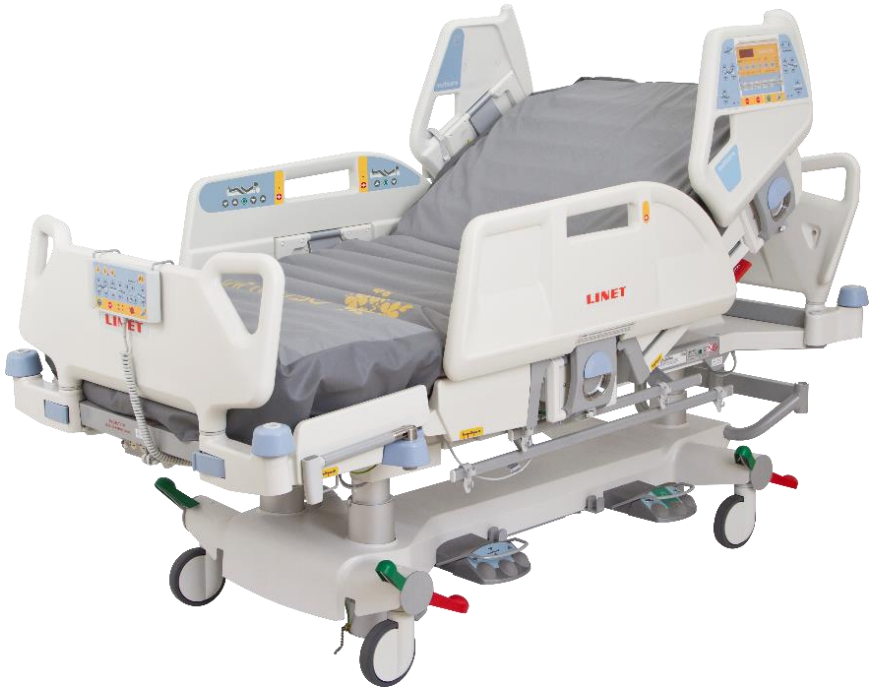
# User Manual and Technical Description




# Multicare LE

Positionable bed for intensive care and integrated mattress replacement system for Multicare LE

CE 1014

**D9U001MC5-0101**

**Version: 06**

**Publication Date: 2018-08**

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Related links: www.linet.com

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# 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

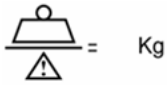
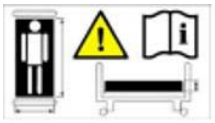
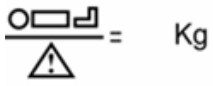
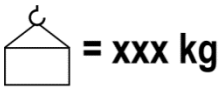
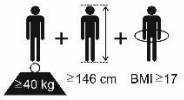
**Structure of bulleted lists:**

- List level 1
  - List level 2

**Structure of numbered lists:**

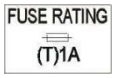
a. List level 1
b. List level 1
   1. List level 2
   2. List level 2

## 1.3 Symbols and Labels on the Product

| | |
|---|---|
|  | Thermal protection for transformer |
|  | Possible risk |
|  | Only suitable for indoor use |
|  | Applied parts type B |
|  | Safety isolating transformer, general |
|   | CE mark |
|  | 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 treatment |
|  | WEEE symbol (recycle as electronic waste, do not put into the household waste) |

## 1.4 Symbols and Labels on the Product (Symbioso)

| | |
|---|---|
|  | Read instructions for use. |
|   | 2x T1AH anti-surge fuse (250 V, type 5x20 mm) |
|  | Alternating current |
|  | Applied parts type B |
|  | Possible risk |
| I<br>O<br><br>WARNING! Mains switch for mattress only! | Mains Switch<br>I: On (connected to the mains supply)<br>O: Off (disconnected from mains supply)<br>Device is connected to mains when green indicator is on.<br>Indicates that the mains switch is for Symbioso only, not for Multicare or the entire system. |

## 1.5 Serial Label with UDI

The label is located on the case of the SCU (System Control Unit) under the foot section of the bed.

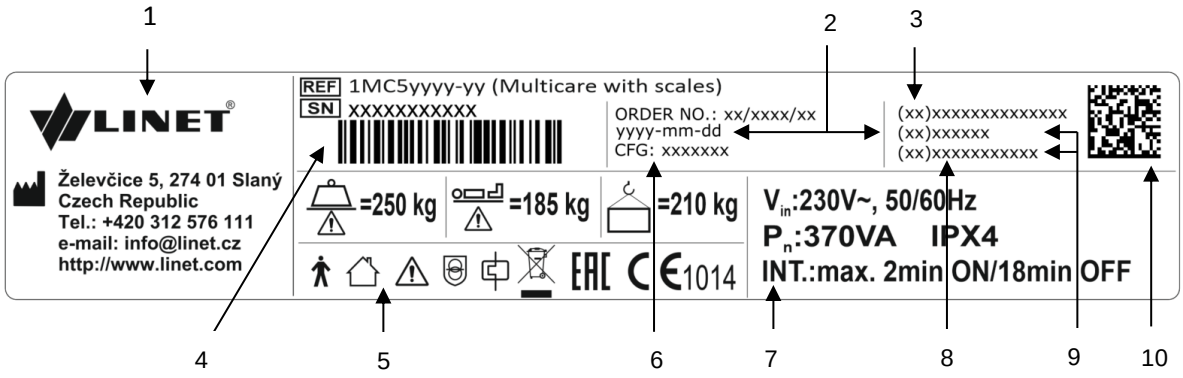



Fig. *Serial Label with UDI (Multicare LE with scales)*

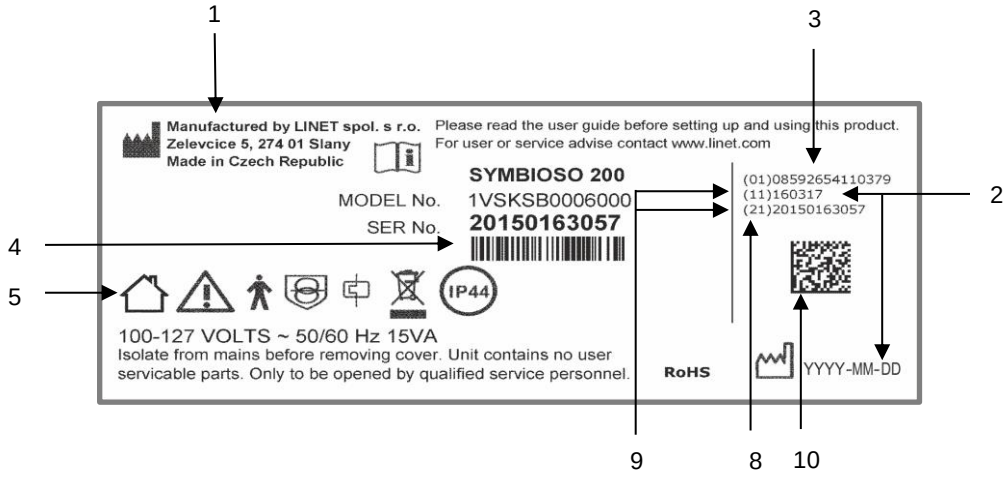



Fig. *Serial Label with UDI (Symbioso - SCU)*

| | |
|---|---|
| 1 | Address of Distributor |
| 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** |

## 1.6 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<br>– The mattress support platform, including the individual parts, has to be in a horizontal (level - 0°) position.<br>– The siderails are always locked in the upper position.<br>– The basic position of the integrated extension. |

## 1.7 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.<br>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.
- 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 trea- ting 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 personnel.
- 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 to life due to electric shock!**
To ensure the bed's class I protection against electric shocks:

- Ground the mains.
- Use only Hospital Grade or Hospital Only receptacles for grounding.

Multicare 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. a storm).

Multicare 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:**

- EN 60601-1:2006/A1:2013
- EN 60601-1-2:2015
- EN 60601-2-52:2010
- EN ISO 14971:2012
- 93/42/EEC
- 90/384/EEC
- 2011/65/EU

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

- EN ISO 9001
- EN ISO 14001
- EN ISO 13485

## 3.2 Symbioso

**The mattress replacement system complies with the following standards:**

- EC directive 93/42/EEC for medical devices

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

- EN ISO 9001
- EN ISO 13485
- EN ISO 14001

**The product complies with the requirements of:**

- EN SO 14001
- 2011/65/EU (RoHS)
- EN 60601-1:2006/A1:2013
- EN 60601-1-2:2007
- EN 60601-1-6:2010
- EN ISO 10993-5:2009

# 4 Functioning

## 4.1 Specifications of Use

Symbioso is an integrated mattress replacement system for Multicare hospital beds.

**Multicare LE and Symbioso are suitable for:**

- patients at moderate risk levels
- patients with grade 3 or 4 ulcers

in combination with other nursing interventions.

- ❖ Have Multicare LE and Symbioso used only by or under supervision of trained and qualified nursing personnel.

