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MOLDOVA EUROPEANĂ
New level of comfort and safety
Affordable price, very early (VEM) mobilization, antibacterial technology, easier disinfection, alarm systems
Electric hospital bed with VEM functions
Famed NEXO
www.famed.com.pl

Electric hospital bed, ICU bed

Famed NEXO

- The comfort of an electric bed
- Affordable price
- Modern approach to rehabilitation
- Optimized for a limited number of hospital staff

Famed NEXO is an electric hospital bed that provides comfort during hospital stay, both in general departments and in intensive care (ICU). The multitude of functionalities, technological solutions, high durability, easier disinfection and pre-programmed rehabilitation positions have been combined with an affordable price.

COMFORT

- Easy standing up and sitting on the bed, full safety - **minimum heigh of 390 mm.**
- **A multitude of available control options.**
- **Pre-programmed most commonly used positions, incl. examination position, vascular positions and disinfection positions for decontamination tunnels.**
- **Recovery support** - indicators informing about the optimal inclination, VEM, boards that can be used during rehabilitation.
- Easy to disinfect, gently lowerable, antibacterial **SoftDropPlus™** side rails that can be lowered below the bed, operated with one hand.
- **USB socket** for charging mobile devices makes the stay in the hospital more pleasant.

SAFETY

- Helping hand in the fight against infections - plastic elements and varnish were made in the bacteriostatic **pSilver™** technology.
- High side rails along the entire length of the bed, **fully compliant with the medical requirements** of EN 60601-2-52.
- Quick removal of the head board with the possibility of using it as an **additional CPR support**.
- **Extended steel reinforcements**, a lockable board and additional stainless steel stabilizers allow for easy rolling of the bed and safe use of reverse-Trendelenburg function.
- Easily accessible CPR levers - even when the side rails are lowered, one on each side of the bed.
- The buttons activating the controls in the side rails and the panel prevent accidental change of bed position.
- Unlocked wheels alarm.
- Low battery warning.

DISINFECTION

- Fewer elements of the bed pallet, reduced spaces between panels, **chassis and moving parts covered in 91% allow to shorten the disinfection time**.
- Plastic and metal elements (varnish) were made with the addition of silver nanoparticles in the **pSilver™** technology.
- IPX6 degree of protection for improved cleaning process - protected against ingress of liquids (optionally available in IPX6 version for automatic washers).
- NEXO has a dedicated position for washing in BDS - a guarantee of proper drying of the bed and reduction of handling time during washing.
- The control cables are hidden in the side rails mechanisms, which reduces the number of hard-to-reach places during manual washing.

ECONOMY

- **High versatility** - long-term, palliative and bariatric care units, the possibility of selecting options for ICU care.
- **pSilver™** bacteriostatic protection reduces the risk of HAI (Hospital Acquired Infections).
- Durable bed pallet filling (HPL) reduces the risk of losing or destroying individual elements and also **shortens maintenance and cleaning time**.
- **IPX6 version available** with solutions dedicated to decontamination tunnels.
- Moving parts and electronic elements **easily accessible to service teams**, the lack of non-standard tools required for repairs facilitates the work of internal services (hospital technical teams).

NEXO FACILITATES THE WORK OF THE HOSPITAL STAFF

- Central wheel lock - keep patient safe with minimum effort.
- Foot controller - saves time and allows you to combine various activities.
- Function locks - they guarantee that the patient will not change the bed settings against the recommendations.
- Nurse Call system - button in bed (buzzer) or the possibility of connecting to the central hospital system (optional).
- One touch positions - reduce complicated combinations with buttons that set the bed to frequently used, useful positions.
- Easy disinfection - choose the variant of the bed for BDS or use the reduced time of manual disinfection thanks to the covering of the moving parts and the **pSilver™** anti-bacterial silver technology.
- VEM (Very Early Mobilization) functions - very early mobilization of the patient, also in the ICU. Faster recovery of the patient.
- Side rails along the entire length of the bed - ensure the patient's safety regardless of the position of the NEXO. **SoftDropPlus™** side rails can be lowered below the mattress platform level, very close to the structure of the bed - plenty of space around the bed, faster recovery of the patient without the risk of trapping the body or breaking the side rails
- The 5th wheel (option) and the rigid boards with extended reinforcements make it easier to roll the bed and overcome inclines or sharp turns.

COMFORT

A **VEM central panel**. Preset positions (examination, emergency, Fowler, cardiology chair, CPR, vascular position, three VEM (Very Early Mobilization) settings, activation button, lockout buttons, mains disconnection indicator.

B **Control for patient.** Activation button, position adjustments, under bed light, access to the nurse call system. Adapted to the visually impaired (contrasting icons and protrusions describing specific functions).

C **Control for personnel.** Activation button, controlling positions of the bed (including longitudinal tilt), highlighted emergency position.

D **VEM mobilization buttons.** They enable very early mobilization of the patient - helps to get out of bed, the patient rests on the railing, increasing the height with the button.

E **Foot control** (option)**.** It allows you to adjust the height and at the same time work with the patient and assist in changing the position in the bed. It also allows the bed to be placed in reverse-Trendelenburg and examination positions.

Preprogrammed positions. You can easily set useful and frequently used bed positions with a single button and save time.

As many as 9 grip points in the side rails, it allows you to conveniently and safely change positions and get out of bed.

USB socket . Possibility to charge personal devices. Equipped with a sealed cap.

Optimal angle indicator. Indicators help to position the patient in the prevention of ventilator pneumonia (VAP).

Double autoregression. Reduction of excessive pressure in a sitting position in the area of the lumbar spine and shin.

Low position. It allows for safe sleep and comfortable sitting on the bed and getting up. It also allows for easy transfer to a wheelchair.

ONLY 35% HOSPITALS MEET THE STANDARDS OF COMFORT AND SAFETY[1]

We have created the Famed NEXO bed to enable hospitals to improve those standards and quickly raise these statistics

Although the statistics are improving (in 2015 the figure was 74%), still as many as 65% of examined hospitals do not meet the standards defined by an independent organization supervising the health and safety of patients, Leapfrog.

The standards concern primarily:

- percentage of patients who get bedsores in the hospital,
- percentage of patients who had an incident of falling out of bed or other medical incident.

SAFETY

SoftDropPlus™ side rails along the entire length of the bed.

Gas springs ensure a quiet and smooth lowering motion. The constant distance between the elements ensures comfortable and safe usage, preventing accidental trapping of hands. The movement can be initiated with one hand, while the other hand can be used to protect the patient.

Use the head board as a CPR support.

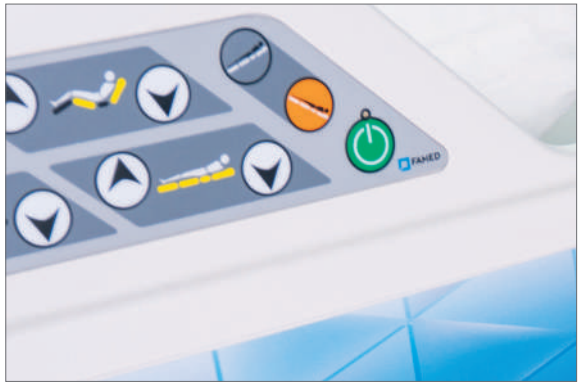
The unique design of the SoftDropPlus™ side rails gives an unprecedented amount of space for a resuscitation action or a mattress. Additionally, the quickly removable, stable head board can be used as additional support under the patient in the case of CPR action.

CPR levers are easily accessible on both sides of the bed.

Convenient to use, easy to spot levers are available on both sides of the bed, regardless of the position of the side rails - in full range of motion of the backrest. The proximity to the patient makes it possible to check his condition on an ongoing basis when lowering the backrest in a life-threatening situation.

Use the best reverse-Trendelenburg angle on the market.

Foot board with lock, 18,5° tilt and extended, large diameter reinforcements allow you to safely move the bed and perform exercises and elements of upright standing therapy. Tilts also help to move the patient on the mattress.



Controls with activation systems.

They reduce the risk of accidental change of position by the patient or the staff (during washing or handling). Only pressing the green activation button enables the work of the controllers.

Central wheel lock.

The levers on both sides of the bed allow easy and quick blocking of the bed - they can also be operated from the front. Clear color coding and acoustic confirmation of the lever position make it easier to recognize the brake position.

NEXO FOR DECONTAMINATION STATIONS

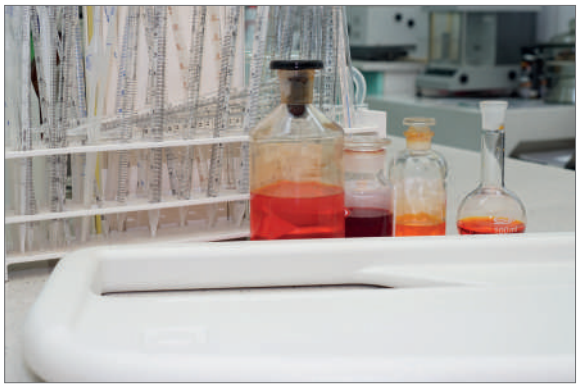
The bed variant in the IPX6 standard enriched with solutions that make the bed resistant to the conditions of BDS.

Famed Żywiec beds have been used in decontamination stations for years. Now after gathering experience with washing in the conditions of BDS we go one step further by introducing chemical protection. The NEXO bed for decontamination tunnels was made with attention to detail appropriate to the conditions that go with this disinfection method.
The entire structure, including the inside of the steel profiles, is protected using the modern CDC method (Cathodic dip coating). Protecting the bed after it has been subjected to metal processing guarantees high strength of welds, connections or holes intended for the outflow of cleaning fluids. Dedicated washing position, controllers prepared for washing in BDS, modifications and stainless details allow for trouble-free operation.

