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Operating instructions

Children's Therapeutic Bed

"LISA synchro"

(door height 102cm + door height 136cm)

Read carefully before operating!

These operating instructions must be provided to all users!

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1. ASSEMBLY INSTRUCTIONS

Assembly must be performed only 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 and foot sections according to these numbers.

Screw the side panels to the head and sections according to the numbers (M8 x 120mm) (Fig. 2).

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

Insert the aluminium sleeve for deflecting the anti-intervention roller into the bearing shells at the head and base sections, then screw in the front side of the according to the numbering (Fig. 2).

Fig. 1

Fig. 2

1.2 Bed base

Place the bed base (position of the head section in the bed box) on the metal brackets (head and foot section) and screw in tightly using the enclosed wood screws (4 x 20mm) (Fig. 3).

The metal brackets must always be aligned parallel to the bed base.

Fig. 3

1.3 The pre-assembled anti-intervention roller is located in a plywood box. Insert the plywood box into the holder on the door side of the bed (Fig. 4).

At the 'doors on the second long side' (accessory), insert the second roller on the rear panel into the holder.

Connect the cables to the lifting column motors and the manual control switch cable to the control unit (Fig. 4.1).

At the **electromotive head and foot section adjustment** (accessory) connect the dual motor cable to the control unit (Fig. 4.2).

Fig. 4

Then secure the protective cap to cover the connection plug.

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

Fig. 4.1

Fig. 4.2

1.4 Pull the roll-out bed slats out of the plywood box, divert it at the aluminium sleeve and insert it into the groove bar on the underside of the bed base.

Use the wooden strip to fix the roll-out slats into the groove, then attach the wooden strip with the enclosed wood screws (3 x 16mm) (Fig. 5).

Fig. 5

1.5 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 secure using the socket head screws (M8 x 120mm).

Then insert the enclosed shaped wood springs into the recesses. Fix the upper rear wall frame according to the coloured marking on the lower rear wall with the screws (M8 x 120mm) (fig. 6).

Now screw all screws (including bed box) tightly!!!

Fig. 6

1.6 The two door units are colour coded.

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

Fig. 7

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 120mm) (Fig. 7).

Then attach the second door unit accordingly.

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

1.7 The outer doors are secured/opened using flush bolts (Fig. 8). 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. 9).

There are two patent locks at the bottom and one at the top. The doors can also be secured using a sliding rail (Fig. 10 + Fig. 11).

Fig. 8

Fig. 9

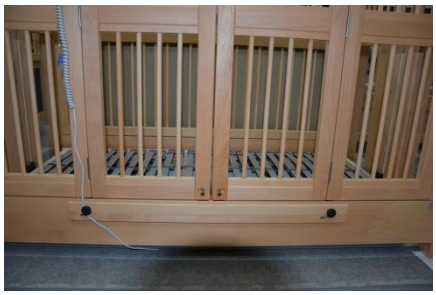

Fig. 10

Fig. 11

1.8 Securing the inner doors

The inner doors are each held in place by a magnet to prevent them opening unintentionally (Fig. 12).

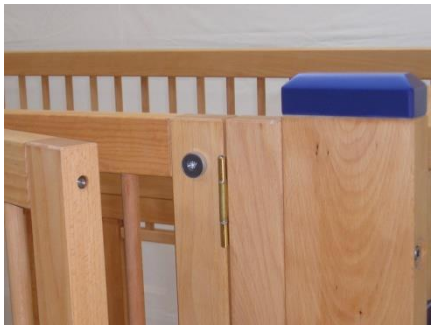

Fig. 12

1.9 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. 12.1).

Fig. 12.1

1.10 **OPTIONAL:** Accessories

Head and base sections fully adjustable by electric motor.

Connect the dual motor cable to the control unit (Fig. 13).
Then secure the protective cap to cover the connection plug.

Fig. 13

1.11 **OPTIONAL:** Accessories

Door locking device

The doors can be additionally stabilised in the upper area with a U-shaped wooden strip (Fig. 14). After placing the wooden strip on the doors according to the recesses in the upper cross-pieces of the two middle doors, turn the locking pins approx. 90° (they will lock due to the tension of the spring).
To release the locking pins, pull and turn them 90° into the resting position.

Fig. 14

1.12 **OPTIONAL:** Accessories

Transport casters

Caster, 100 x 30 mm, caster double stop.
To secure the lock, press the foot lever down. To release the lock, pull the foot lever up.

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

2. OPERATING INSTRUCTIONS

2.1 Intended use

The **"LISA"** 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. 75 cm, max. bed base minus 15 cm / **weight**: max. 100 kg) and the safe working load (see type plate) must not be exceeded. The

bed should only be used within enclosed spaces and protected from 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 100kg. 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 children's therapeutic bed **"LISA"** is intended for use only in dry rooms and must only be operated and stored in dry rooms. 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. To prevent overloading and faults in the electric motors, a maximum switch-on time of two minutes must not be exceeded.