**Multicare LE and Symbioso 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 LE beds
  - pressure ulcer prevention
  - for patients requiring skin micro-climate management

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

## 4.2 Contraindications

The Symbioso is contraindicated for patients with **cervical traction** or **unstable**:

- spinal fractures
- spinal cord injury
- fractures at risk of complication by a moving support surface

**Warning**

**Risk of injury due to incorrect use!**

Do not use CLP mode for patients undergoing cervical traction.

Before placing a patient on a Symbioso, always have a qualified person perform a risk assessment to ensure that the support provided is appropriate and fulfils the applicable local stipulations.

# 5 Scope of Delivery and Bed Variants

## 5.1 Scope of Delivery

**Delivery:**

- Upon receipt, check that the shipment is complete as specified on the delivery note.
- Notify the carrier and supplier about any deficiencies or damages immediately as well as in writing or make a note on the delivery note.

- Multicare hospital bed
- Mattress with two piece cover - Applied part type B
- SCU (System Control Unit) - Applied part type B
- User Manual

## 5.2 Bed Variants

s = standard

o = optional

**Optional bed features:**

- Symbioso
  - with Symbioso
  - without Symbioso

**Optional bed features:**

- Undercarriage of the bed
  - Standard undercarriage – under bed clearance under foot columns 44mm (s)
  - Higher undercarriage – under bed clearance under foot columns 69mm (o)
- Scales
  - with scales (with bed exit alarm)
- Castors
  - Tente Integral 150 mm double castors (s)
  - Tente Integral 150 mm single castors (o)
  - retractable fifth castor (o)
- Control Elements
  - Multiboard in both head sections of 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 controls – height adjustment (o)
  - foot controls – lateral tilt (o)
  - patient control elements integrated in both middle sections of the siderails (s)
  - variant with no patient controls in siderails (o)
  - illuminated patient keyboards (0)
- 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)
- EMR ready bed (o)
- Nurse Call

# 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).
- Install equipment and accessories (see Assembly).
- In case of delivery with dismantled bed ends, mount the head and foot ends (see Assembly).
- 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.

## 6.3 Removing Isolating Foil

**Warning**

**Risk of injury when removing isolating foil!**

- Wear gloves when removing isolating foil.

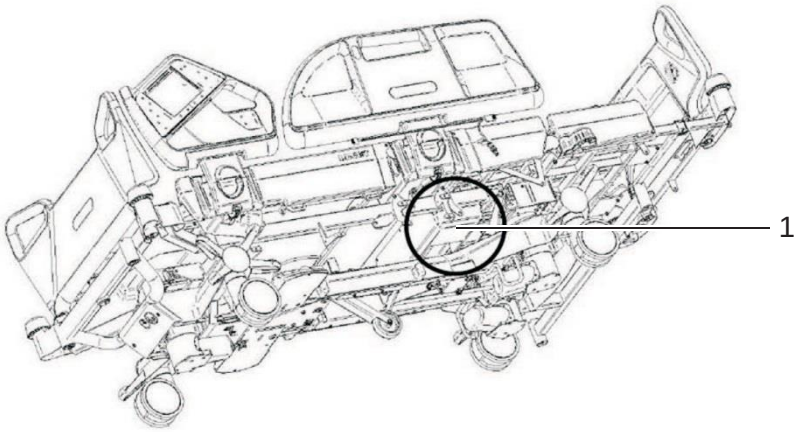



Fig. 2 Removing Isolating Foil

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

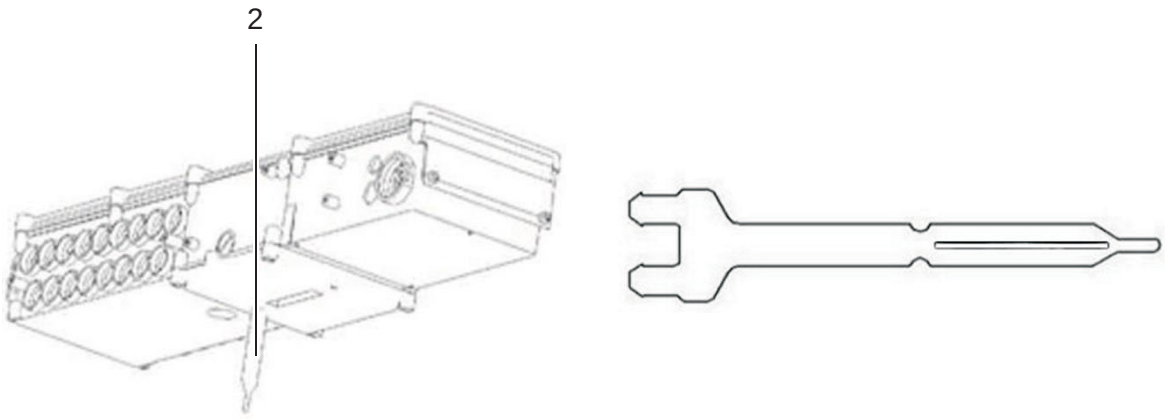



Fig. 3 Isolating Foil

# 7 Assembly

| | |
|---|---|
|  **Warning** | **Risk of injury when working on the bed!**<br>❖ Ensure that the bed is disconnected from the mains connection prior to assembly, disassembly and maintenance.<br>❖ Ensure that the castors are locked prior to assembly, disassembly and maintenance. |
|  **Caution** | **Material damage due to incorrect assembly!**<br>❖ Ensure that assembly is performed by seller´s customer service or trained hospital personnel only. |

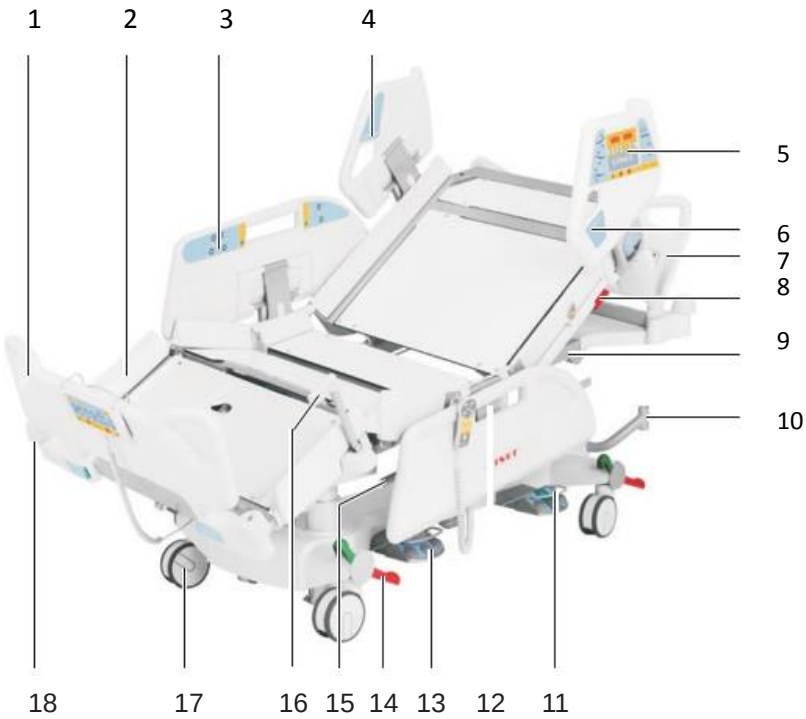



Fig. 4 Overview of Multicare

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. Castors Ø 150 mm
18. Bumpers

**NOTE** For safe, easy handling, LINET® recommends that two technicians assemble the bed.

## 7.1 Bed Ends

Fig. 5 Locking the 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.

## 7.2 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.

# 8 Symbioso Description

## 8.1 Mattress and Cover (type B applied part)

The mattress consists of two decks that are connected with quick-release fixation toggles and polyurethane loops. A two part waterproof cover encloses the mattress decks.

### 8.1.1 Top Deck

The top part consists of 6 separate air modules for easy and cost-effective replacement.

**CLP (Constant Low Pressure):**

- 6 modules
- automatic air pressure adjustment mattress

### 8.1.2 Bottom Deck

The bottom part consists of a medical-grade foam base which provides support for the patient if the air mattress is deflated. The foam base is 7,5 cm thick and completely enclosed in a waterproof cover.

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.

it is possible to remove the foam base for cleaning or replacement.

**Torso/head cells:**

- 6 cells
- side formers
- tubes for minimising air loss

**Thigh/seat cells:**

- 4 cells
- side formers
- tubes for minimising air loss

**Calf/foot cells:**

- 4 cells

**Heel sore prevention cells:**

- 4 cells

### 8.1.3 Cover

**A two part cover encloses the mattress decks and consists of:**
A top cover of two-way stretch, waterproof and vapour-permeable, polyurethane coated nylon, fitted with a flap to cover the 360-degree interchangeable zip.

**Caution**

**Mattress damage due to incorrect handling!**

- The top cover flaps must **not** be used to reposition the mattress along the bed platform, or for **any** lifting purposes.

A base cover of heavyweight non-stretch PVC coated polyester, fitted with a quick release securing strap, to prevent the mattress shifting if the head or foot boards are removed. Two re-positioning straps are also fitted either side of the base cover, to aid repositioning of the mattress along the bed platform if necessary.