UNIQUE HELPING HAND IN THE PREVENTION OF HAI

Study shows that hospital acquired infections (HAI) are a major threat for both health care providers and the patients[2]. Increased length of stay, rising costs of patient treatment, risk of lawsuits are a big danger for financial situation of the hospital. This is also an inconvenience and an increased risk of hospitalization for the patient. WHO guidelines on hand hygiene in health care clearly states that hands are the most common route of infection[3] - proper hygiene can be supported by technology to limit the bacteria spread. Equipping your hospital with the Famed NEXO bed with pSilver™ technology is one of the best ways to support the HAI prevention program in your facility. The use of pSilver™ technology in places most often touched by the patient and hospital staff reduces the multiplication of dangerous bacteria, fungi or viruses. All plastic and painted elements are made with custom compound with silver nanoparticles.

DISINFECTION



Bacteriostatic pSilver™ technology Plastic elements contain silver nanoparticles - this is a lifetime protection and a guarantee of less frequent reproduction of viruses and bacteria. We use a similar antibacterial additive in the varnish powder. Famed Żywiec has been offering and refining this technology for several years.

Smart-thinking: panels filling the mattress platform. The reduced number of elements that staff have to disassemble for cleaning and the reduced number and size of spaces between the HPL elements means reduced cleaning and disinfection times. The mattress platform cover as much as 91% of the surface, protecting the actuators and pantograph chassis against contamination.

Optimal cables routing. A bed of this class has not only power cables, but also many control and grounding cables. The main one, connecting the bed with side rails has been hidden in the side rails mechanisms. The cables from the control panel are also covered, thanks to which they do not get dirty and are easily accessible for service teams.

Dedicated version for automatic washing. The version for washing stations is not only the IPX6 standard, it is also a completely new technology of protection and hundreds of hours of testing in laboratories and washing chambers.

Dedicated button - washing position. At the push of a button, all sections of the bed and the entire bed are set in a dedicated position for washing in BDS. Thanks to this, the bed is not exposed to damage, and the drying process runs smoothly.

Tested resistance to disinfecting agents. The more and more aggressive fight against germs means the constant development of disinfectants. Famed Żywiec, as one of the few manufacturers of medical equipment, has its own laboratory that tests every available agent. We deliver our products with a compatibility list and cleaning recommendations.

Antibacterial pSilver™ technology

HPL transparent to X-rays (MAE 0.39 mm Al)

Bright, contrasting colors on the panel and protrusions on the icons dedicated for visually impaired.

Head board acting as a support for CPR

Side rails along the entire length of the bed

Foot board lock to prevent it from falling out during transport and enabling VEM therapy and rehabilitation

Control panels dedicated to patients and staff

USB sockets - option

Lowest height of 390 mm

Possibility to personalize the bed

Plastic bumpers (less damage for medical equipment and walls)

Hooks with position adjustment

Innovative VEM panel, a multitude of quickly available positions

Anatomical hand grip and very early mobilization panel

Acoustic warning for a low battery

Easy access to CPR levers

Four sockets for mounting accessories

Mattress holders

Bed length extension

SoftDropPlus™ side rails that lower below the mattress platform

Central wheel lock

ECONOMY

While designing the NEXO bed we wanted to offer patients comfort and safety and hospital staff reliable equipment, which would be easy to operate and economical. We want you to be able to afford more.

Legendary Quality and proven effectiveness

NEXO is the next version of the popular hospital bed, the reference base of which reaches almost one hundred countries around the world. Thousands of units proved the quality and durability, and the feedback from the market allowed for even better development of functionalities. Buying a NEXO means buying a symbol of quality and experience.

Low service costs

Famed NEXO is a product of the legendary producer of medical devices – Żywiec factory. A Polish product also means Polish service - with decades of experience and a short response time. NEXO was created with the help of our service technicians, so many service activities are carried out in a simple and quick way.

Increasing biological safety

Fewer places for dirt to collect, a variant for decontamination stations and **pSilver™** plastics and varnish technology help the hospital in the wark agains the risk of infection. This reduces the amount of HAI (Hospital Acquired Infections), which shortens the patient's recovery time and reduces the costs of treating those infections.

Versatility - one bed for many needs

Full compliance with the EN 60601-2-52 standard, full-length side rails, high stability, controls locks, compatibility with orthopedic accessories and functionalities allowing for use in ICU departments ensure high versatility of the product, depending on the current number of patients in the hospital.

Version for BDS

With a huge investment in the automation of the cleaning and disinfection process, it is equally important to choose a durable and well-thought-out design that has proven its quality in hundreds of washing cycles. The NEXO bed has been adapted to decontamination stations with temperatures reaching 65-80° C.

More beds for your facility

Nexo will meet the need to improve the patient's comfort without compromising the hospital's level of safety and will enable you the purchase more beds, translating into increased profitability of the facility.

Reduce re-preparation time for a new patient

The reduced number of items operators have to pull out for cleaning and the reduced number and size of spaces where contamination can enter means shorter cleaning and disinfection times - staff can get more beds ready to go back to work in shorter period of time.

65% OF THE ICU PATIENTS CAN BE MOBILIZED OUT OF THE BED[4]

Early mobilization is one of the most discussed topic in terms of the ICU. Study shows that out-of-bed rehabilitation is possible in **over 65% of the intensive care patients**.

One of the most important thing to consider is the neurological state of the patient - general calmness and ability to follow simple commands are required. An out-of-bed mobilization is any activity where the patient sits over the edge of the bed (dangling), stands, walks or marches.

The correct level of mobilization should be determined by the patient's condition and all the safety criteria[4]:

- respiratory considerations,
- cardiovascular considerations (especially the presence of medical devices),
- neurological considerations,
- other (after surgery requirements/general condition).

The side rails lower below the mattress and below the mattress platform.

This allows patient to slide off the mattress safely when standing up, without the risk of pinching his body. Additionally, it protects the side rail mechanism against breaking.

VEM

Very Early Mobilization - Very early mobilization is an attempt to ensure that the patient returns to full health as soon as possible, shortening the time from surgery to the first rehabilitation treatments.

Very early mobilization of the patient is an essential element of any modern hospital. Famed NEXO makes it easier for the patient to get out of bed and exercise by using dedicated VEM panels, the highest longitudinal tilt parameter on the market, as well as foot board lock, stable boards and side rails with many places for a firm grip. Famed NEXO can help the patient get up and away from bed, encouraging him to regain shape and health. For the hospital, this means faster discharge of patients who are as close to their full recovery as possible.

1 In the **first phase,** based on the patient's condition, the medical staff can decide to raise the backrest to a position of 30° or higher to prevent VAP[5]. At the push of a button on the central panel, the bed backrest will rise up and automatically stop when it reaches a 30° incline, making it easier for the medical staff to work with the patient and providing a better recovery for the patient.

2 In the **second phase** – with the assistance of the medical staff – the bed will do extreme reverse-Trendelenburg position or, in the final phase, a cardiac chair position. This way the staff can check if the patient's condition will allow him to leave the bed in the third phase. By verticalising the patient (the best angle of 18.5° on the market), his ability to stand up can be tested. Using the tilt or using the top as a foot rest, we can do some basic exercises and the physiotherapist can begin a muscle recovery program.

3 In the **third phase**, with the assistance of the medical staff (3), the patient may try to get up. If the patient is strong enough to try to stand on their feet by his own, he can use the dedicated control panel on the outside of the side rail (3B). The anatomical hand rest on the side rail is equipped with up / down buttons (3C), allowing the patient to be raised to a level where they can stand up on their own. If the patient is to weak, medical staff assistance is required.

A hospital bed is a purchase that must have its economic justification. At the same time, we want something more for our patients, something modern, which will allow them for a comfortable and safe stay in the hospital. It seems that Famed Żywiec perfectly combines these features - when we buy a Famed NEXO bed, we know that we buy high quality-equipment from the Polish factory has been working in our facility for many years. At the same time, we value ease of use and easy disinfection - said Evgenii Volkov cardiologist and medical director of the Impuls Medical Center in Kyiv.

FUNCTIONALITIES - AVAILABLE OPTIONS

10-button wired remote control. Controls can be locked from the remote itself - by pressing a button combination.

A panel for the blind and partially sighted (3D-profiled, contrasting markings).

A panel for personnel with quick access to the Trendelenburg tilt.

Unlocked wheel alert and low battery warning

VEM mobilization buttons for the patient (up and down movement available when holding the side rail and standing up).

Central panel (supervisor) with VEM functions, one-button positions and electric CPR.

USB socket for charging mobile devices.

Ambient LED light under the bed.

Sockets for mounting the IV poles in four corners of the bed (two sockets for a hand grip are also available in addition to those 4 sockets).

Bed length extension with lock (not available in the Light version) allows for a comfortable stay also for taller patients.

Bedpan holder

Urine bottle holder

Foot boards with lock.

Fifth wheel makes it easier to guide the bed in narrow places.

Integrated storage space for the power cord, e.g. when transporting the bed.

Plastic hooks that can be removed and moved.

The NEXO bed configurations are selected to ensure maximum comfort and functionality in various price ranges.

