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OPERATING INSTRUCTIONS

Children's Therapeutic Bed
"LUKAS"

(door height 136cm + door height 170cm)

Read carefully before operating!

These operating instructions must be provided to all users!

CE

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1. ASSEMBLY INSTRUCTIONS

Assembly must only be performed by trained specialist personnel. We recommend that assembly be performed by two people, following these steps:

1.1 On the inside of the bed, there are stickers with arrows numbered from 1 to 4 (Fig. 1).
Arrange the side panels, the head end and the foot end according to these numbers.

Fig. 1

Screw the side panels to the head end and foot end according to the numbers (M8x100) (Fig. 2).

Fig. 2

Use the enclosed flat head screws (M8 x 100 mm) to attach the upper crossbeam based on the colour coding + arrangement (front or back).

<u>Do not tighten the screws yet; leave some play to insert the rear wall!</u>

1.2 There is a sticker that reads **“head-end”** on the lifitng scissors. Position the lifting scissors according to the **“head-end” sticker** in the bed frame (Fig. 3).

Move the lifting scissors to the uppermost position (Fig. 4). Screw the lifting scissors onto the supporting strip using the enclosed screws (M6 x 15mm) (Fig. 5).
Place the wooden bed base on the lifting scissors.

Fig. 3

Fig. 4

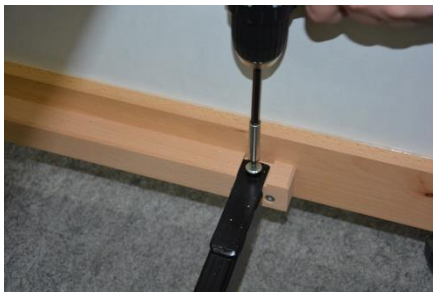

Fig. 5

Fig. 6

Move the bed base down to the level of the bed frame
Align the bed base (Fig. 7).

Fig. 7

Move the lifting scissors to the uppermost position.
Screw the wooden bed base onto the lifting scissors adapter using the enclosed flat head screws (4 x 35 mm) (Fig. 8).

Fig. 8

If present, connect the cable for the dual motor to the control unit (Fig. 9).

The control unit is located on the lifting scissors.
Mount the protective cover on the control unit.

<u>When laying the cable, make sure that the cable cannot be crushed or damaged!!!</u>

Fig. 9

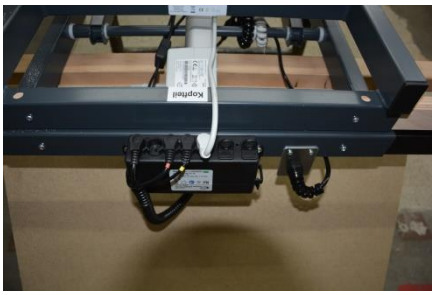

Fig. 10

Mount the protective guard (Fig. 11) using the enclosed flat head screws (M6 x 25).

Fig. 11

Fig. 11

1.3 The rear frame is colour coded.

RED: **left**
GREEN: **right**
(looking at the bed from the door side)

Position the rear frame between the foot end and the head end according to the colour coding and attach using the enclosed flat head screws (M8 x 100 mm) (Fig. 12).

Then screw on the two rear frames and the upper crossbeam.

Fig. 12

1.4 The two door units are colour coded.

RED: **left**
GREEN: **right**
(looking at the bed from the door side)

Screw the first door unit to the head end/foot end of the bed frame according to the colour coding using the enclosed screws (M8 x 100 mm). (Fig. 13).
Then attach the second door unit accordingly.

Fig. 13

Insert or remove **spacers** betwen the door unit and the head end/foot end as required in order to achieve the **correct clearance** between the two door units (**7mm**).

1.5 The outer doors are secured/opened using a lock in the edge of the door (Fig. 14). The middle doors are locked using a simple patent lock. Move the hand lever of the patent lock along the groove to close or open the door (Fig. 15). There are two patent locks at the bottom and one at the top (Fig. 16). The doors can also be secured using a sliding rail (Fig. 16 + Fig. 17).

Fig. 14

Fig. 15

Fig. 16

Fig. 17

1.6 Transport wheels

Caster, 75 x 30 mm.
To secure the lock, press the foot lever down. To release the lock, pull the foot lever up (Fig. 18).

After moving the bed, <u>all</u> wheels must be correctly locked!