**Caution**

**Mattress damage due to incorrect handling!**

- These straps are **not** designed for lifting the mattress with the patient on the mattress, or for emergency evacuation.

## 8.2 SCU (System Control Unit)

The SCU (System Control Unit) is installed under the leg section of the bed frame. It is possible to have the Multicare LE bed delivered with the SCU factory-fitted, or to have it retrofitted by approved service personnel. The SCU is equipped with 2 air connector sealing plugs.

- Connect sealing plugs to SCU air outlets to prevent any ingress of dirt or fluids.

**Connection**

Multicare LE is equipped with a dedicated power outlet at the auxiliary power distribution point.

- Connect SCU to power outlet using its integrated power cord If the Symbioso mattress has been removed from the Multicare.

**Control**

The SCU is operated via the Multiboard controls.

**NOTE** When removing the air mattress, it is sufficient to switch off the SCU using the ON/OFF switch on the side (see Transport Mode/Power Failure).

**Alarm system**

The SCU is equipped with a comprehensive alarm system which detects any problems with the system perfor- mance.

The alarm system

- gives audible and visual alarms via the Multiboard if a problem requires immediate action.
- stores information for the service personnel to review later.

### 8.1.1 Replacing the mattress

When replacing the Symbioso mattress by a standard mattress, it is necessary to remove Symbioso.

- Switch OFF the SCU.
- Remove Symbioso.
- Place standard mattress on bed.

**NOTE** *Disconnect the two mattress air pipes from the SCU, then put sealing plugs into air outlets before removing the Symbioso and fitting the standard mattress.*

# 9 Installation Symbioso

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

## 9.1 Installation of Mattress

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

Fig. 7b Colour-coded Air Pipes (Symbioso 200)


Fig. 8 CPR Strip

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

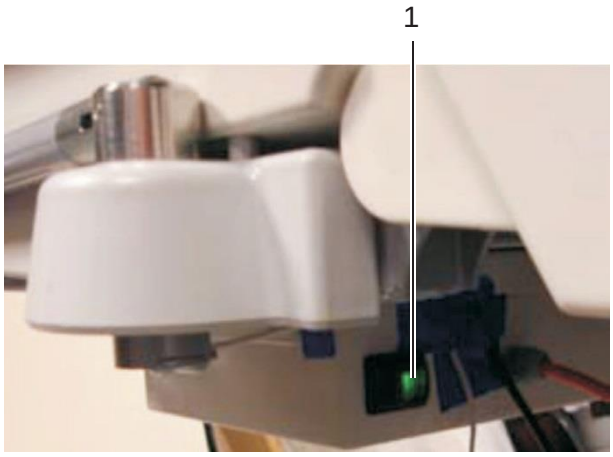



Fig. 9 Power Switch

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

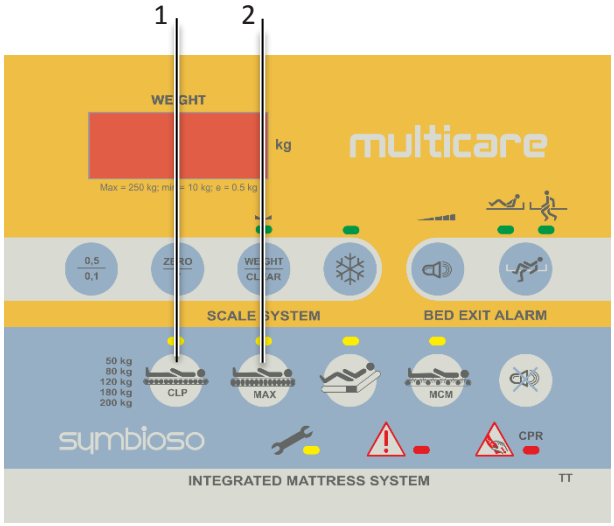



Fig. 10 Selection Button

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.

**Caution**

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

- Symbioso must be inflated before patient is placed on 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. 11 *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 authorised by Linet ®.

# 10 Operation

## 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 the head and foot boards can be removed.
- Check all of the functions on the control elements (Multiboard etc.).
- Check that the siderails function properly.
- Dispose of all packaging (see Disposal).

**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 Mover unconnected for 24 for the dif- ference to balance itself.

## 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 can not 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 only by qualified personnel.
- only 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.

**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.
- 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 sections of head siderails
- Additional supervisor panel
- Handset
- Handset with adapter for easy connection (Plug and Play)
- Handset with illuminated buttons and adapter for easy connection (Plug and Play)
- Foot controls – height adjustment
- Foot controls – lateral tilt
- 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 operates the Multiboard.

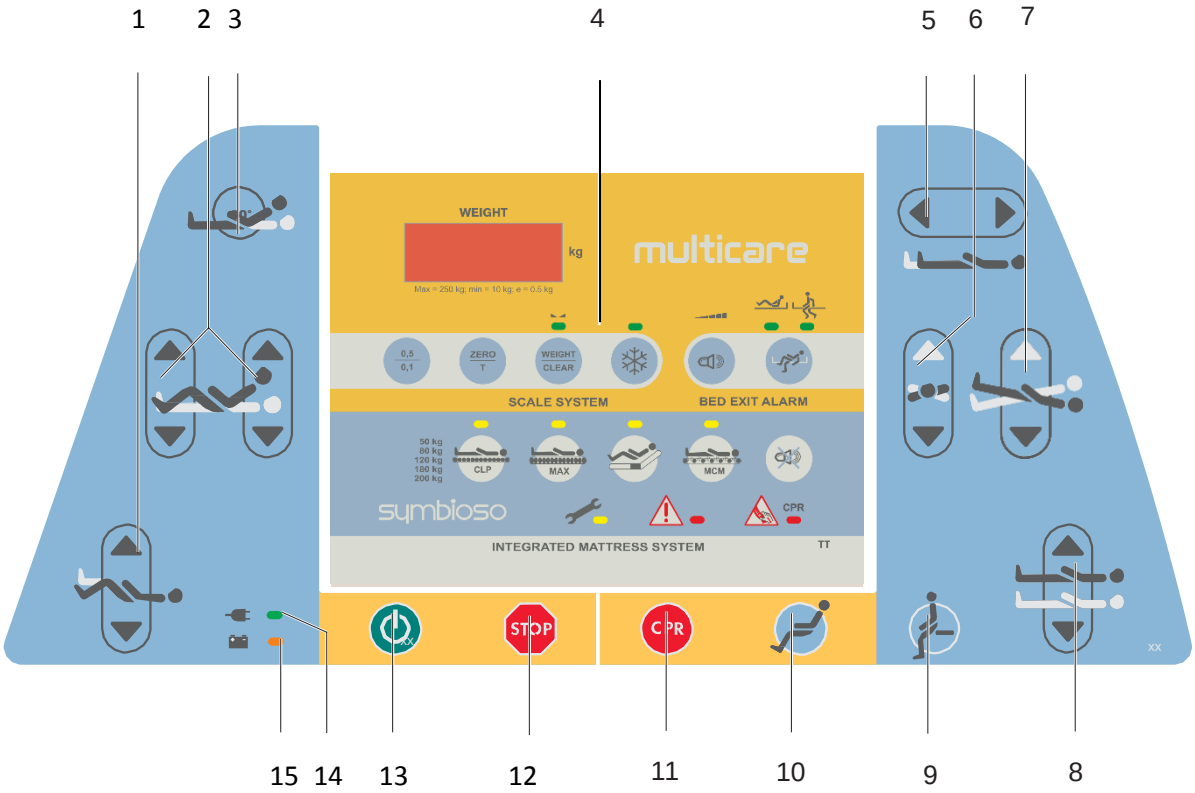



Fig. 12 Multiboard

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 central STOP button **12** immediately stops all 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 will remain active for 3 minutes.

**During this time the following is possible:**

- Adjust individual mattress platform elements by pressing the corresponding function buttons.
- Disable 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.

**To set a position:**

- Activate the keypad by pressing the GO button.
- Press and hold respective 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 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.

