spills/C-diff. etc
	Chlorine based wipes containing up to 5500 ppm (0.55%) available Chlorine (e.g. Clinell Clorox wipes). Dwell time on surface at 5500 ppm of 3 minutes, followed by rinsing with water and drying thoroughly before use.

Due to the variety of laundry equipment, chemicals and conditions in use, it is the customers' responsibility to ensure compliance with manufacturers detailed cleaning instructions.

As stated above, after application of a suitable cleaner and after a suitable dwell time, it is essential that articles be thoroughly rinsed and dried before use. (Even if the cleaner instructions say that this is not required). This prevents a build up of chemicals on the mattress surface which could be reactivated during use and affect biocompatibility. Wet or damp PU (Polyurethane) surfaces are more prone to mechanical damage than when dry. The High MVP Coating may swell and change appearance during cleaning. This will recover after being thoroughly dried. (Air dry. Do not wipe aggressively). Before further use, the cover must be fully dry.

17.4.2 Machine Washing Symbioso Hi-MVP Slippy Mattress Cover

Machine wash top cover using hospital approved, detergent & rinsing agents. The detergent must not contain chlorine based bleach or peroxide. In order to kill bacteria, during the wash cycle the water temperature must be raised to 71 degrees C (160 degrees F) for 3 minutes, or 10 minutes at 65 degrees C (149 degrees F). Dry cover in tumble dryer at low temperature setting.

NOTE: *Constant use of high concentrations of Chlorine-based cleaners, or high PH value cleaners, may significantly reduce the performance and the working life of a coated material.*

NOTE: *Covers that have physical damage that would allow fluids to penetrate inside the mattress cover must not be re-used but disposed of as clinical waste.*

NOTE: *On High Vapour Permeable covers, vapour from chemicals with small molecules can occasionally diffuse through the polyurethane membrane in a similar manner to water vapour. Any staining on the inside of the cover caused by such an occurrence is not due to any loss of liquid / microbial barrier properties of the fabric, and being cosmetic only, should not be treated as a cover failure as replacement is not required.*

18 Troubleshooting

DANGER!

Risk of mortal injury due to electric shock!

- ➲ If a fault occurs, have the electric motor, power box or other electrical parts repaired by qualified personnel exclusively.
- ➲ Do not open the protective covers of the electric motor or the power box.

Error/Fault	Cause	Solution
Adjusting with position buttons not possible	GO button was not pressed	Press the GO button.
	Function disabled on supervisor panel	Enable disabled function.
	Actuators have no power, Defective actuators, Defective battery	Check the mains connection. Notify the service department.
	Plug inserted incorrectly	Insert the mains plug correctly.
	Faulty power source.	Notify the service department.
	Faulty control element	Notify the service department.
Faulty mattress platform height/tilt adjustment	There is an object on the undercarriage cover	Remove the object.
	Function disabled on supervisor panel	Enable disabled function.
	Actuators have no power, Defective actuators, Defective battery	Check the mains connection. Notify the service department.
	Plug inserted incorrectly	Insert the mains plug correctly.
	Faulty power source	Notify the service department.
	Faulty control element	Notify the service department.
Lowering backrest from the upright position not possible	There is an object under the backrest or in the drive mechanism	Remove the object.
	Locking handle is defective	Notify the service department.
Adjusting siderails not possible	The siderail lock is dirty	Clean the locking mechanism.
	Locking handle is defective	Notify the service department.
Faulty brakes	Dirt blocking brakes mechanically	Clean the brake system.
	The brake mechanism is defective	Notify the service department.
Mattress not inflating	SCU mains switch turned off No power to bedframe Mains plug inserted incorrectly Faulty power source Faulty SCU Air leaking CPR valve leaking or open Air pipes blocked Mattress partialy inflated	Turn switch on. Green mains power switch will illuminate. Check mains connection. Insert mains plug correctly. Notify the service department. Notify the service department. Check mattress pipe connection. Check CPR valves closed. Check piper are not trapped or kinked.
Unable to change mode or pressure	Go button was not pressed	Press the GO button
Fault symbol illuminated & audio alarm	One time exception fault Persistent reoccuring fault	Switch off SCU & switch back on, reset to see if failt is self-cleared. Notify service department, mute audio alarm.
CPR symbol illuminated	In CPR mode	Press CLP or Max to cancel

19 Maintenance

WARNING!

Risk of injury when working on the bed!

- ➲ Ensure that the bed is disconnected from the mains connection prior to assembly, disassembly and maintenance.
- ➲ Ensure that the castors are locked prior to assembly, disassembly and maintenance.

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 seller´s customer service or trained hospital technicians.
- ➲ Do not use the bed if any malfunction or defect occurs. In this case contact manuf- acturer or service organisation immediately.
- ➲ Please report any abnormal operation, noise or loose components to Linet or

NOTE *Linet ® recommends attaching the maintenance plaque to the bed.*

- ❖ To keep the bed functioning correctly, ensure that the following maintenance work is performed at the correct intervals.