Fig. 18

1.7 Securing the inner doors

The inner doors are held in place by a magnet to prevent them opening unintentionally (Fig. 19).

Fig. 19

1.8 Adjusting the doors

It is possible to correct stiff or hanging doors using a size-3 Allen key by unscrewing the support foot in the outer door hinges. Together with a second person, pull the head end or foot end outwards by hand and unscrew the support foot in a clockwise direction until the desired dimension is achieved (Fig. 20).

Fig. 20

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2. OPERATING INSTRUCTIONS

2.1 Intended use

The **"LUKAS"** children's therapeutic bed is designed for use in a home-care environment.
Application environment 3 + 4 in accordance with DIN EN 60601-2-52. The medical treatment to be provided is the diagnosis, treatment and monitoring of illnesses under medical supervision. It is permitted for use for **one person only**

- **Height**: min. 75cm – max. bed base minus 15cm/**weight**: max. 135 kg -

and the safe working load (see type plate) must not be exceeded. The bed must only be used in enclosed rooms and must be protected against excessive moisture.

The user can apply the different adjustment functions using an **IPX4 manual control unit with closure, height and bed base adjustment**.

Make sure that the patient is always lying with their head at the "head end" of the bed.
All components of the bed must be used in accordance with the appropriate intended use. Overloading causes damage and is not permitted.

2.1.1 Indications

For children with restricted movement who no longer have spontaneous mobility, or young people and adults with cognitive developmental disorders, for example it

- An ergonomic sitting position is necessary in bed due to trunk instability
- Secure contact between the feet and the floor is necessary when getting into/out of bed
- The height of the bed must be adjustable so as to enable the patient to be transferred to a wheelchair, for example
- The height of the bed base must be adjustable for treatment purposes

2.1.2 Contraindications

- None known

Always consult a doctor or therapist before using the bed.

2.2 Important information on operational safety

I. Setup and initial operation are performed by the sales agent. Prior to handing over the bed and before each re-use, a functional check and a safety check must be performed. It must be ensured that all functions are running smoothly, the power cable is routed correctly, and the bed base is securely mounted in the bed frame. This also applies to any further operation of the children's therapeutic bed.
Incorrect routing of the power cable (e.g. kinks, shearing) may pose a serious risk to people (electric shock).

II. The patient can weigh up to a maximum of 135 kg. Persons of any age with reduced perception are only permitted to use the system under supervision.

III. The lowest setting of the bed base is the safest and this is the only one that should be used, unless another setting is required for therapy and treatment purposes.
Following therapy or treatment, always move the lifting unit down to the lowest position.

IV. When adjusting the lifting unit, do not place any parts of the body inside or underneath moving parts. There is a **RISK OF CRUSHING**.

V. The **"LUKAS"** children's therapeutic bed is intended for use only in dry rooms and must only be operated and stored in these conditions. The system must only be connected to a conventional 230-volt socket. The cable and plug must be dry and must not be crushed or abraded at any location. Make sure that all cables are routed and connected correctly at the points provided.

VI. In order to prevent overloads or defects to the electric motors, a maximum duty cycle of 2 minutes must not be exceeded.

The electric adjustment of the head end or foot end must only be used to lift and lower the upper body or legs (observe the position of the patient in the bed). Overloading causes damage and is not permitted!

Overloading the mechanical components causes damage and is therefore not permitted. (see operating instructions, item 2.3 + 2.4 and type plate)

VII. In the event of misuse, improper use, incorrect operation or incorrect assembly/repair, no liability will be accepted for any damage. In such cases, all warranties are also excluded.

VIII. The drives must not be operated in the presence of flammable gases or vapours.

IX. The **"LUKAS"** children's therapeutic bed must only be operated with original accessories and maintained using original parts. The use of mattresses that are incompatible with this bed can be **hazardous**. Please observe the technical data (item 3/page 11.0 et seq. of these operating instructions).

X. If any malfunctions occur, inform your sales agent immediately.
In particular, disconnect the power and do not operate the device in the event of damage to electrical or mechanical parts.

XI. Avoid the improper routing of electrical cables for other devices in the bed for medical use. **Risk of crushing** between moving parts of the bed.

2.3 Warning notices

I. If the patient is not supervised, the lifting unit must be moved to its lowest, horizontal position. The revolving doors must be locked.

II. Do not leave anything in the bed that could be used to climb on or that may result in a risk of suffocation or strangulation.