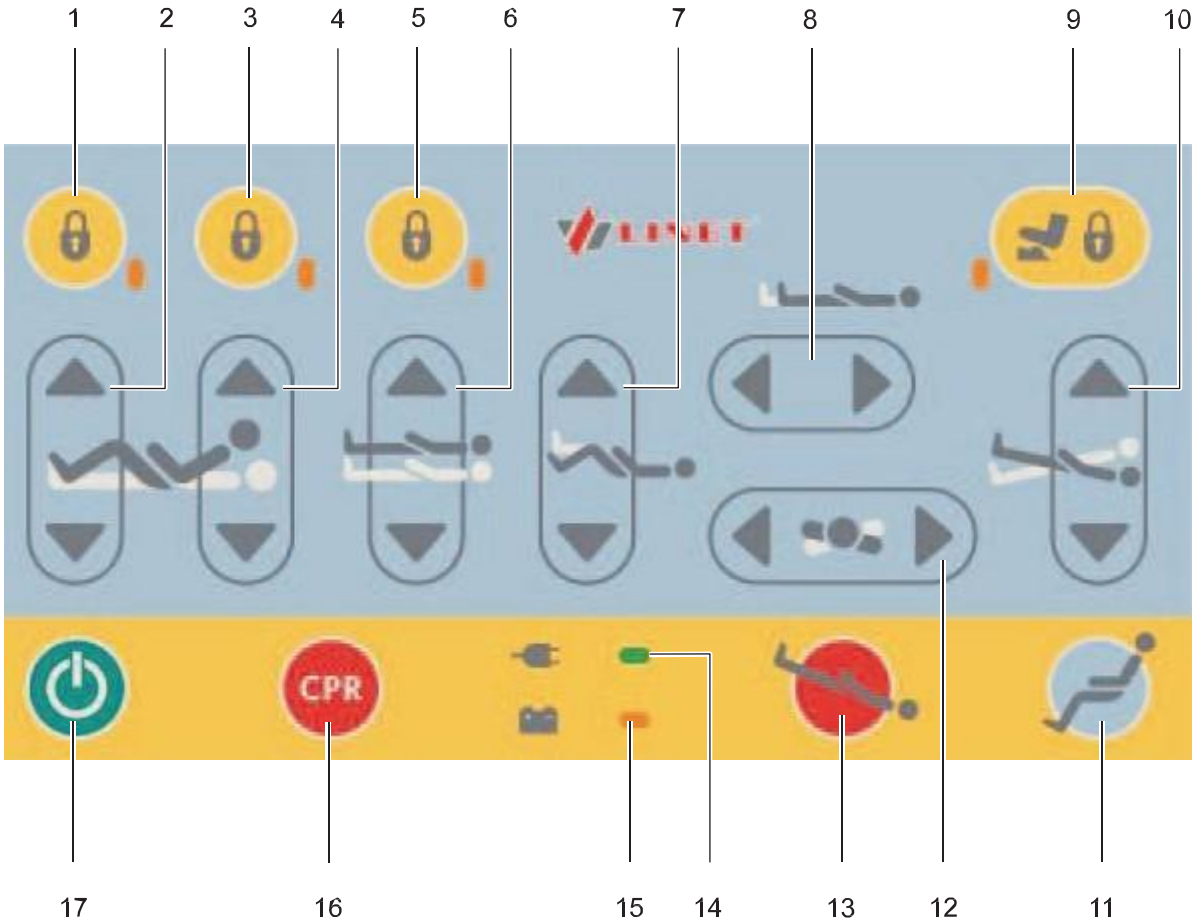



Fig. 13 Additional Supervisor Panel

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 Lateral Tilt
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.

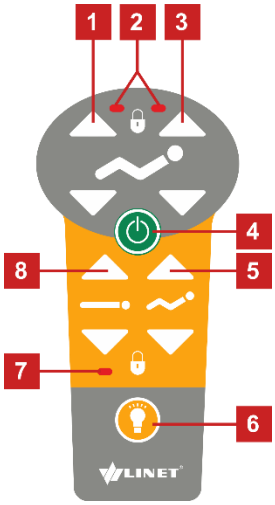



Fig. 14 Handset

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

**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:**

- Disabling 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).

## 11.4 Foot Control Bed Height

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


Fig. 15 Foot Control Bed Height

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.*

### 11.5 Foot Control Lateral Tilt

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

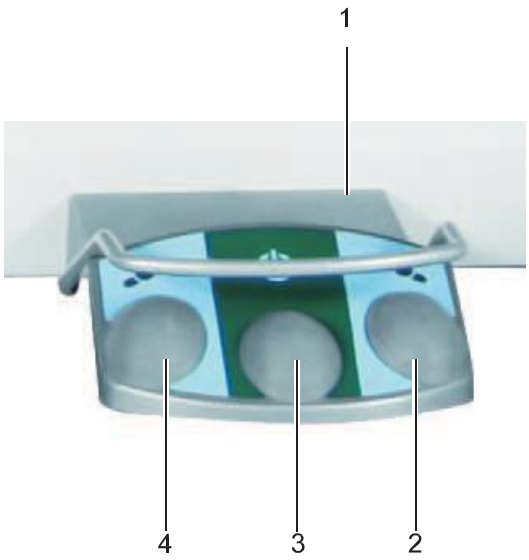



Fig. 16 Foot Switch Lateral Tilt

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.

## 11.6 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.


Fig. 18 Releasing the Backrest

1. Release Handle

**Set the position as follows:**

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

## 11.7 Siderails

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 siderails are components of the bed. A pneumatic spring supports the operation of the split siderails. The nursing personnel are responsible for the siderails being folded up while the patient is in bed. The correct placement of handset is shown at Fig. 19.

Fig. 19 Fold up the Split Siderail

**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.

## 11.8 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.
- 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 only by nursing personnel and by at least 2 persons.

**Castor control**

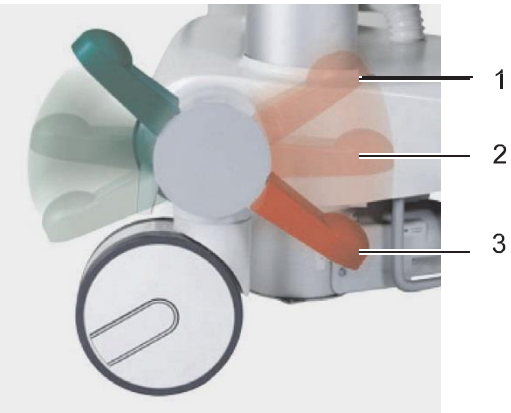



Fig. 20 Positions of Castor Control Lever

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.

**Bed transport:**

Fig. 21 Bed Transport

**Transporting the bed:**

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

### 11.8.1 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.

### 11.8.2 Retractable 5th wheel i-Drive® (optional)

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

If the bed is plugged in, the 5$^{th}$ wheel automatically retracts. In this position, the 5$^{th}$ 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

## 11.9 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. 22 Mobi-Lift® Support Handle

### 11.9.1 Using the Support

**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.

## 11.10 Accessories

**Risk of injury due to incompatible accessories!**

- Use original accessories from the manufacturer only.

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

### 11.10.1 Lifting Pole

**To ensure safe use of the lifting pole:**

- Never exceed the maximum load of 75 kg.
- 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 that you replace the plastic grab handle every four years.

### 11.10.2 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

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 exclusively 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 (44.1 lbs).

Fig. 23a Infusion Stand

Fig. 23b *Infusion Pump – Correct Fitment*

### 11.10.3 Accessory rails

**Load capacity:**

- Maximum load of 5 kg without leverage
- Maximum load of hook pair 10 kg

**Accessories for hanging on the accessory rail:**

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

Fig. 24 Accessory Rail

### 11.10.4 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.

### 11.10.5 Stabilizing Pads for Lateral Tilt

The stabilizing pads ensure a stable position of the patient when the bed is tilted laterally in order to prevent extubation or disconnection of IV lines or other equipment.

**Stabilizing pad set:**

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

❖ Always use LINET® stabilizing pads to position the patient in the centre of the bed when it is tilted laterally.

**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. 25 Stabilizing Pads

### 11.10.6 Ventilation Circuit Holder

The ventilation circuit holder prevents an extubation.

- Always use a LINET® ventilation circuit holder to prevent extubation when the bed is tilted laterally.

**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 part of the ventilation circuit is disconnected.

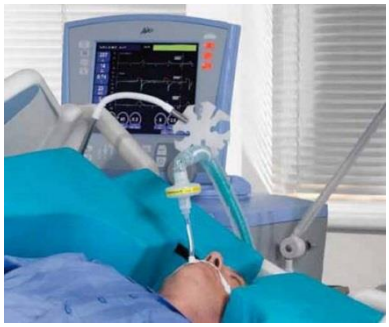


Fig. 26 Ventilation Circuit Holder

### 11.10.7 Monitor Tray

The monitor tray is suitable for transporting monitors with a weight of up to 15 kg.
**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. 27 Monitor Tray

### 11.10.8 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 15 kg (33.07 lbs) and a volume of 5 litres.

**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. 29a Oxygen Bottle Holder A

**Version B**

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

Fig. 30a *Oxygen Bottle Holder B - correct fitment*

Fig. 30b *Oxygen Botle Holder B - incorrect fitment*

**Version C**

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

Fig. 31 Oxygen Bottle Holder C

### 11.10.9 Protector

**WARNING!**

**Risk of injury due to the patient falling off the bed!**

- ➲ Ensure that the Protector is installed securely.
- ➲ Always check that the side rails are properly locked.

The Protector is an optional accessory for the Multicare LE bed. The main purpose of the Protector is to reduce the risk of patients falling off the bed.

The Protector is not included in the standard bed equipment and must be ordered separately. The Protector can be used with expanded or standard beds.