19.1 Maintenance every 12 months

Please refer to the Linet Periodic Preventative Maintenance and Safety Check Manual.

19.1.1 Spare Parts

The product label is located on the inside of the longitudinal rail of the mattress platform frame. The product label contains information for claims and ordering replacement parts.

Information about spare parts is available from:

- Seller´s customer service
- Sales
- Our technical support department

19.1.2 Completeness

- ❖ Perform a visual check (with delivery note if necessary).
- ❖ Have any missing parts replaced.
- ❖ Have any missing parts replaced.

19.1.3 Wear

- ❖ Check all bolts and tighten if necessary.
- ❖ Check all locking mechanisms.
- ❖ Check the bed for wear, scratches or rub marks. Eliminate the cause if necessary.
- ❖ Have any defective parts replaced.

19.1.4 Functioning

- Check that all bed adjustments reach the maximum position.
- If necessary, clean, lubricate or replace any worn spots and parts.

19.1.5 Electric Control

Plug connections:

- Replace O-rings on connectors.
- Check plugs connections for dirt and defects.
  Clean or replace if necessary.
- Check that the plug connectors are properly seated.

Motors:

- Check motor movement (adjust bed positions).
  Check for incorrect and interrupted movements.
  Have defective motors replaced if necessary.
- Check cables for signs of wear and entanglement.
  Install a new cable or have it replaced if necessary.

Battery:

- Check that the battery is working properly (disconnect the bed from the mains).
  Have the battery replaced if necessary.

Fuses:

- Have fuses changed only by qualified and trained service technicians authorised by the manufacturer.
- Use the following fuse types only:
  - T2A (for 230 V input)
  - T4A (for 100 – 127 V input)

19.1.6 Castors

- Clean the castors completely.
- Grease the castors if necessary (Caro EP 2 by DEA or an equivalent grease).
- Check that the castors work properly.
  - Forward Movement
  - Unrestricted Movement
  - Braked
- Have the brakes adjusted if necessary.
- Have any defective castors replaced.

19.1.7 Accessories

- Check that all accessories (for example, lifting pole, siderails, infusion stand, etc.) are working properly.
- Replace if necessary.

19.2 Safety Checks

WARNING!

Risk of injury due to incorrect safety checks!

- ➲ Ensure that safety checks are performed exclusively by seller´s customer service or autho- rised personnel (certified by the manufacturer).
- ➲ Ensure that the safety checks are recorded in the service and maintenance log.

WARNING!

Risk of injury due to defective bed!

- ➲ Have a defective bed repaired immediately.
- ➲ If the defect cannot be repaired, do not continue to use the bed.

In accordance with the Medical Devices Operator Ordinance, the operator is required to perform a technical safety check on the hospital bed every 12 months.

NOTE *On request, the manufacturer will provide 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.*

19.3 Maintenance Symbioso

Check the following at least every 12 months:

- ❖ Check inside and outside of mattress and outside of SCU for mechanical damage and signs of severe wear and tear.
- ❖ Check if mattress and SCU are fully operational.
- ❖ Perform electrical safety checks in accordance with local safety regulations.

Check the following every month:

- ❖ Check external air filter in side of SCU for dust and dirt.
  If dust or dirt is visible, replace filter.

- ❖ Replace any damaged parts immediately with original spare parts.
- ❖ Ensure that maintenance and installation are performed only by qualified personnel trained by the manufacturer.

NOTE *Linet ® provides service documentation for qualified personnel.*

19.4 Linet ® Service

Our responsible Linet ® Service partners will ensure your Linet ® products are up and running when you need them. For more information on available service support and contract offerings, please contact us at 877-815-8895 and ask for technical support. Linet ®'s nationwide network of highly skilled service providers that are equipped to service and maintain your Linet ® equipment at the highest level.

20 Storage (Symbioso)

When SCU is not in use:

- Switch off SCU using green illuminated power switch on side of SCU.
- Log off using Alarm mute button.

When mattress is not in use:

- Unclip both air pipes.
- Undo webbing strap next to air pipes.
- Put air blanking plugs to SCU air outlets.
- Make sure mattress has been cleaned and is completely dry inside and out (see Cleaning/Disinfection).
- Deflate mattress.
- Roll mattress up carefully to get air out completely.
- Place mattress in storage bag.
- Store in a dry and safe place and keep away from sharp objects.

21 Disposal

21.1 Environment Protection

Linet ® is aware of the important role that the protection of our environment plays for future generations.
The materials of this product are environmentally compatible. It does not contain hazardous substances on the basis of cadmium, mercury, asbestos, PCB or CFC. The noise emission and the vibrations meet the directives for premises. None of the wooden parts are made of tropical woods (for example, mahogany, jacaranda, ebony, teak, etc.) or of woods from the Amazonian region or similar rainforests.
The packaging materials are produced according to the respective directives. Dispose of the packaging material according to the symbols and by delivering it to an authorised person.
The product consists of recyclable steel, plastic and electronic components.