III. Only trained persons or the nursing staff are permitted to adjust the lifting unit. The patient themselves must not adjust the bed.
If the patient is alone, all functions must be locked (see item 2.6 Manual control unit).

IV. **The patient's clinical condition may cause them to become trapped.**

V. **Take care when opening and closing the revolving doors. RISK OF CRUSHING. The open, middle revolving doors are secured by the magnet at the top end. Only open and close the complete door units in supervised situations.**

VI. **The "LUKAS" children's therapeutic bed must only be used on a flat, horizontal and solid surface.**

VII. **Only use in dry rooms.**

VIII. **Do not position the bed in the vicinity of open flames or other strong sources of heat (e.g. electric radiant heaters, gas ovens etc.).**

IX. **The maximum user load is 135 kg.**
The safe working load is 170 kg, including accessories.
<u>The electrical adjustment of the head end or the head end/foot end</u> (accessories) must only be used to lift and lower the upper body and legs (observe the position of the patient in the bed).

2.5 Bed base

The lifting unit is used for the electrical lifting and lowering of the bed base.

The maximum user load is 135 kg.
The safe working load is 170 kg, including accessories.
Overloading causes damage and is not permitted.

2.5 Bed base

The four-part wooden bed base allows for infinite adjustment of the head end and foot end.

It is not advisable to move the back section and the foot end to the uppermost position at the same time as this will be too restricted and uncomfortable for the patient.

If a power cut or a fault in the bed base motor causes the backrest to remain in an upright position, there is the option to move the back section to the lowest position using batteries (Fig. 21).

The batteries must be replaced after a single use.

Fig. 21

2.6 Manual control unit

The manual control unit is used to control all electrical functions. The height adjustment and the bed base adjustment are marked by appropriate symbols. Press lightly on the appropriate button to move the system to the desired position.

Make sure that the manual control unit cable does not become crushed during the adjustment. To prevent malfunctions, hang the manual control unit on the edge of the bed when not in use, with the keypad facing outwards.

The lock for enabling and disabling the function keys is located on the back of the manual control unit (Fig. 22). Turn the key to enable and disable the manual control unit. The arrow indicates the relevant position.

The key is a safety element designed to protect against unauthorised use of the manual control unit, and must therefore always be stored in a separate location.

Button assignment on the manual control unit (Fig. 22):

1. Keypad (from top).
   Head end up/down (left/right) for electric-powered bed base
2. Keypad (from top).
   Foot end up/down (left/right) for electric-powered bed base
3. Keypad (from top).
   Head end and foot end up/down at the same time (left/right) for electric-powered bed base
4. Keypad (bottom)
   Lifting motor (bed base) up/down (left/right)

Fig. 22

2.7 Revolving doors

The **outer** doors are secured/opened using a lock in the edge of the door (Fig. 23).
The **middle** doors are locked using a simple patent lock. Move the hand lever of the patent lock along the groove to close or open the door (Fig. 24). There are two patent locks at the bottom and one at the top.

The doors can also be secured using a sliding rail. As an option **(accessories),** the doors can be secured at the top with a U-shaped wooden strip (Fig. 25). In this case, the doors are locked by turning the locking pins.

Fig. 23

Fig. 24

Fig. 25

2.8 Transport wheels

Caster, 75 x 30mm.

To secure the lock, press the foot lever down.

To release the lock, pull the foot lever up (Fig. 26).

After moving the bed, all wheels must be correctly locked!

Fig. 26

2.9 Securing the inner doors

The inner doors are held in place by a magnet to prevent them opening unintentionally (Fig. 27).

Fig. 27

2.10 Patient lifting unit

When using the "LUKAS" children's therapeutic bed, only the patient lifting units "ARNOLD" and "JAMES" from REBOTEC, 49610 Quakenbrück, Germany may be used. The required free space under the bed is a maximum of 110 mm/90 mm

2.11 Cleaning, maintenance and re-usage

The surfaces are smooth so that they are easier to clean and disinfect. Neither the electrical system nor the bed frame are suitable for high-pressure cleaners. To clean, use a damp cloth with a small amount of neutral soap then wipe until dry.

It is possible to disinfect the bed with conventional disinfectant.
Once the bed has been cleaned, disinfected and maintained, it can be used again.

<u>Maintenance must only be performed by authorised persons.</u> For information on maintenance, safety checks and inspection intervals, see item 4 of the "ANNEX" to the operating instructions.