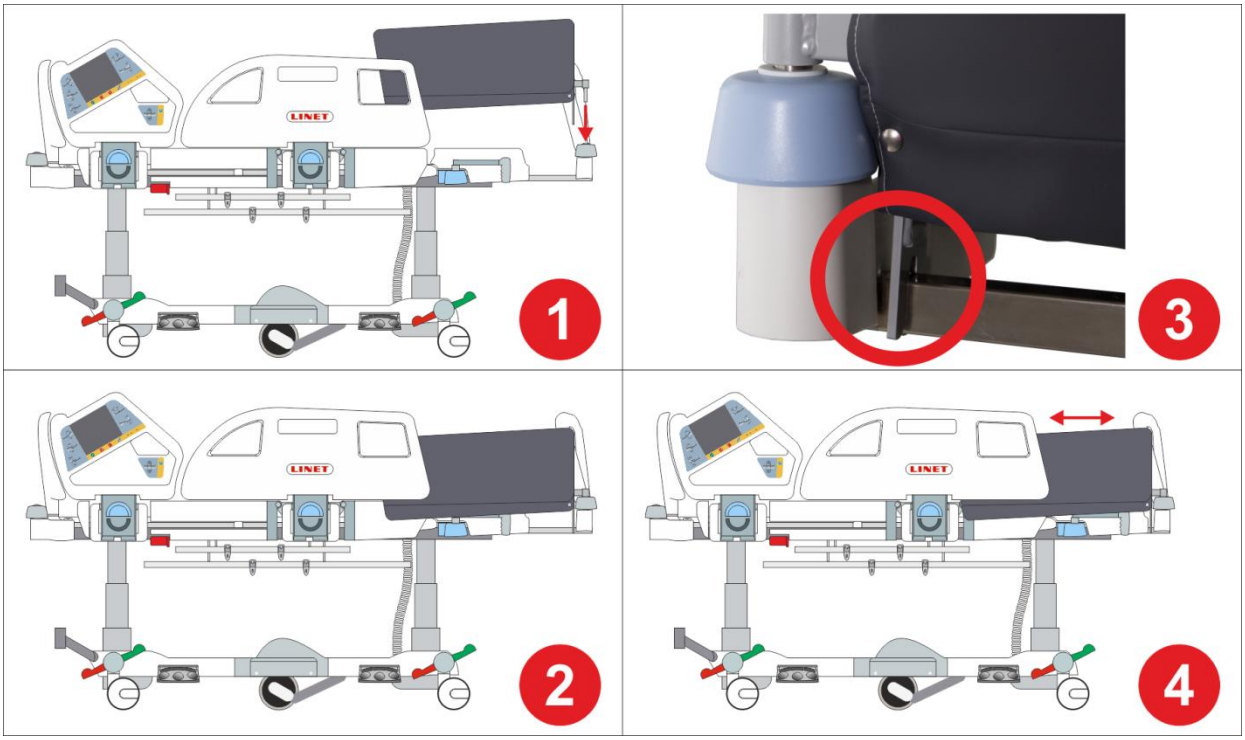



Fig. 32 Protector

1. Inserting the Protector into the casing in the protective ring on the corner
2. The Protector inserted in the casing
3. The fixing element attached to the telescopic profile of the bed extension
4. The Protector attached to the Multicare bed (The Protector can also be used on expanded beds.)

**Attach the Protector to the bed as follows:**

- ❖ Insert the Protector pin into the casing in the protective ring at the corner of the foot end of the bed (**1**).
- ❖ Ensure that the fixing element is secured to the telescopic profile of the bed extension (**3**).

**Remove the Protector from the bed as follows:**

- ❖ Grasp the upper end of the Protector.
- ❖ Remove the Protector from the casing.

# 12 Using Symbioso

## 12.1 Preparing the Bed for the Patient


**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.


**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.


**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.

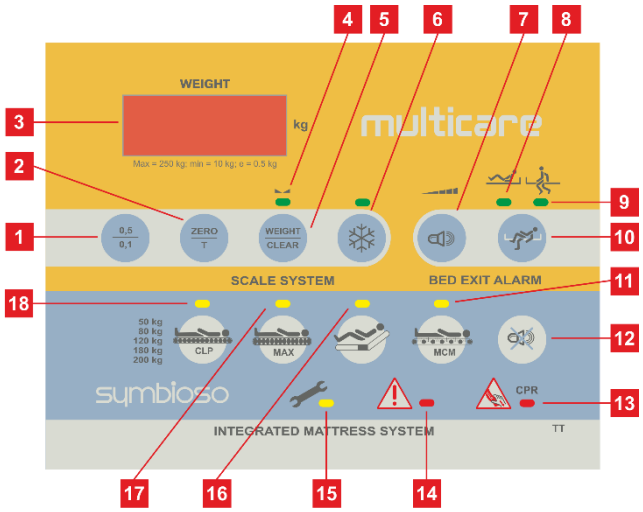
**For an ideal lying position:**

- 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 (WS 17)

## 13.1 Control Panel Scales

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.




1. Indicated Value Switch Button
2. Button Zero/T
3. Display
4. Weight balance indicator
5. WEIGHT/Clear button – cancelling the activated function
6. Button Hold
7. Button Bed Exit Alarm volume
8. Inner zone indicator
9. Outer zone indicator
10. Button Bed Exit Alarm
11. Button MCM mode
12. Button alarm mute
13. CPR indicator
14. System Error indicator
15. Service due indicator
16. Button Fowler Boost (with indicator)
17. Button MAX mode (with indicator)
18. Button CLP mode (with indicator)

Fig. 33 Control Panel Scales and Symbioso 200

### 1) Preparation

❖ Install mattress and accessories to prepare bed before patient admission and using the scales.

**CAUTION**

**Incorrect use of scales due to incomplete preparation!**

❖ Before each patient admission tare the scales.

### 2) Taring

The taring is done in the range from 5kg to 249,5kg. The taring is used to set “0” on the display before placing the patient on the bed. It is used to show actual weight of the patient.
The taring must be done on the unloaded bed without patient. It is recommended to position mattress platform about 20 cm above the lowest position and the mattress platform in the horizontal position.

**To tare weight:**

❖ Ensure that nothing touches the bed except you.
❖ Press icon **3** (Zero/T) for 0,5 s until the display starts to flash.
❖ Press icon **3** to confirm taring. The „0“ is shown on the display.

Place the patient on the bed.

**To cancel taring:**

❖ Press icon **4** while taring.

## 3) Displaying

Verification Scale Interval is 0.5 kg.

- Press button **2** to display value with actual scale interval 0,1 kg for 5 s.

Display shows normally actual weight if other functions are not activated.

## 4) Hold Mode

Hold Mode must be used only when the scales are stabilized.
It allows adding or removing bed accessories and other items without changing the weight value.

**To activate Hold Mode:**

- Wait 5 s until the scales are stabilized. The LED **10** will be illuminated when the scales are stabilized.
- Press button **5** for 2 s.
- The display shows „HOLD“, indicator of activated Hold Mode is illuminated.
- Add or remove required accessories.

**To deactivate Hold Mode:**

- After adding or removing accessories wait 5 s, until the scales are stabilized on the display. The LED **10** will be illuminated when the scales are stabilized.
- Press button **5** for 2 s.
- The display shows the original weight value and the indicator of Hold Mode is not illuminated.

**To deactivate Hold Mode without fixing the weight value:**

- Press button **4.**

## 5) Setting Mode

**To set date, date format, time and unit of weight:**

- Press button **4** and button **5** simultaneously for 3 s.

The value to be changed flashes on the display.

**To navigate in list:**

- Press button **4** or button **5** to go up or down in the following list:

1. minutes
2. hours
3. date format (month-day/day-month)
4. year
5. month
6. day
7. unit of weight

**To leave setting mode:**

- Press button **4**.

Setting Mode is left without saving the last setting.

## 6) Bed Exit Alarm

Any weight drop of more than 20 kg will activate the Bed Exit Alarm.

**To deactivate Bed Exit Alarm:**
- Press Bed Exit Button **7** for 2 s.

**To activate Bed Exit Alarm:**
- Press Bed Exit Button **7** for 2 s.

**To switch between Bed Exit Alarm zones:**
- Press Bed Exit Button **7** shortly to change zone of the Bed Exit Alarm.

**To set up the alarm volume:**
- Press button **6** until the desired volume is reached.

***NOTE:*** *If the alarm is set to minimum volume the mute mode is on.*

**Inner Zone alarm (indicator 9)**
- Alarm starts when patient moves from the limited area.

**Outer Zone alarm (indicator 8)**
- Alarm starts when patient leaves bed.

***NOTE*** *Inner zone alarm is the default mode when the Bed Exit Alarm is activated.*

## 7) Bed Overload

If the bed load is over 254,5kg:
- Overloading is signalized by long acoustic signal.
- The „**Hi**“ icon is displayed on the display.

***NOTE:*** *If the bed is overloaded then it is impossible to position or manipulate with the bed until the overloading is removed.*
***NOTE:*** *The bed overloading has always higher priority than Hold Mode and Taring functions.*

## 8) Bed Underload

In case the bed is underloaded (factory zero – 5kg):
- The display shows icon „**Lo**“.

## 9) Weighing in tilt

The bed can weight in tilt. The guarantee of accuracy is secured by spirit level which is located at the head/foot end of the bed. If the bubble is in the highlighted circle then the weighting is accurate.

## 10) Zeroing Scales

The zeroing can be done only in the range ±5kg from the factory zero. The zeroing is used to reset weight on the display and also to set up user zero, which sets the maximum weight range of the weighting system.
The zeroing must be done on the empty, unloaded bed without mattress and accessories. The zeroing is done after installation, weight verification or servicing.