21.2 Disposal

The materials of the appliance are reusable. By reusing, material recycling or other forms of use of old appliances you give an important contribution to the protection of our environment.

- Ask the responsible environmental protection authorities for the appropriate disposal point.
- Observe local and country-specific specifications for disposal.

21.2.1 Multicare

Outside Europe

- Dispose of the bed or its components in accordance with local laws and regulations:
  - After using the bed
  - Following maintenance and installation work
- Hire an approved waste disposal company for disposal.

21.2.2 Symbioso

To dispose of the appliance (SCU):

- When you dispose of your appliance (SCU) do not put it into the household waste.
- Send the appliance (SCU) to the recycling of electrical appliances.

To dispose of the battery (applies only to Symbioso):

- Send the battery to the recycling of Ni MH batteries.

22 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. Consult the warranty provided for your country.

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

- Do not continue to use the bed.

23 Technical Specification

23.1 Accuracy of displayed values

Weight (integrated scales):

- 1,1 lbs

Tilt angle:

- +/-3°

23.2 Mechanical Specifications (Multicare)

Dimensions With Folded-up Siderail	 215 cm x 105 cm
Mattress platform Extension	0 cm - 22 cm
Recommended Mattress Size	208 cm x 86 cm
Max. Mattress Height	23 cm
Bed Height	44 cm - 82 cm
Siderail length Head section Central section	 53,9 cm 100,4 cm
Castor (diameter)	15 cm
Maximum Backrest Angle	70°
Maximum Thighrest Angle	30°
Maximum Calfrest Angle	38°
Lateral Tilt	30°
Trendelenburg Position	13°
Anti-Trendelenburg Position	16°
Height of Siderails (above Mattress Platform)	45 cm
Weight (Basic Equipment)	224 kg
Safe Working Load	250 kg
Max. Lifting Pole Load	75 kg
Maximum patient weight Application environment 1, 2 Application environment 3, 5	 185 kg 215 kg

***** *In case the accessories and mattress weights more than 50lbs then it is necessary to deduct complete weight of accessories and mattress from SWL to recalculate new maximum weight of patient. To check complete weight of accessories and mattress use bed scales system.*

23.3 Conditions environnementales (Multicare LE)

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

23.4 Electrical Specifications (Multicare LE)

Input Voltage	120 V~, 50/60 Hz
Maximum Power Input	max. 370 VA
Ingress Protection (EN 60529)	IPX4
Safety Class	Class I (with type B applied parts)
Electrical Motor Operating Time	max. 2 minutes ON / 18 minutes OFF
Battery Fuse	Pb AKU 2 x 12 V / 1,2 Ah / Fuse 15A 2x T4.0A L 250 V for 100-127 V version

23.5 Mechanical Specifications (Symbioso)

Dimensions	
▪ Mattress (inflated)	80,31 in x 34,64 in x 9,05 in
▪ SCU	14,17 in x 8,66 in x 3,93 in
Weight	
▪ Mattress (inflated)	20,9 lbs
▪ SCU	7,7 lbs
Inflation time after storage CPR deflation time	15 min max. 30 s (electric or manual)
Environmental conditions - Operation	
▪ Temperature	+50°F - +104°F
▪ Humidity	30 – 75%
▪ Atmospheric Pressure	70 – 106 kPa
Environmental conditions - Storage and Transport	
▪ Temperature	-40°F - +158°F
▪ Humidity	10-100% (non-condensing)
▪ Atmospheric Pressure	70-106 kPa
Max. mattress load	550 lbs
Remains inflated in Transport Mode for	min. 12 hours (when starting from Max Inflate Mode)
Noise level	NC30 (suitable for use in quiet domestic environment) max. 45 dBa (normal operation without alarm)

23.6 Electrical Specifications (Symbioso)

Supply voltage Model 110 V	110 - 1270 V~, 50/60 Hz
Nominal power Model 110 V	max. 40 VA (when operating from mains supply)
Fuse Model 110 V	2x T1AH anti-surge fuse
Electrical safety class	Class 1 with applied parts type B
Electrical safety	In conformity with EN 60601-1

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

Identification of applied parts (Type B)

- mattress platform frame, covers and all movable parts
- head and foot end
- siderails
- Mobilift handles
- Handset

23.7 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 Supervisor 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 bed Multicare LE, 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 19 Maintenance in order to maintain the basic safety with regard to electromagnetic disturbances for the expected service life.

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**

Manufacturer instructions – electromagnetic susceptibility

Immunity Tests	Compliance level
Electrostatic discharge (ESD) IEC 61000-4-2	± 8 kV for contact discharge ± 15 kV for contact 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 % U_T; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° a 315° 0 % U_T; 1 cycle and 70 % U_T; 25/30 cycle Single phase: at 0° 0 % U_T; 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)*