Spare parts lists can be obtained from the manufacturer!

2.12 Accessories

Mattress, not readily flammable in accordance with DIN 597-
- For length x width, see the technical data
- For max. thickness of the mattress, see diagram
  (must not project beyond the lower cross-member of the rear wall).

Retouching pen for metal lifting system
Surface set for wooden parts

2.13 Symbols


Protection class II


For use in dry rooms only


Risk of crushing


Important information in the operating instructions


Applied part type B

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3. TECHNICAL DATA

3.11 Bed frame: LUKAS 136 – 100 x 200 cm

External dimensions:	1072 x 2160 mm
Bed base:	1000 x 2000 mm
Mattress size:	1000 x 2000 mm
Adjustment range of the lifting scissors:	390 – 830 mm
Bed height (wheel diameter 75 mm):	1928 mm
Door height:	1360 mm

3.12 Bed frame: LUKAS 136 – 80 x 170cm

External dimensions:	872 x 1860 mm
Bed base:	800 x 1700 mm
Mattress size:	800 x 1700 mm
Adjustment range of the lifting scissors:	390 – 830 mm
Bed height (wheel diameter 75 mm):	1928 mm
Door height:	1360 mm

3.13 Bed frame: LUKAS 170 – 100 x 200 cm

External dimensions:	1072 x 2160 mm
Bed base:	1000 x 2000 mm
Mattress size:	1000 x 2000 mm
Adjustment range of the lifting scissors:	390 – 830 mm
Bed height (wheel diameter 75 mm):	2260 mm
Door height:	1360 mm

3.14 Bed frame: LUKAS 170– 80 x 170 cm

External dimensions:	872 x 1860 mm
Bed base:	800 x 1700 mm
Mattress size:	800 x 1700 mm
Adjustment range of the lifting scissors:	390 – 830 mm
Bed height (wheel diameter 75 mm):	2260 mm
Door height:	1360 mm

Weight of bed frame + lifting unit	**LUKAS 136/=LUKAS 170**
Weight	approx. 171.5/199.5 kg
Head end and foot end	52/56 kg
Bed sides	28 kg
Protective guard	3 kg
Rear frame	26/34 kg
Revolving doors	34/42 kg
Total weight of bed frame:	approx. 143/163 kg
Mattress Standard:	RG40, 14 cm thick, approx. 10 kg
Upholstery (OPTIONAL)	33 kg

3. TECHNICAL DATA

3.2	**Lifting unit:** (Kirchner)	
	Dimensions	105 x 54 x 16 cm (L x W x H)
	Weight	approx. 43.5 kg
	Travel	440 mm
	Lifting force	230 kg
3.3	**Bed base:** (RINOVA-Flex)	
	Bed base	95 x 196 cm
	Division	4-part
	Angle **A** (backrest/horizontal)	> 70°
	Angle **Y** (backrest + rotary points of back section/seating section + upper/lower leg section)	94°
	Weight	approx. 20 kg
	User load	135 kg
	Safe working load	170 kg
3.4	**Motors:** Limoss	
	Mains voltage/frequency	230 volts/50 Hz
	Motor voltage	24 volts
	Protection class	II
	Noise emissions	< 65 dB (A)
	Nominal rating	max. 2 min./18 min. pause

Subject to technical modifications

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4. ANNEX

4.1 General instructions

- Maintenance/safety checks must only be carried out by persons with the appropriate qualifications.
- All other laws and DGUV regulation 3 remain unaffected.
- Repair of all electrical components must be carried out **exclusively** by **persons authorised by the motor manufacturer**.
- **Inspection intervals**:

  When the bed is first put into use and every time it is re-used.

  Maintenance/safety check **once a year or every 12 months**.
  Visual and function check of all mechanical + electrical parts.
  Electrical inspection in accordance with DIN EN ISO 62353.
- Inspections performed as part of the scheduled maintenance work can be performed on the installed system (at site of installation). All other repairs must be performed at a suitable place of work.
- Only the installation of original parts is permitted. The use of self-made parts will cancel all liability and warranty obligations on the part of the manufacturer. Spare parts lists can be obtained from the manufacturer.
- System modifications and additions require the manufacturer's written approval.
- Complete functional checks must be performed after all maintenance and repairs. Make sure that there are no collisions between moving parts so that there are no hazards for patients or third parties and no damage to materials.
- Instructions and a check list form are provided below so that you can document your work.