**To zero scales:**
- Remove all accessories and mattress from the bed. Position the bed about 20 cm above the lowest position and the mattress platform to the horizontal position. Ensure that nothing touches the bed except you.
- Press button **3** (Zero/T) for 0,5s until weight value starts to flash.
- Press button **3** to confirm zeroing.

„0“ is shown at the display and acoustic signal confirms zeroing.

**To cancel zeroing:**
- Press button **4** while zeroing.

# 14 Max Inflate Mode (MAX)

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

**Max Inflate Mode is required for:**

- transferring patients
- complex nursing procedures
- transporting the bed

**To activate/deactivate the mode:**

- ❖ Press button **15**.

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.

# 15 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 **16**.

## 15.1 Fowler Boost Function

The Fowler Boost function linearly 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 **13**.

# 16 MCM Mode

The MCM mode is the default mode for the Symbioso 200 mattresses, as this is the most effective mode for the patient in view of the clinical effect. The MCM function blows through the parts under the patient and removes moisture as one of the factors contributing to the development of bed sores. You can switch to the MCM mode by pressing icon 11 (Fig. 33).

# 17 Recommended Weight Levels

**Warn ing**

**Risk of injury due to incorrect pressure level!**
The recommended weight 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 weight level setting by more than 1 step for the patient's comfort.
- Regardless of the weight level, make sure the patient is not lying directly on the foam base.

It is possible to select patient weight levels to match weight distribution and comfort requirements.

**To change the pressure level:**

- Press button **16** briefly to show current weight setting
- Press and hold button **16** until required pressure level is obtained.

***NOTE*** *When holding button **16** The weight levels are selected from the lowest weight setting to highest weight setting, when you reach the highest weight setting, you need to press and hold the button again.*

**Recommended pressure levels::**

- 1: up to 50 kg
- 2: 55-90 kg
- 3: 91-135 kg
- 4: 136-180 kg
- 5: 181-254 kg

***NOTE*** *The weight 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.*

# 18 i-Drive Power (optional)

## 18.1 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.

## 18.2 Safety instruction for i-Drive Power

- Follow the instructions carefully.
- Ensure that the bed is operated exclusively 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.

### 18.3 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.

**CAUTION!**

**Maximal clearance underneath the bed (with 15 cm castors) is 14 cm!**

- Observe the path for any obstacles and avoid collisions.

**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 ®.*

### 18.4 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 Fig. 34.

**CAUTION!**

**Material damage due to incorrect use!**

➲ Do not hang anything on the main control panel and its cable!

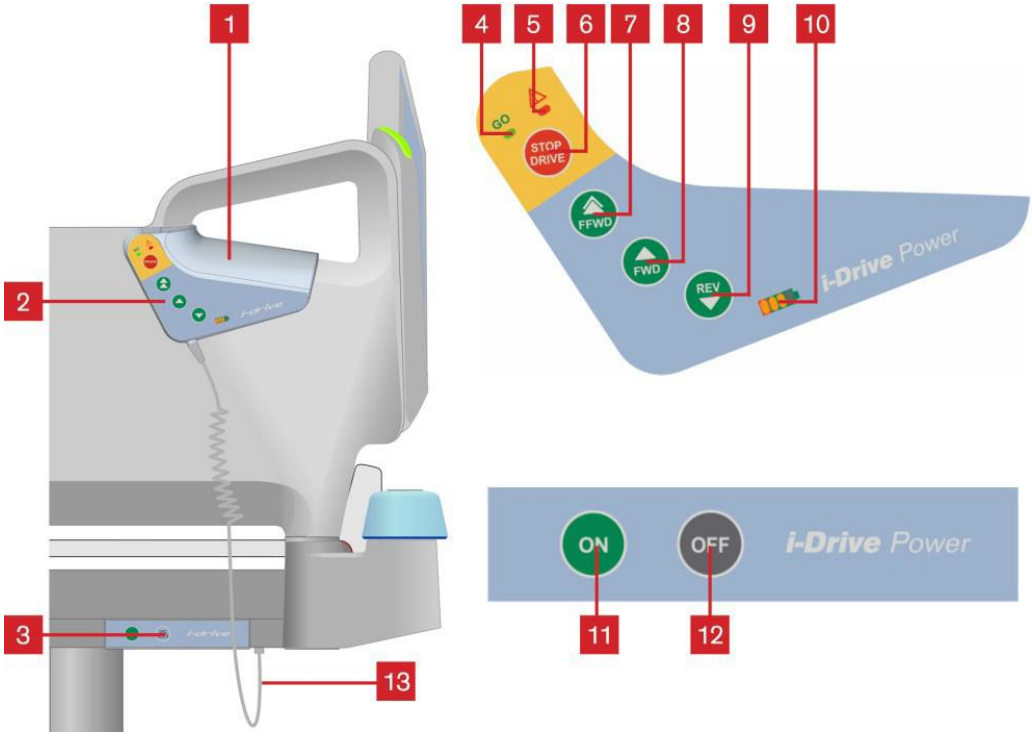



Fig.34 i-Drive Power controllers

**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.*

### 18.4.1 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 17.4.3)
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.*

### 18.4.2 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 f rom the touch sensor area (**1**) and i-Drive Power will brake automatically.

***NOTE*** *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.*

### 18.4.3 i-Drive Power Activation/Deactivation

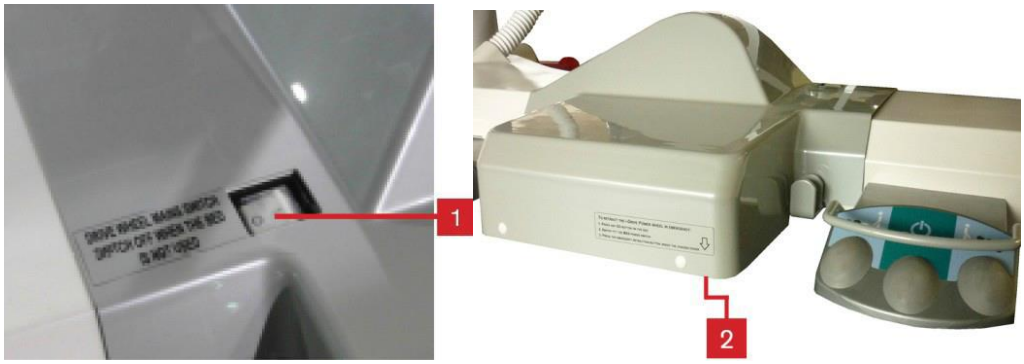



Fig. 35 i-Drive mains switch

**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:**

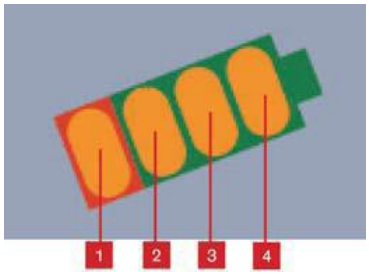
1. Press any GO button on the bed.
2. Deactivate the i-Drive using the mains switch (**1**).
3. Press the emergency retraction button (**2**).

***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.*

### 18.4.4 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.

## 18.5 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. 36 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.*

## 18.6 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)*<br>***NOTE*** *LED indicators are numbered from theleft (see Fig.)* | | | | |

## 18.7 Light Indicators

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

## 18.8 Technical Specifications

| Specification | Value |
|---|---|
| i-Drive wheel diameter | 8,27 in. |
| Max. fast forward speed (flat ground, loaded) | 4,43 Km/h (±15%) |
| Max. forward speed (flat ground, loaded) | 2,16 Km/h (±15%) |
| Max. reverse speed (flat ground, loaded) | 2,16 Km/h (±15%) |
| Max. angle of ascent | 6° |
| Noise level (when retracting the drive wheel) | 65 dB |

## 18.9 Electrical specification

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

## 18.10 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.*

# 19 Additional Functions of Symbioso

## 19.1 Transport Mode/Power Failure

This mode is activated automatically if no mains power is available to the SCU. CLP Mode will not be operational.

The mattress maintains sufficient air pressure to support the patient for approximately 12 hours. The foam base makes sure that patient does not lie directly on the mattress platform once the mattress deflates.

**Possible reasons for SCU not being supplied with mains power:**

- Auxiliary power cord unplugged to move bed with patient
- Power failure

❖ Provide Multicare with Symbioso with mains power as soon as possible.

**Warning**

**Risk of injury due to lack of support!**
The patient is not receiving CLP prevention while the power is off and should be returned as soon as possible.

## 19.2 CPR (Symbioso)


Fig. 37 *CPR Strip*

Symbioso 100 is equipped with CPR pull tags on both sides next to the manual backrest release.

❖ Pull CPR pull tags 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.

***NOTE*** *In the pictures, the mattress is shown without the cover for clarity. Removing the cover is not neccessary to reconnect the CPR valves and replace the CPR pull tags.*

## 19.3 Alarms

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:**

**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.

## 19.4 Foot Surface Extension

Fig. 38 *Selector Valve for Foot Extension*

It is possible to manually inflate and deflate either of the 2 sets of air cells nearest the foot board as required to match the length the mattress platform has been set to. Furthermore, it is possible to manually deflate one of the air cells to create a lower section for the patient's heels which helps with the prevention and treatment of pressure sores.