NEXO Light has electric control, making it easier to operate the bed - both by the patient and the staff (using a wired remote control). The bed has comfortable, individually locked, large wheels (150 mm). Staff can use the best reverse-Trendelenburg tilt on the market, easy-to-disinfect mattress platform, pSilver™ anti-bacterial technology.

NEXO Comfort additionally introduces the philosophy of very early patient mobilization (VEM) to the ICU and residential departments, thanks to lockable board and a panel with dedicated buttons (also used for rehabilitation). Additional comfort is also offered by a multitude of dedicated positions on the central panel and a central wheel lock. NEXO Comfort can be adapted to taller patients due to the extension of the mattress platform. The look of the bed is made more attractive by colorful graphics in side rails and boards. As an option, you can also order a foot controller and alarm systems.

NEXO Premium introduces to the bed the control in the side rails (from the outside - for the staff and inside - 3D, contrasting buttons for visually impaired) and enables full use of the bed functionality in very early mobilization approach. NEXO Premium is equipped with dedicated patient mobilization panels (VEM).

Function	NEXO Light	NEXO Comfort	NEXO Premium
Panel for patient with aids for visually impaired	-	-	●
VEM rehabilitation panel for third phase of mobilization	-	-	●
Floor light lowering the risk of falls	-	-	●
Lockable boards	●	●	●
Nurse call integration module (WL-99.78)	-	-	○
Remote control (10 buttons) with lock	●	●	●
Central lock	-	●	●
Two additional lock levers on the head side (PL-14)	-	○	○
Individual lock	●	-	-
Length extension	-	●	●
VEM central panel	-	●	●
Graphics in side rails (inserts)	○	●	●
X-ray translucent, easily removable bed pallet	●	●	●
Backrest inclination indicator	●	●	●
Foot control (PL-63.67)	○	○	○
Unlocked wheels alarm (WL-99.77)	○	○	○
Adaptation for automatic washing (BDS)	○	○	○
Degree of protection IPX4*	●	●	●

KEY: - NONE | ○ OPTION | ● INCLUDED

Accessories and options (compatible with every version)**:**

- Height extension adapters (mattress up to 22 cm). [PL-60]
- Fifth wheel. [PK-01.3]
- Orthopedic frame. [RW-09.1]
- Oxygen tank holder (vertical). [PL-36.6]
- IV pole. [WK-12, WK-17]
- Bedpan holder. [WL-20.8]
- Urine bottle holder. [WL-19.7]
- Hand grip. [UR-7.2]
- X-ray cassette tunnel in back rest. [PL-18.5]
- Bed linen shelf. [PL-67.23]
- Mattress for length extension. [MC-47 (160 mm), MC-47.1 (120 mm)]
- 12 cm foam mattress. [MC-28.05W1]
- 16 cm foam mattress. [MC-28.05W5]
- Foam anti-decubitus mattress - 12 cm. [MP-01]
- Foam anti-decubitus mattress - variants - on request.
- Active air anti-decubitus mattress - variants - on request.
- USB socket. [WL-99.75]
- Single color inserts. [PL-12]
- Graphic inserts - custom design. [PL-12, extra paid]
- Bed tilt indicator. [PL-24.4]
- 30° backrest tilt alarm. [WL-99.79]
- Emergency stop of the bed (STOP button). [WL-99.76]

Technical data	LR-15
Length	2180 mm (+ 325 mm bed length extension)
Outer width (with side rails)	986 mm
Internal width (between side rails)	885 mm
Mattress width	850 / 860 mm
Max. mattress thickness	160/220[6] mm
Height reulation (min - max)	390 - 800 mm
Maximum backrest angle	70°
Maximum thigh segment angle	40°
Trendelenburg tilt	16,5°
Reverse-Trendelenburg tilt	18,5°
Backrest autoregression	120 mm
Autoregression of the thigh section	45 mm
Clearance under the bed (height x length)	150 x 1500 mm
Percentage of chassis cove by the mattress platform	91%
Ingress protection (according to IEC [60529] standard)	IPX4*
Maximum load (SWL)	280 kg
Wheel diameter	150 mm

* Control and power supply system protected in IPX6 standard.

[1] HOSPITAL-ACQUIRED CONDITIONS, DATA BY HOSPITAL ON NATIONALLY STANDARDIZED METRICS - The Leapfrog Group
[2] Guidelines for prevention of hospital acquired infections, Indian Journal of Critical Care Medicine, 2014 Mar; 18(3): 149–163
[3] WHO guidelines on hand hygiene in health care: A summary. 2014. Mar 10
[4] Early Mobilization of Patients in Intensive Care: Organization, Communication and Safety Factors that Influence Translation into Clinical Practice, Critical Care volume 22, Article number: 77 (2018)
[5] Hunter J.D., Corry P.R.: „Ventilator – associated pneumonia" BJA CEPD 2002
[6] Requires the addition of side rails height extension - PL-60.

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Famed **MP-01**

FAMED MP-01 ПРОТИВОПРОПРОЛЕЖНЕВЫЙ ПЕНОПОЛИУРЕТАНОВЫЙ МАТРАС ДЛЯ ПРОЛЕЖНЕЙ 2 СТЕПЕНИ

Высококачественный матрас, используемый для профилактики и лечения пролежней до 2 степени (EPUAP) и для лечения боли, связанной с их возникновением. Четырехслойная конструкция сделанная из пенополиуретана разной плотности и толщины с продольными и поперечными разрезами подстраивается под форму тела пациента, снижая давление на ткани и поддерживая кожу пациента в надлежащем состоянии. Максимальные эксплуатационные параметры матраса обеспечивает инновационный поролон EvoPore HRC (High Resilience Climate). Доступны четыре размера матраса (1900x760 мм, 1960x840 мм, 2000x850 мм и 2060x865 мм), также можно выбрать высоту (12/14/15/16 см). Матрасы соответствуют требованиям медицинских учреждений всех типов.

БЕЗОПАСНОСТЬ

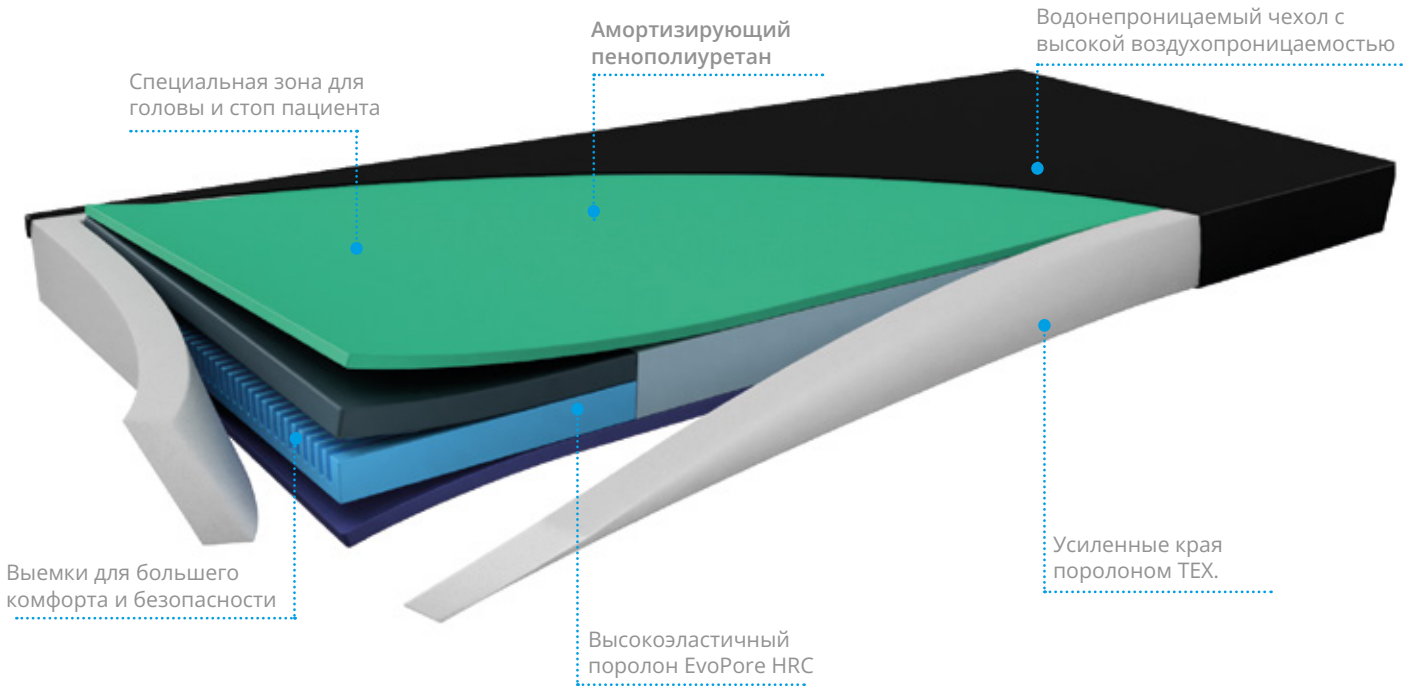
Пять видов пенополиуретана разной плотности, помещены в матрас, который разделенный на 3 секции: голова, пятка и туловище, сохраняют идеальное распределение веса даже в экстремальных положениях пациента. Амортизирующий поролон (Shock Absorbing Foam) очень быстро реагирует на оказываемое на него давление и адаптируется к форме тела пациента, защищая участки, подверженные пролежням. Двухслойное покрытие сводит к минимуму силу движений и предотвращает повреждение кожи пациента. Более жесткая пена, размещенная по краям, стабилизирует положение пациента и снижает риск падения с кровати.