4.2 Maintenance instructions

The bed must undergo maintenance at least once a year or every 12 months. Only trained technical personnel from the operating company or manufacturer are authorised to perform this work. If there are any deviations from the requirements specified below, the bed must be taken out of service and repaired if the limitations are safety-related. Complete the check list (Annex) for every maintenance inspection.

Perform a visual inspection of all the parts on the bed base (slatted frame).
If you discover any damage, these parts must be repaired or replaced immediately.
Check that the moving parts are moving freely, and lightly apply grease if necessary.

- Check all pinned fittings, screw joints, rivets and welding seams. There must be no cracks or deformation and no individual parts of the joint must be missing (e.g. circlip, nut etc.).
- Perform a visual inspection of all parts of the bed:
  head end and foot end/bed sides/rear wall/doors/adjustable side rails.
- Check that the locking mechanisms for the doors/adjustable side rails are working correctly and moving freely.
- Check that the brake wheels of the bed are working correctly. The moving and braking functions must be working correctly.
- For electrically adjustable beds, perform a visual and functional check of the drives. These are subject to wear. If any of the following are observed, the affected drive is damaged and must be replaced immediately: significant heat generation, significant noise, grinding or squeaking noises, metal or plastic chips on or under the motor, restricted adjustment range, unresponsive limit switches or drives that are slower than usual.
- For electrically adjustable beds, check the power cable and all cable routing for damage, kinks and shear points, and check that cables are routed securely.
  Caution: If the power cable or power plug are damaged, they must be replaced immediately. If any damage is discovered, the bed must be taken out of use immediately.
- For electrically adjustable beds, check that the manual control unit is working correctly and has no external damage.

Check the bed on a regular basis every time it is used to ensure it is working correctly. Please correct any loose connections immediately using the appropriate tool.
If a product has any faults whatsoever, it must be taken out of use immediately.

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Maintenance/safety check in accordance with § 6 of the German Medical Device Operator Ordinance (MPBetreibV)

This form is available to download from our website.
www.freistil.com/service

FREI STIL TISCHLEREI

Check list
Maintenance/safety check in accordance with § 6 of the German Medical Device Operator Ordinance (MPBetreibV)

Medical equipment supplier	Inspector	Bed location
Name	Name	Name .....
Street	Street	Street .....
Postal code/city	Postal code/city	Postal code/city .....
Bed	**Reason for inspection**	**Maintenance confirmation**
Type	Before initial operation ☐	
Serial no.	Regular maintenance ☐	.....
.....	Following repair ☐	Date/signature (customer)

Inspection	Component	OK / NOK		Comments
Visual	Type plates	☐	☐	.....
Visual	Operating	☐	☐	.....
Visual	instructions	☐	☐	.....
Visual	Head end and	☐	☐	.....
Visual	foot end	☐	☐	.....
Visual	Side parts	☐	☐	.....
Visual	Lifting system	☐	☐	.....
Visual	Bed base	☐	☐	.....
	Wheels			
	Screw joints			
Function Wheels	Freely rolling	☐	☐	.....
	Locking	☐	☐	.....
	Braking	☐	☐	.....
Functions Side parts	Ease of	☐	☐	.....
	movement	☐	☐	.....
	Locking	☐	☐	.....
	Hinges			
Function Motors	Lifting motors	☐	☐	.....
	Head end motor	☐	☐	.....
	Foot end motor	☐	☐	.....
	Trendelenburg	☐	☐	.....
Function Accessories	.....	☐	☐	.....
	.....	☐	☐	.....
	.....	☐	☐	.....
Overall mechanical inspection		☐	☐	.....

Elec. testing	Component	OK / NOK		Comments	
Visual	Mains	☐	☐	.....	
Visual	connection	☐	☐	.....	
Visual	Mains plug	☐	☐	.....	
Visual	Mains cable	☐	☐	.....	
Visual	Strain relief	☐	☐	.....	
	Drives				
Function	Manual control	☐	☐	.....	
	unit	☐	☐	.....	
	Limit switch	☐	☐	.....	
	Battery				
				Actual	Target
Measurement	Resistance	☐	☐	.....	> 2 MOhm
	Leakage current	☐	☐	.....	< 0.1 mA

Measuring device used: .....

Comments: .....

.....
Date/signature (inspector)