The selector valve for the foot extension is located on the left-hand side of the foot end, inside the mattress cover to protect it from dirt and fluids.

**To extend the foot surface:**

- Open zipped flap on left-hand side of foot end.
- Hold valve with thumb and forefinger of one hand and use thumb to push in white locking pin.
- Rotate valve to desired position.
- Release white pin so that it latches with an audible click.
- If pin does not latch, move valve a little to the left or right until there is an audible click.
- Close zipped flap.

**Valve positions**

The valve positions are labelled on the valve to show which setting has been selected.

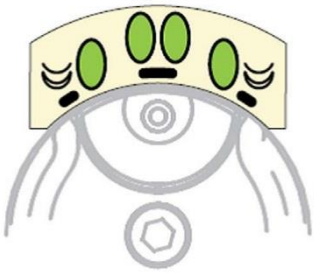


Fig. 39 *Valve Positions*

- cell completely inflated
- cell completely deflated

# 20 X-Ray Lung Examination

Fig. 40 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 holder with 2 U-profiles under the backrest. This design allows taking x-ray images of the patient's lungs without moving the patient manually.

## 20.1 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 43 cm x 35 cm).
- 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.

# 21 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.

## 21.1 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.

# 22 Cleaning/Disinfection

**Antibacterial surface treatment:**
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.
- Use the recommended cleaning agents only.
- Follow the instructions and observe the dosages recommended by the manufac- turer.
- Ensure that disinfectants are selected and applied only 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).
- 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 finish.
- 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)<br>■ Bacillol AF, Bacillol Rasant, Dismozon Pur, Microbac Forte, Neodisher Dekonta (BODE Chemie)<br>■ Lysoformin 3000, Lysoform Spezial (LYSOFORM)<br>■ Incidin plus, Incidin rapid (Ecolab)<br>■ Perform, TPH protect (Schülke) |
| Mattress cover base, comforter covers, air cells, foam base, SCU | ■ standard hospital detergents<br>■ désinfectants à base d'alcool et de chlore |
| Mattress cover top | ■ standard hospital detergents<br>■ alcohol- and quaternary ammonium-based disinfectants |

## 22.1 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.

## 22.2 Cleaning (Multicare LE)

### 22.2.1 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

### 22.2.2 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

### 22.2.3 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)

## 22.3 Cleaning (Symbioso)

### 22.3.1 General guidance

- 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<br>*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.*

| Type of Cleaning | Parts to be cleaned |
|---|---|
| Routine Cleaning and Disinfection | ■ exposed mattress parts<br>■ exposed SCU parts |
| Full Cleaning and Disinfection | • exposed mattress parts<br>• exposed SCU parts<br>• internal parts of mattress<br>• internal parts of cover |

### 22.3.2 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.

### 22.3.3 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 SCU:**

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

### 22.4 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 at foot end of foam base holding the foam base to the 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.

# 23 Troubleshooting

| 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. |
| | Drive motors have no power<br>Defective drive motors<br>Defective battery | Check the mains connection.<br>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. |
| | Drive motors have no power<br>Defective drive motors<br>Defective battery | Check the mains connection.<br>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<br><br>No power to bedframe<br>Mains plug inserted incorrectly<br>Faulty power source<br>Faulty SCU<br>Air leaking<br>CPR valve leaking or open<br>Air pipes blocked<br><br>Mattress partialy inflated<br>Mattress damaged or faulty | Turn switch on. Green mains power switch will illuminate.<br>Check mains connection.<br>Insert mains plug correctly.<br>Notify the service department.<br>Notify the service department.<br>Check mattress pipe connection.<br>Check CPR valves closed.<br>Check piper are not trapped or. kinked<br>Check mattress is unfolded and flat.<br>Notify service department. |
| Unable to change mode or pressure | Go button was not pressed | Press the GO button. |
| Fault symbol illuminated & audio alarm | One time exception fault<br><br>Persistent reoccuring fault | Switch off SCU & switch back on, reset to see if fait is self-cleared.<br>Notify service department, mute audio alarm. |
| CPR symbol illuminated | In CPR mode | Press CLP or Max to cancel |

**Danger to life due to electric shock!**

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

# 24 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 mainte- nance.

**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 by seller´s customer service or trained hospital technicians only.
- Do not use the bed if any malfunction or defect occurs. In this case contact manuf- acturer or service organisation immediately.

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

- Ensure that the following maintenance work is performed every 12 months by the manufacturer or by a qualified service organisation trained and certified by the manufacturer

## 24.1 Monthly maintenance

- Check all movable parts for wear.

## 24.2 Maintenance every 3 months

- Check function of brake lever.
- Clean the piston shafts and lubricate with silicone oil.
- Clean the bolts and hinges of the mattress platform (backrest, thigh rest, calf rest) and lubricate with silicone oil.
- Check mechanism of mattress platform extension.
- Check bolts on castors and tighten them if necessary.

## 24.3 Maintenance every 12 months

### 24.3.1 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 **c**ustomer service
- Sales
- Our technical support department

### 24.3.2 Completeness

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

### 24.3.3 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.

### 24.3.4 Functioning

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

### 24.3.5 Electric Control

**Plug Connections:**

- Replace O-rings on connectors.
- Check plug 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 authorized by the manufacturer.

- Use the following fuse types only:
  - T2A (for 230 V input)
  - T4A (for 100 – 127 V input)

### 24.3.6 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.

### 24.3.7 Accessories

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

## 24.4 Safety Checks

**Warning**

**Risk of injury due to incorrect safety checks!**

- ❖ Ensure that safety checks are performed by seller´s customer service or authorised per- sonnel (certified by the manufacturer) only.
- ❖ 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 §6 of the Medical Devices Operator Ordinance, the operator is required to perform a technical safety check on the hospital bed every 12 months.

The procedure for performing the safety check is stipulated in VDE 0751 or IEC 601.1.

The manufacturer will give a certificate to service organisations in which the manufacturer declares that the service organisation is qualified to perform maintenance on LINET® products.

LINET® makes every reasonable effort within research, design and manufacturing of beds to ensure that their products are fit for purpose and product to the highest level of quality. However LINET® can take no responsibility for any damage caused to the product or harm to patients, staff or other individuals as a result of:

- ■ Not following the instructions for use, including warning and caution statements, provided in their user manuals,
- ■ Use of the product for other than its intended purpose as stated in any documentation provided by LINET®

**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 repairably by service personnel.

## 24.5 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.*

## 24.6 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.

# 25 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 into 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.

# 26 Disposal

## 26.1 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.



## 26.2 Disposal

### 26.2.1 Within Europe

**To dispose of the appliance:**

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

The materials of the appliance are reusable. By reusing, 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.

### 26.2.2 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.

### 26.2.3 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.

# 27 Warranty

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

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

- Do not continue to use the bed.

This product is covered by a 24-month warranty from the date of product shipment from LINET® to the customer. The warranty covers all material and manufacture-related failures and errors. The warranty does not cover any failures or errors caused by incorrect use and external influences. Justified complaints will be fixed free of charge during the warranty period. Proof of purchase, with the date of purchase, is required for any warranty service. Our standard terms and conditions apply.

# 28 EC Declaration of Conformity - Multicare

| EC DECLARATION OF CONFORMITY | Number: | PSEN0013 |
|---|---|---|
| | Version: | 06 |

**1. Product - instrument Type / Model:**

Electrically operated hospital bed with scales – ***Multicare / 1MC***

**2. Name and address of the manufacturer:**

| | |
|---|---|
| Commercial name | **LINET spol. s r.o.** |
| Registered address | Želevčice 5, 274 01 Slaný, Czech Republic |
| Reg. No. | 00507814 |
| Telephone | +420 312 576 111 |
| Fax | +420 312 522 668 |

**3. This declaration of conformity is issued under the sole responsibility of the manufacturer.**

**4. Object of declaration:**

| | |
|---|---|
| Product: | **Multicare with scales (WS17), Multicare LE with scales (WS17)** |
| Description and function designation: | Electrically operated hospital bed with scales, intended for use in intensive and acute care. This EC conformity declaration also covers all applicable accessories. |
| Classification of the product as the medical device: | **Class** I non sterile, with measuring function, according to annex IX of Government Order No.54/2015 Coll. (MDD 93/42/EEC) – rule 12 |

**5. The object of the declaration described above is in conformity with the relevant Union harmonization legislation:**

- Act No. 268/2014 Coll., on Medical Devices (Directive 93/42/EEC)
- Act No. 350/2011 Coll., on chemical substances and mixtures (Regulation (EC) No 1907/2006)
- Government Order No.54/2015 Coll., with is specifies technical requirements for medical devices (Directive 93/42/EEC)
- Applicable requirements of Government Order No.176/2008 Coll., on machinery devices (Directive 2006/42/EC)
- Government Order No.481/2012 Coll., on the restriction of the use of certain hazardous substances in electrical and electronic equipment (Directive 2011/65/EU)
- Government Order No.121/2016 Coll., on non-automatic weighing instruments (Directive 2014/31/EU)