КОМФОРТ

Высокоэластичный поролон EvoPore HRC (High Resilience Climate) обеспечивает как здоровый спокойный сон, так и процесс регенерации. Его многоячеистая структура идеально прилегает к телу пациента, обеспечивая комфорт даже при длительном пребывании на кровати. Дышащий чехол поддерживает кожу пациента в необходимом состоянии. Жесткая пена ТЕХ по краям матраса обеспечивает устойчивость в положении сидя и помогает сохранить равновесие, когда пациен встает с кровати. Специальные прорези в конструкции матраса обеспечивают непрерывный поток воздуха и идеальные условия для выздоровления.

ДЕЗИНФЕКЦИЯ

Водонепроницаемое и дышащее покрытие предотвращает проникновение жидкостей внутрь матраса. Высококачественные материалы, используемые для изготовления чехла, обладают антибактериальными и противогрибковыми свойствами, ограничивающими рост микроорганизмов. Молния позволяет быстро снять чехол. Высокая устойчивость ко всем дезинфицирующим средствам, используемым медицинскими учреждениями, увеличивает срок службы матраса и снижает расходы по его использованию.



Высокая воздухопроницаемость | Антисептическое покрытие | Водонепроницаемое и паропроницаемое покрытие | Гибкое покрытие для минимизации силы сдвига | Вес пациента с гарантированной терапевтической эффективностью

USER MANUAL

Medical Bed NEXO, HORUS
Additional name:
Medical bed (Rehabilitation bed) LE-02.1

Factory no.: .....
.....

Version 20.00
Issuance date: 07.03.2025

FAMED ŻYWIEC Spółka z o.o.

Appendixes: 2, 3, 4, List of Spare Parts.

As provided in the regulation of the European Parliament and the Council (EU) 2017/745 of 5 April 2017 on medical devices, it is a class I device.

The producer declares that the product meets general safety and performance requirements specified in Appendix 1 of the regulation. The Conformity assessment was carried out on the basis of the technical documentation in accordance with Appendix II and III of the regulation.

Among other things, the bed meets the requirements of the following standards: PM-EN 60601-1 Medical electrical equipment - Part 1: General requirements for basic safety and essential performance, PN EN 60601-2-52 Medical electrical equipment - Part 2-52: Particular requirements for basic safety and essential performance of medical beds.

CE

Manufacturer:

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Dear Clients,

Congratulations on choosing the right product, we wish you would find a lot of satisfaction while operating it.
Please read this manual very carefully as it includes all the vital information and notes from the producer concerning proper installation and maintenance of the product as well as its service.

FAMED ŻYWIEC Spółka z o. o.

General notes

- ***The use, maintenance as well as servicing of this product performed in other ways than those, which have been stated in this manual is not allowed and may result in damages, which will encumber the user and which will not be a matter of producer's responsibility.***
- ***When the operation and parameters of the product do not match the description in item 'Operation' in this manual, the use of the product is not allowed and any defects have to be reported to the producer or the supplier.***
- ***Every repair of the product must be done by a factory service and recorded on the list of repairs, which is supplied with the guarantee certificate. Disregarding this requirement will cause the guarantee for the product to be invalid.***
- ***Before starting any repairs the bed must be disconnected from mains.***

Notes concerning safety

The sign shown below says: *"Warning! - Follow the instructions for safe use ".*

A label showing this sign is placed on any parts or mechanisms, which may prove to be harmful to the patient or the personnel if their operation does not comply with the descriptions found in this Operating Manual.

- ***The bed has to be connected to mains in consistence with its name plate!***
- ***The bed should not be in the place which obstructs its disconnection from the mains!***
- ***Do not use the cable when it is damaged or its insulation is worn out!***
- ***Do not connect the bed to mains in places where there is a danger of an explosion!***
- ***Use of accessories, additional equipment, cables or spare parts other that those offered and/ or advised by the producer may cause an increase of emission and/ or decrease of bed resistance to all electromagnetic phenomena.***
- ***While activating the function which changes the angle of the couch segment, caution should be taken. Moving elements (driven by servo-motors) may cause trapping of fingers or hands. One may not rest his/her hands on those bed elements which are situated close to moving elements of the structure.***

- ***If a patient is lying in bed without medical supervision, the bed should be placed in the lowest position.***
- ***If the patent is left without supervision from medical staff lock the bed functions which, when activated, can create danger to the patient.***
- ***If patient's condition (such as confusion caused by medical reasons or clinical condition) can lead to incarceration, bed pallet should be set in horizontal position while unattended (unless medical staff advice differently).***
- ***One should avoid danger to safety caused by improper operation of cables connected to mains, e.g. stretching of cables, or squashing between moving parts, driving through them.***
- ***Do not roll the bed over electric cables!***
- ***Do not put your hands on the elements of the bed which are placed near the moving parts. Be particularly careful when you change the position of the bed's moving parts (handrails, segments, etc.).***
- ***When adjusting couch to the minimum height, be especially careful as the hands may be crushed by the handrails when they are in the lowered position.***

Notes concerning start-up, operation and maintenance

- ***During normal use, the bed must be connected to the mains.***
- ***The bed, during use, should not be in the place which obstructs its disconnection from the mains!***
- ***When using the bed close to medical equipment which is operating and is using high frequencies and to defibrillators one should follow closely operating instructions for that equipment. Improper operation may become a source of dangerous accidents. There is a danger of serious burning of the patient through the contact with metal parts of the bed or its equipment.***
- ***Before moving of bed has been started one should switch off the wire net and wire equalizing potentials***
- ***The bed should be moved at least by 2 people***
- ***The bed should be moving in minimal height***
- ***Do not move the bed through electric wires.***
- ***Do not sit on the backrest!***
- ***Full functionality of the controls in the side rails is available only when bed is pluged in to the mains!***
- ***While the transportation do not pick up the device using bumpers, side rails nor head/foot boards. Bed's pallet frame pick up using the stringer or beam under the head/foot board.***
- ***Do not sit sideways on an uneven thigh and shin segment!***
- ***It is forbidden to place covers between the framework of segments and the filling boards!***
- ***In the event that it is necessary to use a defibrillator, the side rails must be lowered, ensuring that the patient is not in contact with the rails, boards (head side and leg side), drip hanger, or any other application parts.***

Notes concerning cleaning and disinfecting

The product must be cleaned and disinfected in accordance with point 6.2 of this user manual.

Disregarding the above requirements concerning cleaning and disinfecting shall result in losing the guarantee for the product!

CONTENTS

1 Proper use and application

1.1 Application

Bed is destined for lying for adult patients during diagnosis, monitoring and treatment of diseases.

The bed is designed for use in environments:
a. 1: intensive care, hospital branches with 24-hour medical supervision and constant monitoring, where the bed is used in medical procedures necessary to maintain or improve the vital functions of the patient.
b. 2: Acute care, hospital wards and other medical facilities where medical supervision and monitoring are required, and the bed is often used in medical procedures to maintain or improve the patient's condition.
c. 3: Long-term care, hospital wards, where medical supervision is required, and monitoring is provided, if necessary, the bed can be used in medical procedures to maintain or improve the patient's condition. (This environment includes nursing homes, rehabilitation and geriatric applications).
d. 5: Outpatient care in hospitals and other medical institutions, where the bed is used under medical supervision for people resulting from illness, injury or disability for the treatment, diagnosis or monitoring.

1.2 General requirements

The product is intended to be used indoors. Required climatic conditions: temperature from +10 to +40ºC, acceptable change of surrounding temperature during 8 hours should not exceed 20°C, relative humidity of the air should range from 30 to 80%, atmospheric pressure from 700 to 1060 hPa. The product should be used, maintained and serviced according to the indications of this manual.

Caution!

Using, maintaining and servicing the product in other way than indicated in this manual is not permitted and may lead to damages for which the user is to blame and for which the producer is not responsible.

Installation of other accessories than those offered by the producer for the product is allowed only on the basis of a written acceptance of the producer.

1.3 Duties of the user

User: any individual or corporate body who uses the product as its owner, lessee, pledge or who has a different right to the product as well as an entity who uses the product on its own or on whose behalf it is used.

The user must ensure that the product shall be used exclusively in conformity with its destination and that it is used in appropriate conditions and in consistence with this manual. The user is also obliged to take all necessary precautions in order to prevent all life and health hazards concerning the user, patients and any third party. Only authorised persons who underwent special training and are acquainted with this manual may operate the product. The user must also ensure that all persons who operate the product have read, understood and apply instructions contained in this manual. A serious medical incident related to the device should be reported to the manufacturer and the competent authority (URPL).

1.4 Technical data

Version I

Length of the bed	2180 ± 20 mm + pallet extension 325mm
Width with rails	985 ± 10 mm
Maxium height	800 ± 20 mm
Minimal height	390 ± 20 mm
Mattress dimensions (length x width)	2000 x 850 mm
Maximum mattress thickness	160 mm
Maximum load	250 kg (185kg patient and 65kg equipment)

Version II

Length of the bed	2180 ± 20 mm + pallet extension 325mm
Width with rails	985 ± 10 mm
Maximum height	800 ± 20 mm
Minimal height	390 ± 20 mm
Mattress dimensions (length x width)	2000 x 850 mm
Maximum mattress thickness	160 mm
Maximum load	280 kg (215kg patient and 65kg equipment)

Maximum backrest elevation angle	70° ± 5°
Maximum thigh segment elevation angle	40° ± 5°
Trendelenburg position	16,5° ± 3°
Reverse-Trendelenburg position	18,5° ± 3°
Autoregression of the backrest	120 mm
Autoregression of the thigh	45 mm
Castors diameter	150 mm
Weight of the bed without equipment and mattress	~135 kg
Voltage	100-240V~ 50/60Hz
Maximal power consumption	370VA
Class of protection before electric paralysis	II
Type of application part	B
Protection class	IP-X4
Type of operation	intermittent (2 min operating / 18 min pause)
Usage period	10 years
Density of typical mattress foam	35 kg/m3
Ground clearance of the base platform	150 mm

For the special client request it is possible to produce the product with change parameters, not lowering its safety and functionality.