The electric-powered adjustment of the head end and 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 and type plate)

VII. In the event of misuse, improper use, incorrect operation or incorrect assembly/repair, no liability will be accepted 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 **"LISA"** 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 note the technical data (item 3/page 13.0 et seq. of these operating instructions).

X. If any malfunctions occur, inform your sales agent immediately.
Particularly in case of damage of the electrical or mechanical components, do not operate the device and disconnect the power plug.

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 2.5 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 "LISA" 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 100 kg.
The safe working load is 170 kg, including accessories.
The electrical adjustment of the head end or the head end/foot end (accessories) must only be used to lift and lower the upper body and legs (observe the position of the patient in the bed).**

2.4 Bed base

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

The maximum user load is 100 kg.
The safe working load is 170 kg, including accessories.
Overloading causes damage and is not permitted.

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

It is not recommended to move the rear and
foot section adjustments to the highest position at the same time,
otherwise it may be too cramped
and therefore 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).

Fig. 21

The batteries must be replaced after a single use.

2.5 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 that prevents unauthorised use of the manual control unit and must therefore always be kept in a separate place.

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

2.6 Revolving doors

The outer doors are secured/opened using flush bolts (Fig. 18). 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. 19). There are two patent locks at the bottom and one at the top.
The doors can also be secured using a sliding rail (Fig. 20). As an option **(accessories)**, the doors can be secured at the top with a U-shaped wooden strip (Fig. 21).

In this case, the doors are locked by turning the locking pins.

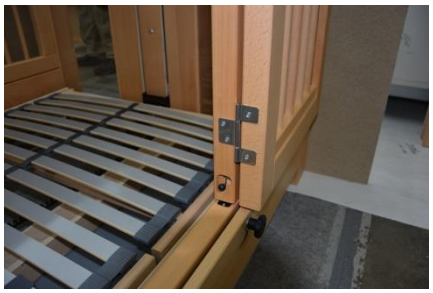

Fig. (18)

Fig. 19

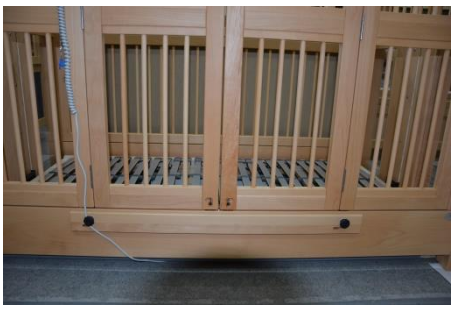

Fig. 20

Fig. 21

2.7 Transport wheels

<u>OPTIONAL:</u> **Accessories**

Caster, 100 x 30 mm, caster double stop.
To lock, press the treadle downwards, release
by pulling up on the treadle (Fig.7).

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

2.8 Securing the inner doors

The inner doors are held in place by a magnet to prevent them opening unintentionally (Fig. 22).

Fig. 22

2.9 Cleaning, maintenance and reuse

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.

Maintenance must only be performed by authorised persons. 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!

2.10 Accessories

Grisu therapeutic bed mattress, flame-retardant.

Retouching pen for metal frame

Surface set for wooden parts

2.11 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

3.1 Bed frame

External dimensions:		1,076 x 2,230 mm
		876 x 1,950 mm
Bed base:		1,000 x 2,000 mm
		800 x 1,700 mm
Bed height:	LISA 102	1,350 mm
	LISA 136	1,700 mm
OK mattress		320 – 1,020 mm
Door height:	LISA 102	1,020 mm
	LISA 136	1,360 mm

Weight bed frame + lifting unit	approx. 204/219 kg
Weight	**LISA 102 / LISA 136**
Head end and foot end	78/86 kg
Bed sides	20 kg
Roll-out bed slats + sundries 8 kg	
Rear frame	21/22 kg
Revolving doors	28/34 kg
Total weight of bed frame:	approx. 155/170 kg

Standard mattress:	Cold foam RG40, 12 cm, approx. 7 kg
Upholstery (OPTIONAL)	42 kg

3.2 Lifting unit: Limoss MD140

Dimensions	92 x 8 x 18 cm (L x W x H)
Weight	approx. 10 kg
Travel	700 mm
Hoist power	2 x 2250

3.3 Control unit: Limoss MC222

Plug-in power supply 240 VAC/50-60 HZ

Control voltage	29 V
Connections	4 motors/1 manual control unit
Protection class	II+III

3.4 Bed base: RINOVAFLEX "JUMBO"

Bed base		95 x 196 cm
Division		2-/4-part
Weight	**JUMBO KF / JUMBO EL**	approx. 32/35 kg
User load		100 kg
Safe working load		170 kg

3.5 Lying surface motor: Limoss MD200

Motors voltage	18 - 35 VDC
Protection class	III
Sound power level	< 38 dB (A)
Rating	max. 2 min./5 switching cycles per min.

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

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

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

Measuring device used: .....

Comments: .....

.....
Date/signature (inspector)