**6. References to the relevant harmonized standards used or references to the other technical specifications in relation to which conformity is declared:**

EN 60601-1:2006/A1:2013, EN 60601-1-2:2007, EN 60601-1-6:2010, EN 60601-2-52:2010, EN ISO 14971:2012, EN 45501:2015, EN ISO 10993-5:2009, EN ISO 10993-10:2013

**7. Notified body**

| Name and number of NB | Performed | Issue the Certificate No. |
|---|---|---|
| Czech Metrology Institute, NB 1383<br>Okruzni 31, 638 00 Brno,<br>Czech Republic | EU type examination in accordance with Module B of Government Order No.121/2016 Coll. (module B of Directive No. 2014/31/EU) | TCM 128/17-5444 |
| Czech Metrology Institute, NB 1383<br>Okruzni 31, 638 00 Brno<br>Czech Republic | Certification / approval of Quality Management System for production and testing of non-automatic weighing instruments in accordance with Annex II, module D of Government Order No.121/2016 Coll. (Annex II, module D of Directive No. 2014/31/EU) | 0115-SJ-C002-06 |
| Electrotechnical testing institute,<br>NB 1014<br>Pod Lisem 129/2, 171 02 Praha<br>Czech Republic | Conformity assessment in accordance with Annex II and VII of Government Order No.54/2015 Coll. (Annex II and VII of Directive 93/42/EEC) | MED170041 |

**8. Another information**

We hereby declare that the above mentioned energy meters are fulfill in Directive 2014/32/EU of the European Parliament and the Council.

Place and date of declaration issue: Slaný, 20.07.2018

Signed for and on behalf of **LINET spol. s r.o.**

.....

**Ing. Tomáš Kolář, Managing Director**

Z S01P10_9, Verze 03

CE 2014

# 29 EC Declaration of Conformity - Symbioso

## EC CONFORMITY DECLARATION

Date and place of issue: 12. 05. 2015, Želevčice

**Conformity declaration issued by:**

| | |
|---|---|
| Commercial name | **Linet spol. s r. o.** |
| Registered address | Želevčice 5, 274 01 Slaný, Czech Republic |
| Reg. No. | 00507814 |
| Telephone | +420 312 576 111 |
| Fax | +420 312 522 668 |

| | |
|---|---|
| As the producer of the product - name (brand): | **Symbioso** |
| Variants of the product: | **Symbioso 100, Symbioso 200**<br>**1VS, 3VS**<br>(Variants are specified in the technical documentation of the product). |
| Description and function designation: | Active integrated mattress replacement system (alternating pressure), intended for use as an accessory of hospital bed Multicare. |
| Classification of the product as the medical device: | **Class I** nonsterile, without measuring function, according to annex IX MDD 93/42/EEC – rule 12 |

### A) Declaration

I declare that the said product is safe under the conditions of common use in compliance with the instructions and that measures have been taken to ensure the conformity of all the products brought to market with basic requirements of directives related thereto, stated in paragraph B.

### B) Fulfilled technical requirements of related regulations

This product's characteristics comply with the technical parameters related to it and stated in MDD 93/42/EEC which stipulates the technical parameters for healthcare products and with requirements in directive 2011/65/EU which stipulates the restriction of the use of certain hazardous substances in electrical and electronic equipment.

### C) Means of assessing conformity

Conformity was assessed by the procedure stated MDD 93/42/EEC, Annex VII.

### D) Used standards for product conformity assessment

The said product fulfills the requirements of these harmonized technical standards which were used for assessing of conformity: EN 60601-1:2006/A1:2013, EN 60601-1-2:2007, EN 60601-1-6:2010, EN ISO 10993-5:2009, EN ISO 10993-10:2013 and EN ISO 14971:2012.

Ing. Tomáš Kolář
managing director

CE

# 30 Technical Specifications

## 30.1 Accuracy of displayed values

**Weight (integrated scales):**

- 0.5 kg

**Tilt angle:**

- +/-3°

## 30.2 Mechanical Specifications (Multicare LE)

| | |
|---|---|
| Dimensions<br>With Folded-up Siderail | <br>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<br>Head section<br>Central section | <br>53,9 cm<br>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<br>Application environment 1, 2<br>Application environment 3, 5 | <br>185 kg<br>215 kg |

## 30.3 Conditions environnementales (Multicare LE)

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

## 30.4 Electrical Specifications (Multicare LE)

| | |
|---|---|
| Input Voltage<br>Version 1<br>Version 2<br>Version 3<br>Version 4<br>Version 5<br>Version 6 | <br>230 V~, 50/60 Hz<br>100 V~, 50/60 Hz<br>110 V~, 50/60 Hz<br>120 V~, 50/60 Hz<br>127 V~, 50/60 Hz<br>110-127 V~, 50/60 Hz or 230 V~, 50/60 Hz |
| Maximum Power Input | 370 VA |
| Protection Class | IP X4 |
| Safety Class | Class I (with type B applied parts) |
| Electrical Motor Duty Cycle | max. 2 minutes ON / 18 minutes OFF |
| Battery<br>Fuse | Pb AKU 2 x 12 V / 1,2 Ah / Fuse 15A<br>2x T2.0A L 250 V for 230 V version<br>2x T4.0A L 250 V for 100-127 V version |

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

## 30.5 Mechanical Specifications (Symbioso)

| | |
|---|---|
| Dimensions<br>■ Mattress (inflated)<br>■ SCU | <br>213 cm x 86 cm x 20 cm<br>36 cm x 22 cm x 10 cm |
| Weight<br>■ Mattress (inflated)<br>■ SCU | <br>9.5 kg<br>3.5 kg |
| Inflation time after storage<br>CPR deflation time | 15 min<br>max. 30 s (electric or manual) |
| Environmental conditions - Operation<br>■ Temperature<br>■ Humidity<br>■ Atmospheric Pressure<br>Environmental conditions - Storage and Transport<br>■ Temperature<br>■ Humidity<br>■ Atmospheric Pressure | <br>+10 °C — +40 °C<br>30 — 75%<br>79 — 106 kPa<br><br>-40 °C — +70 °C<br>10 — 100% (non-condensing)<br>79 — 106 kPa |
| Max. mattress load | 250 kg/550 lbs |
| Remains inflated in Transport Mode for | min. 12 hours<br>(when starting from Max Inflate Mode) |
| Noise level | NC30 (suitable for use in quiet domestic environment)<br>max. 45 dBa (normal operation without alarm) |

## 30.6 Electrical Specifications (Symbioso)

| | |
|---|---|
| Supply voltage<br>Model 230 V | 220 - 240 V~<br>50/60 Hz |
| Nominal power<br>Model 230 V | max. 20 VA (when operating from mains supply) |
| Fuse<br>Model 230 V | 2x T1AH anti-surge fuse |
| Electrical safety class | Class 1 with applied parts type B |
| | In conformity with EN 60601-1 |

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***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

## 30.7 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 20 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<br>CISPR 11 | **Group 1** |
| RF emissions<br>CISPR 11 | **Class B** |
| Harmonic emissions<br>IEC 61000-3-2 | **Class A** |
| Voltage fluctuations / flicker emissions<br>IEC 61000-3-3 | **Complies** |

**Manufacturer instructions – electromagnetic susceptibility**

| Immunity Tests | Compliance level |
|---|---|
| Electrostatic discharge (ESD)<br>IEC 61000-4-2 | ± 8 kV for contact discharge<br>± 15 kV for contact discharge |
| Radiated RF<br>IEC 61000-4-3<br><br>Proximity fields from RF wireless communications equipment<br>IEC 61000-4-3 | 3 V/m<br>80 MHz – 2,7 GHz<br>80 % AM at 1 kHz<br><br>See Table 1 |
| Fast electrical transients / burst<br>IEC 61000-4-4 | ±2 kV for power line<br>repetition frequency 100 kHz |
| Surge<br>IEC 61000-4-5 | ± 1 kV Line-to-line<br>± 2 kV Line-to-ground |
| Conducted RF<br>IEC 61000-4-6 | 3 V (0,15 MHz – 80 MHz)<br>6 V in ISM bands between 0,15 MHz and 80 MHz<br>80 % AM at 1 kHz |
| Power frequency (50/60 Hz) magnetic field<br>IEC 61000-4-8 | 30 A/m |
| Voltage dips, short interruptions on power supply input lines<br>IEC 61000-4-11 | 0 % $U_T$; 0,5 cycle<br><br>At 0°, 45°, 90°, 135°, 180°, 225°, 270° a 315°<br><br>0 % $U_T$; 1 cycle and 70 % $U_T$; 25/30 cycle<br><br>Single phase: at 0°<br><br>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<br>745<br>780 | 704 - 787 | LTE band 13, 17 | Pulse modulation 217 Hz | 9 |
| 810<br>870<br>930 | 800 - 960 | GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE band 5 | Pulse modulation 18 Hz | 28 |
| 1 720<br>1 845<br>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<br>5 500<br>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)*