1.5 Description of elements and functions

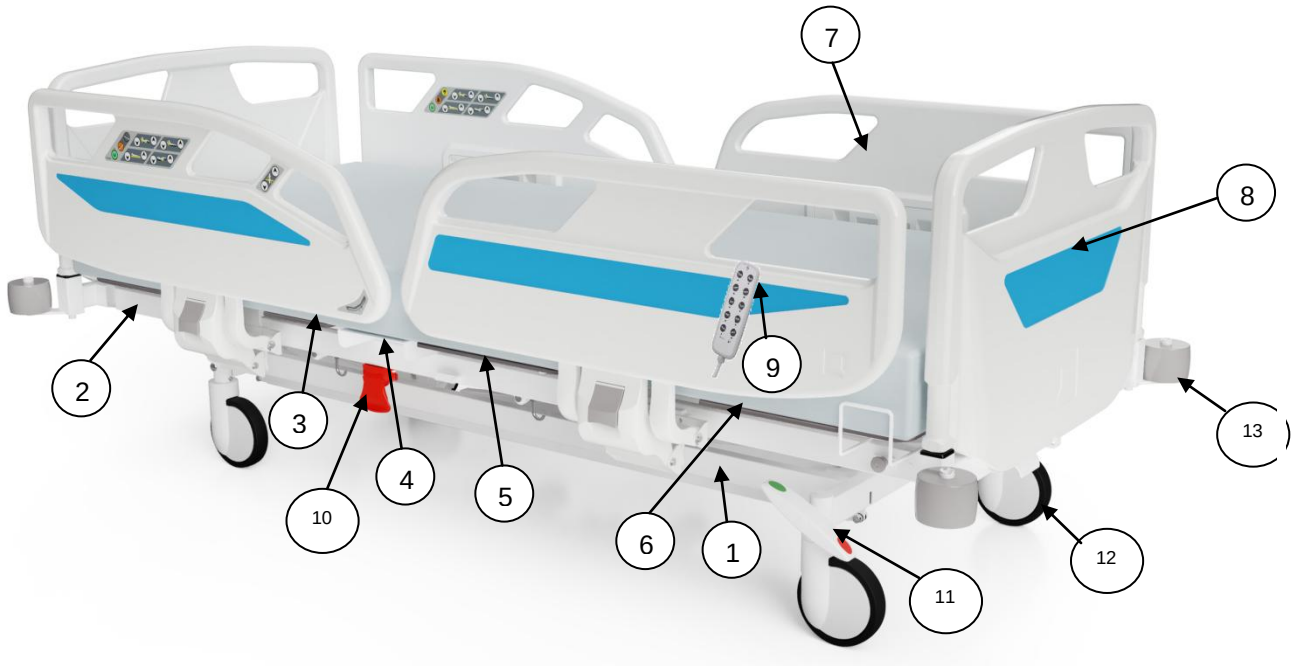


Fig. 1.5a The main parts of the bed NEXO, HORUS, LE-02.1

Pos. on fig.1.5a	Description
1	Base
2	Frame of pallet
3	Back rest segment
4	Permanent segment
5	Thigh rest segment
6	Shank rest segment
7	Side rail
8	Head/foot board
9	Wired control
10	CPR lever of back rest segment
11	Lever of central brake
12	Wheel (dual wheels- option)
13	Bumping block

1.6 Description of the product

Elements of the bed NEXO, HORUS, LE-02.1:

- Frame of pallet,
- Back rest segment ,
- Side rail ,
- Foot/Headboard,
- Control panel,
- Central control panel,
- Removable pallet boards,
- CPR lever,
- Bumpers.

Nexo, Horus, LE-02.1 bed is made of powder coated steel. The chassis and the mattress platform frame are made of a steel rectangular profiles. The running gear can be equipped with a central (COMFORT and PREMIUM version) or an individual lock (LIGHT version). The mattress platform frame is made of a steel rectangular profiles with a filling made of a decorative board. The mattress platform frame is equipped with elements (fenders) protecting against hitting the walls of the rooms during the bed

transportation. The mattress platform is 4-sectinal. Bed mechanism enables of changing: the height of the mattress platform, angular position of the backrest and legs, Trendelenburg and anti-Trendelenburg tilt and bed transportation. Changing the bed height and longitundial movements (Trendelenburg and anti-Trendelenburg) are performed by using a pantograph mechanism. Changing the angle of the backrest and the legrest (thigh section) are performed via using electric actuators. Leg segment is adjusted by using a reversible guide. Head/foot boards and side rails are made in the blow molding technology, along the entire length of the bed. On the customer's request, it is possible to use metal side rails along ¾ of the bed length. The side rails can be attached to the mattress base segments or to the bed frame. Bed is equipped with internal source of electricity which, in the case of power failure, enables of performing the movements necessary to ensure the patient's safety (leveling the mattress platform, Trendelenburg). The number of performed cycles (one cycle is defind as all electrical functions in full range) depends on the battery charge status, when charging the battery about 12 hours. it is possible to perform about 3 cycles. The bed is equipped with actuators for quick backres segment (CPR function) and with autoregress function (for backrest and thight rest segments). The bed is equipped with potential equalization clapm. Foam mattresses (standard, passive anti-decubitus mattresses) or active anti-decubitus mattresses are offered with the bed.
In order to disconnect the bed from the mains, remove the plug of the bed's power cable from the mains socket and wrap the cable, e.g. around the fenders (fig. 1.6a).

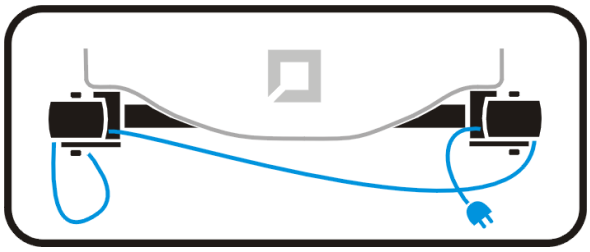


Fig. 1.6a The sample way of power cord attachment for transport

The bed is offered in three configurations, both for I and II version. The differences between the configurations is included in the below table.

Bed in LIGHT version	Bed in COMFORT version	Bed in Premium version
The Light version is equipped with wired hand control for movement adjustement. The wheels are individually lockable.	Comfort Version is equipped with wired hand control and central control panel. Bed is equipped with central wheel locking and adjustable length.	Premium Version is equipped with wired hand control, central control panel and controls built in side rails both for medical staff and patients. Bed is equipped with central wheel locking and adjustable length.

The producer reserves the right to introduce in the product structural modifications resulting from technical progress which are not covered in this user manual.

The producer reserves that all parameters and accessories can be modified or change, especially construction, technology and materials, not lowering accepted parameter technically-user and safeties of products.

1.7 Safety

The structure of the product assures its safe operation and use on condition that the rules comprised in this manual are followed.

- **The weight of the patient and additional equipment mounted to the bed must not exceed 250 kg in version I and 280 kg in version II.**

- **If patient's condition (such as confusion caused by medical reasons or clinical condition) can lead to incarceration, bed pallet should be set in horizontal position while unattended (unless medical staff advice differently). There is possibility of blocking the electrical functions of the bed from the central panel.**

- **One should avoid danger to safety caused by improper operation of cables connected to mains, e.g. stretching of cables, or squashing between moving parts, driving through them.**
- **If you leave the patient unattended, the bed must be levelled and it should be blocked.**
- **Do not put your hands on the elements of the bed which are placed near the moving parts. Be particularly careful when you change the position of the bed's moving parts (handrails, segments, etc.).**
- **Be extra careful and move away from the bed when setting the bed pallet to the lowest position , because your feet may be crushed by the lowered rails. The side rails should be raised during the movements of the bed with the patient.**

The sign shown below says: "Warning! - Follow the instructions for safe use ".

A label showing this sign is placed on any parts or mechanisms, which may prove to be harmful to the patient or the personnel if their maintenance will not comply with the descriptions found in this Operating Manual.
When operating the product the user has to pay attention to the elements and mechanisms marked as shown above.

1.8 Critical parameters

- Maximum allowable load in version I - 250 kg

For 250 kg load, mass distribution on particular sections should be not more than:

- Backrest section - 112,5 kg
- Seat section - 62,5 kg
- Thigh and shank rest section - in total 75 kg

Or:

  - Patient's weight - 185 kg
  - Weight of equipment - 65 kg

- Maximum allowable load in version II - 280 kg

For 280 kg load, mass distribution on particular sections should be not more than:

- Backrest section - 126 kg
- Seat section - 70 kg
- Thigh and shank rest section - in total 84 kg

Or:

  - Patient's weight - 215 kg
  - Weight of equipment - 65 kg

  - Weight of a typical mattress - 9 kg
  - Other equipment - 56 kg

- Maximal load of the hand grip - 75 kg
- Maximal load of the drip bottle holder - 2 kg per one hook/ basket

1.9 Electromagnetic compatibility

The bed Nexo, Horus*, LE-02.1* is an electric appliance. Electric appliances are a source of electromagnetic radiation and themselves are under its influence. Therefore, use of an electric appliance requires some safety precautions connected with electromagnetic compatibility.
In tables: *item 7 Characteristics of electromagnetic environment* – electromagnetic environment in which The bed Nexo, Horus*, LE-02.1* should be used is described. Recommendations and warnings which should be followed by the users were also presented.

The user should follow indications and warnings on plates.

Caution!

Use of different accessories, additional equipment, cables, spare parts than those offered and/ or recommended by the producer may cause an increase of emission and/ or decrease of bed's resistance to all electromagnetic phenomena.

Recommended distances between portable radio-transmitters and product

Rated output power of the transmitter in watts [W]	**150 kHz to 80 MHz** $d = 1{,}2\sqrt{P}$ **distance in meters**	**150 kHz to 800 MHz** $d = 1{,}2\sqrt{P}$ **distance in meters**	**800 MHz to 2.5 GHz** $d = 2{,}3\sqrt{P}$ **distance in meters**
0.01	**0.1**	**0.1**	**0.2**
0.1	**0.4**	**0.4**	**0.7**
1	**1.2**	**1.2**	**2.3**
10	**4**	**4**	**7**
100	**12**	**12**	**23**

For transmitters whose maximum output power is not detailed above, the separation distance should be calculated on the basis of the formulas given above. P is the power in watts (W) as declared by the producer of the appliance.
Attention
The above recommendations may be inadequate in some situations. Propagation of electromagnetic waves can be absorbed or reflected from buildings, structures and people.

1.10 Potential equalization clamp

The bed has an internal equipotential bonding connected to the clamp, marked with the symbol  .

CAUTION!

During use, the bed must be connected to the equipotential bonding of the hospital room.

2 Transport and first use

2.1 Transport

There is a possibility to transport the product by any covered transport means. While transporting, it is necessary to immobilize the truck and protect it against moisture.
The transport conditions are as follows:

- temperature: from –10^{O}C to 60^{O}C,
- relative humidity: from 20% to 80%.

While product transporting, storage and unpacking, the temperature gradient should be less than 10^{O}C per hour.
After transporting a product into a building where it is to be installed, a product should be left for at least 12 hours. Only after this time you can unpack, install and start-up the device..
Storied storage is permissible in accordance with the packaging marking. In the absence of the marking, storied storage is prohibited.
In case of the specific transport conditions (particularly: low temperature transport), it is necessary to negotiate the way of transport and product packaging with the product manufacturer in order to ensure safe transport.

2.2 Unpacking and first use

Caution!

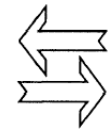
If the product is installed by an service of FAMED ŻYWIEC Sp. z o.o., the user is released from the obligation to perform the activities described in this item.

The bed is shipped by the producer in an assembled form in a wooden, open-work chest. The bed should be unpacked indoors in order to be protected from damages.
To prepare the bed for operation after its transport or delivery one should:

- read the Operating Manual carefully,
- remove the package,
- remove the materials protecting the bed during its transportation,

Caution!

Package may be marked with following signs:



- multiuse package

- package for recycling

low-density polyethylene packaging

LDPE

Proceeding with the package waste should comply with the law requirements from the area of environment protection obligatory in place of introducing the product in package.
Package waste is recyclable and should be properly segregated and deliver according to local law requirements to the disposal point of waste separately collected.
Returnable packaging should be returned to the producer of the medical product.

- take out equipment,
- remove wheels blocking elements,
- release the wheels central lock,
- with help of another person carefully take the bed from the palette and stop it,

Caution!

When moving the bed, do not hold the plastic casings of the basis and couch's frame as that may result in their damage.

- check whether the equipment provided fits the documentation enclosed,
- fix the accessories according to the indications stated In item *4 Optional elements*,
- place the product in its destination which meets the requirements described in this manual (*item 1.2 General requirements*),
- If the place where the bed has been installed is equipped with potential equalization installation you should connect the bed with it by means of potential equalization wire connected to potential equalization socket in the bed connecting panel,

Caution!

All electric devices connected directly with the patient should be connected with potential equalization installation.
In case of potential equalization installation lack in the bed installation place these devices should be connected by means of potential equalization wire with potential equalization socket in the bed connecting panel.

- connect the battery cable to the socket with the appropriate marking (if the bed remains unplugged for a longer period of time , disconnect the battery from the control box)

plug the socket of the remote control cable into driver plug with the appropriate designation (if the bed for a long period is not plugged into the mains, please disconnect the remote control from the controller),
- connect the bed to mains with the same parameters as stated on the nameplate,

- on the basis of information given in item *3 Operation* check whether the table works as described in item *5 Criteria on whose basis it is assessed whether product operation is correct or not.*
During executing all checking functions described in this point, all bed's mechanisms should work silently and smoothly, without stopping, creaking, etc. Bed mechanisms and electric servo-motors produce noise which does not exceed 65dB(A) at the distance of 1 m from the bed.

Caution!

If the parameters obtained are different than those in the description herein, the bed does not work properly, one may not use the product. The producer, provider (dealer) should be informed immediately. Use of improperly functioning product may cause damages which will encumber the user and for which the producer shall not be responsible.

3 Servicing and functioning

CAUTION!

During normal use, the bed must be connected to the mains.

The low level of battery charging of the bed is signaled by signal sound.

3.1 Electronic control panel

3.1.1 Central control panel for beds in version I

The central control panel is on the footboard.
The central control panel controls the following bed features:
– Bed pallet height
– Backrest tilt adjustment
– Thigh segment tilt adjustment
– Backrest and thigh segment adjustment (autocontour function)
– Longitudinal bed tilt (Trendelenburg and reverse Trendelenburg)
– Cardio chair position
– Examination position
– Fowler
– Trendelenburg
– Zero position
The central control panel can also lock out specific or all control functions of the bed.

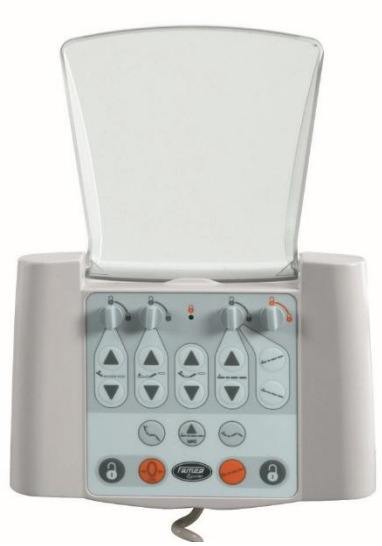


Fig. 3.1a

3.1.2 Central control panel for beds in version II

The central control panel is located on the foot end of the bed.
The central control panel enables to control the following functions of the bed:
- backrest segment inclination angle adjustment(1),
- thigh segment inclination angle adjustment (2),
- adjustment of the inclination angle of both segments-autocontour function (3),
- change of bed height (4),
-longitudinal tilting (Trendelenburg, anty-Trendelenburg) (5),
- Trendelenburg's rescue position (6),
- examination position (7),
- Zero Gravity position (8),
Three steps of the patient's early mobilization

1) backrest movement to 30°, bed pallet on the maximum height – VAP (9),
2) cardiac chair position (10), backrest and thigh rest movement,

3) get out of the bed position (11) – backrest is raised, bed pallet on the maximum height, tilted in the leg side

- Fowler's position (12),
- Vascular position (13),

- functions locking (14) - to lock the function, press the padlock and then the button of the function which you want to block. Orange Led diode indicates that function has been disabled.
- one-button lock of all functions, except emergency (15), its activation is indicated by a lit diode.

From the patient's level, functions from the internal controls in the side rails (Fig. 3.1 g and h) and functions on the remote control are available to control the bed.

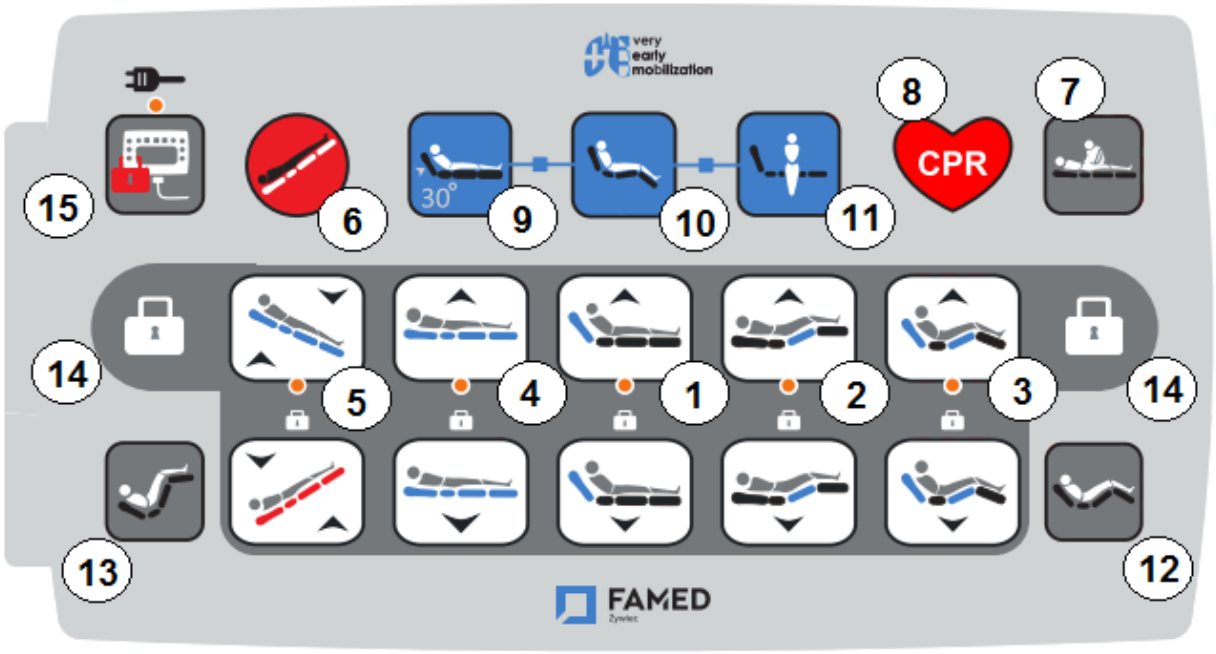


Fig. 3.1b

CAUTION!

While cleaning and disinfecting the bed, exercise extreme caution. In case of flooding, dry the central panel keyboard as soon as possible and wipe its edges dry with a cloth.

If the patient is not attended by the medical personnel, lock the bed functions whose activation may pose a threat to the patient safety.

Avoid quick changes when switching function keys.

The change of the longitudinal tilt of the pallet is made by pressing the arrow button at the function described by the icon next to it, on any control element The actuator moves only when the button is pressed, and when the button is released it stops. After reaching the extreme longitudinal tilt position, the mattress stops automatically.

CAUTION!

Changing the angular position of the pallet may only be performed by medical personnel. The Trendelenburg position marked by the red icon on the control panel is the rescue position.

Be especially careful when performing the anti-Trendelenburg tilt. When thebedding shelf is pulled out, the shelf may be collide with the floor or the operator's leg is crushed between the floor and the shelf. Such a situation does not constitute grounds for a complaint about the product.

When tilting the anti-Trendelenburg with the side rails lowered, be especially careful as the operator's leg may be crushed between the railing and the floor.


The mattress height can be changed by pressing the arrow buttons next to the icon next to it, on any control element. The movement of the actuator is carried out only when arrow button is pressed, after its release, the movement stops. After reaching the minimum or maximum height, the mattress stops automatically.

CAUTION!

If patient is on the bed without any medical personnel supervision the bed should be in lowest position to prevent fall risk
When the couch height is changed it can appear the difference between speeds of servo motors movement. It has caused carrying out of slightly couch longitudinal movement during up or down movement. The difference of servo motors height may rise to some centimeters and it has not influence for the patient's safety and comfort. The self- activating couch leveling is carrying out automatically in minimal and maximal height, in every other position the level the couch is possible by means of longitudinal movement function .
This situation does not make up the underlie to product complaint.


The Trendelenburg rescue tilt is performer by pressing the button marked with the icon next to it, on the central control panel. The movement of the actuator is carried out only when the button is pressed, when it is released, the movement stops, while making this movement, the segments lie level. After reaching the extreme longitudinal tilt position , the mattress stops automatically.

CAUTION!

Changing the angular position of the pallet may only be performed by medical personnel. The Trendelenburg position described by the red icon on the control panel is the rescue position.


Changing the angular position of the backrest segment is done by pressing the arrow button at the function described by the icon next to it, on any control element.
The actuator's movement is performed only when the button is pressed, and when the button is released, the movement stops. After reaching the end position, the segment stops automatically.

CAUTION!

Be careful when activating this function. Moving elements of the backrest segment (actuated by an actuator) may cause fingers or hands to be pinched. You must not rest your hands on the bed elements located near the moving elements of the structure.

If the patient's condition may lead to patient entrapment, the lying segments should be leveled over time while the patient is left unattended , exept when the patient's condition does not permit this.


The angular position of the thigh segment is changed by pressing the arrow button nect to the function described by the icon next to it, on any control element. The actuator's movement is performed only when the button is pressed, and when the button is released, the movement stops. After reaching the end position, the segment stops automatically.

CAUTION!

Be careful when activating this function. Moving parts of the thigh section (actuated by an actuator) can pinch fingers or hands. You must not rest your hands on the bed elements located near the moving elements of the structure.

If the patient's condition may lead to entrapment of the patient, the lying segments should remain level while the patient is not medically supervised, exept when the patient's condition does not permit this.

Do not sit sideways on an uneven thigh segment.

The autocontour function consist in simultaneously changing the angular position of the backrest segment and the thigh segment. The autocontour .function is performed by pressing the arrow button nest to the function described by the icon next to it, on any control element.
The actuator's movement is performed only when the button is pressed, and when the button is released, the movement stops. The segments stop automatically when they are in their extreme position.

CAUTION!

Be careful when activating this function. Moving parts of the thigh section of backrest (actuated by actuators) can pinch fingers or hands. You must not rest your hands on the bed elements located near the moving elements of the structure.

If the patient's condition may lead to patient entrapment, the lying segments should be leveled over time while the patient is left unattended , except when the patient's condition does not permit this.

The chair position of the bed – lying tilted towards the patient's legs, the backrest and thigh segments raised. The chair position of the bed is obtained by pressing the arrow button ate the function described by the icon next to it, on any control elements.

The actuators move only when the button is pressed, and when the button is released, the movement stops. After obtaining the chair position, the lying position stops automatically.

The position of the "cardiological chair" is set with a single button on the control panel, there is no need to set individual parameters yourself. The parameters that make up the cardiac chair positions are:

- Back segment elevation 70 ° ± 3 °
- seat angle fixed part 0 °
- angle of elevation of the femoral segment 40 ° ± 3 °
- angle of the lower leg segment 25 ° ± 3 °

The above parameters are measured in relation of the bed frame, while in this position, the bed layer tilts towards the patient's legs (anti-Trendelenburg) by an angle of 18°±3°.

This function should be performed under the supervision of medical personnel.

Be careful when implementing this function. Sliding parts of the bed can pinch fingers or hands. Do not rest your hands near moving parts

CAUTION!

When performing the armchair position in the lowest position of the bed, with the side rails lowered, be especially careful as the operator's leg may be crushed between the rail and the floor.

Be especially careful when performing the armchair position in the lowest position of the bed. When the bedding shelf is pulled out, the shelf may collide with the floor or the operator's leg is crushed between the shelf and the floor. Such a situation does not constitute grounds for a complaint about the product.

0" position - the pallet is leveled at the minimum height, the segments lie horizontally.

The "0" position of the bed is reached by pressing the button, with the icon shown opposite, on the central control panel.
Th actuators move only when the button is pressed, and when the button is released, the movement stops. After reaching the „0" position, the bed stops automatically.

CAUTION!

The „0" position is a rescue position.

The „0" position should be performer by the medical personnel.

Be careful when implementing this function. Sliding parts of the bed can pinch fingers or hands. Do not rest your hands near moving parts.

When changing the height of the trolley to the minimum height, with the side rails lowered, the operator's leg may be crushed between the side rail and the floor.

 Medical examination position – the bed is leveled at the maximum height, the segments are lying horizontally

The position for testing is obtained by pressing the icon button shown opposite on the central control panel.

The actuators move only when the button is pressed, and when the button is released, the movement stops. After obtaining the position for examination, the lair stops automatically.

CAUTION!

This function should be performed under the supervision of medical personnel.

Be careful when implementing this function. Sliding parts of the bed can pinch fingers and hands. Do not rest your hands near moving parts.

 Fowler position –the bed is leveled at the minimal height ,backrest and thigh segments raised.

The position of the Fowler is obtained by pressing the button, with the icon shown opposite, on the central control panel.

The actuators move only when the button is pressed, and when the button is released, the movement stops. After reaching Fowler's position, the lair stops automatically.

CAUTION!

This function should be performed under the supervision of medical personnel.

Be careful when implementing this function. Sliding parts of the bed can pinch fingers or hands. Do not rest your hands near moving parts

When changing the height of the trolley to the minimum height, with the side rails lowered, the operator's leg may be crushed between the side rail and the floor.

 Vascular position - lying in a position inclined towards the patient's head, segments of the backrest, thigh and shank (manually adjusted at an angle) raised.

The vascular position is obtained by pressing the button, with the icon shown on the picture, on the central control panel.

The actuators move only when the button is pressed, and when the button is released, the movement stops. After reaching the vascular position, the bed pallet segments stops automatically.

CAUTION!

This function should be performed under the supervision of medical personnel.

Be careful when implementing this function. Sliding parts of the bed can pinch fingers or hands. Do not rest your hands near moving parts

When changing the angle of the pallet with the side rails lowered, the operator's leg may be crushed between the side rail and the floor.

 Getting out of bed position – the lying level, set at the maximum height.

The descent position is obtained by pressing the button, with the icon shown here, on the central control panel (see section 3.1 Electronic control system).

The actuators move only when the button is pressed, and when the button is released, the movement stops. After reaching the descent position, the mattress stops automatically.

CAUTION!

This function should be performed under the supervision of medical personnel.

Be careful when implementing this function. Sliding parts of the bed can pinch fingers or hands. Do not rest your hands near moving parts.

3.1.3 Wire controller for versions I

Wire controller is connected to the socket of controlling box.
Bed is equipped with central control panel or blocking panel with wire controller without blocking function. (fig. 3.1c).
Bed that does not have central control panel or blocking panel is equipped with wire controller with key that enable blocking of functions (fig. 3.1d).

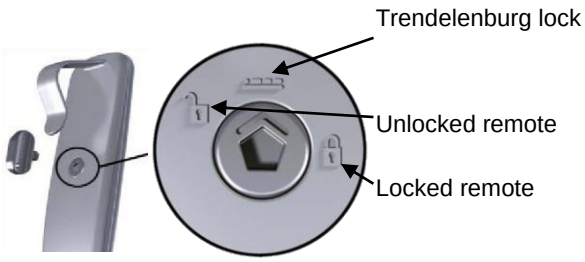
Fig. 3.1c
Wire controller without blocking functions

Fig. 3.1d
Wire controller with key for blocking all functions

Wire controller that enables controlling of bed's functions listed below:
- pallet height adjustment,
- change of back rest segment inclination angle,
- change of thigh rest segment inclination angle ,
- autocontour function (change of back rest and thigh rest segments' inclination angle),
- longitudinal tilt (Trendelenburg and reverse Trendelenburg positions)(applies to wire controller with blocking function).

The controller may feature a control lock with a magnetic key or a mechanical key switch. Lock / unlock the controller by swiping the magnetic key over the padlock symbol in the bottom part of the controller so that the controller lock LED is on / off, or operate the lock on the back of the controller with the mechanical key.

Magnetic key



Mechanical key

The remote control is also available with LED informing about it is plugged into a power source (item 1 fig. 3.1e). During the transport, in order to avoid discharging of the battery, remote control with LED is disconnected from the control box. Proper operation of the remote control is possible after plugging it into the appropriate socket in the control box (the number on the cable should coincide with the slot number of the controller

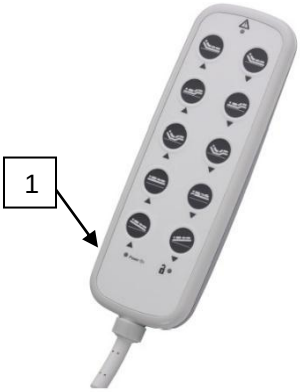


Fig. 3.1e

Caution!

Controlling is realized by means of keys that require constant activation

Cleaning and disinfecting processes should be performed carefully. In case of flooding dry keyboard of central panel and edges of the panel with dry cloth.

Functions of the bed, activation of which can cause safety hazards for the patient should be blocked if the patent is left unattended.

3.1.4 Wire controller for version II

The bed is always equipped with a wired remote control. The following functions are available on the remote control: backrest movement, thigh movement, simultaneous movement of the backrest and thigh segment, bed height adjustment, anti-Trendelenburg, and Trendelenburg. To lock a specific function, press the Trendelenburg button (gray), and then, while holding it down, press the desired function.

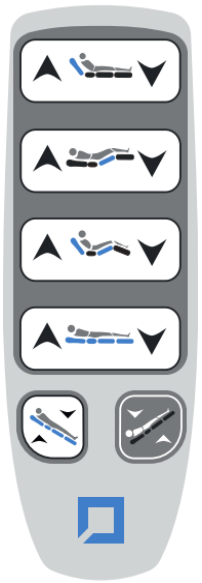


Fig. 3.1f

The remote control has programmable locks: in the last row of the remote, the Trendelenburg button has a dual function, i.e., in combination with another button, it activates programmable locks. To lock a desired function with programmable locks, press the Trendelenburg button, and then, while holding it down, press the desired function. The locking of the function will be confirmed by a short sound signal. Unlocking functions works the same way: press the Trendelenburg button and the specific function you want to unlock. To avoid changes in the bed settings, the combination of the Trendelenburg button and the desired function should be executed as quickly as possible.

Caution!

Controlling is realized by means of keys that require constant activation

Cleaning and disinfecting processes should be performed carefully. In case of flooding dry keyboard of central panel and edges of the panel with dry cloth.

Functions of the bed, activation of which can cause safety hazards for the patient

should be blocked if the patent is left unattended.

3.1.5 Side control panels

In the side rails of the bed, on the outside there are control panels (look pic. 3.1g), and the inside control panels (look pic. 3.1h) which enable the patient and medical Staff to perform the following functions of the bed:

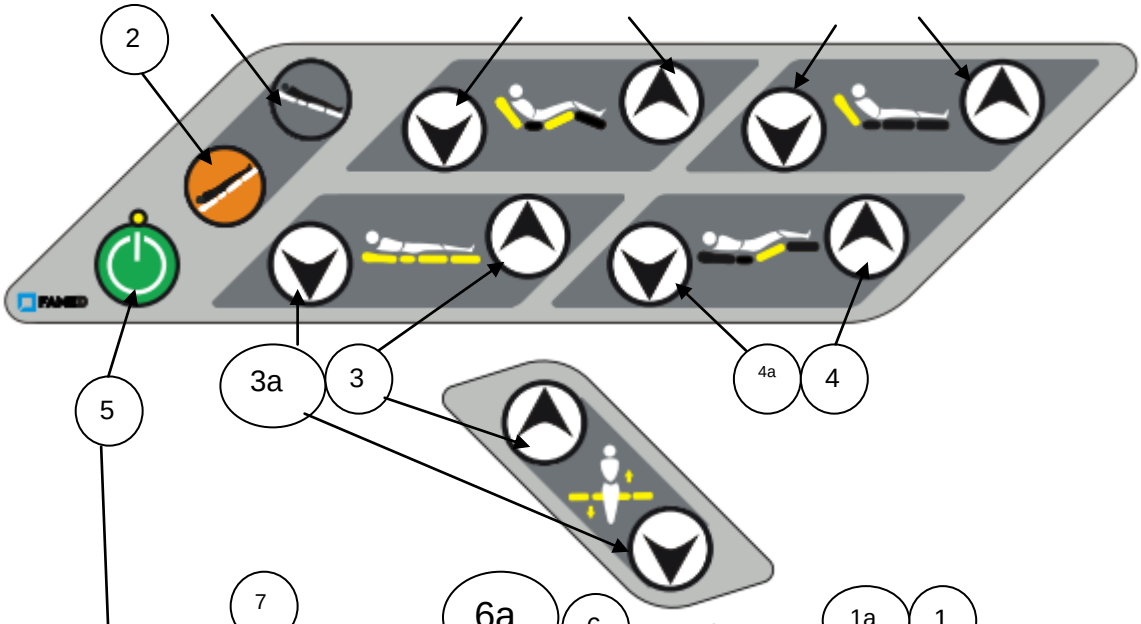


Fig. 3.1g

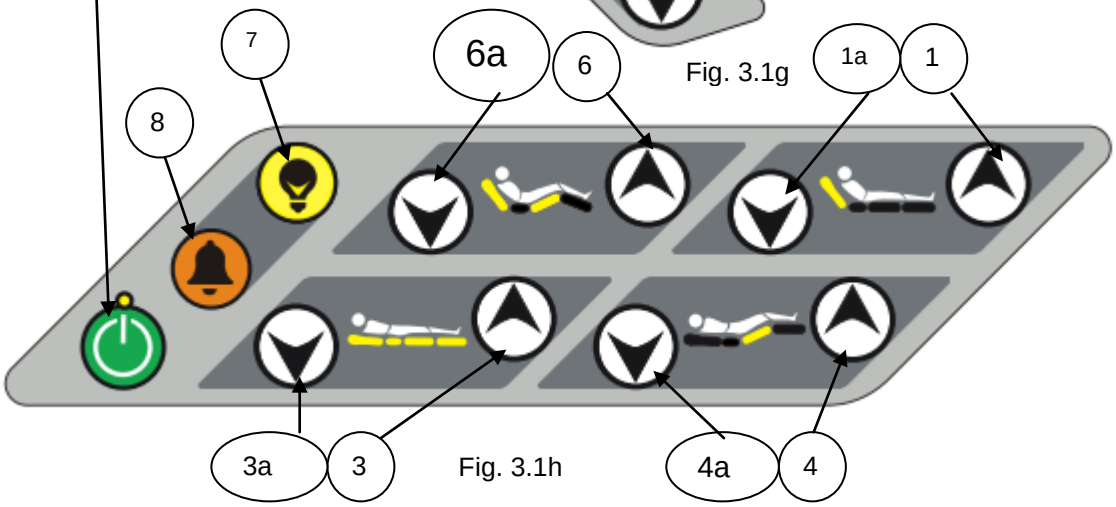


Fig. 3.1h

1 – „backrest up”
1a – „backrest down”
2 – „Trendelenburg position”
2a – „anti-Trendelenburg position”
3 – „bed pallet up”
3a – „bed pallet down”
4 – „thigh segment up”
4a – „thigh segment down”
5 – „ switch on of the control panel”
6 – „auto-contour up”
6a – „auto-contour down”
7 - “Backlight lamp activation switch”
8 - “Bed alarm activation switch”

Caution!

Full functionality of the controls in the side rails is available only when bed is pluged in to the mains!

3.2 Change of the couch height in I version of the bed

Height adjustment is activated via key (shown in the box, on the left) on any controlling

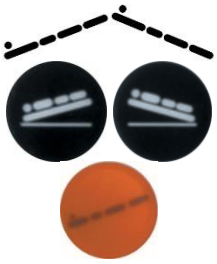
(chapter *3.1 electronic control system*).
Actuator's movement is performed as soon as the user press the key, movement stops after releasing of the key. When the pallet reaches minimal or maximal height actuator movement stops automatically.

Caution!

If patient is on the bed without any medical personnel supervision the bed should be in lowest position to prevent fall risk

When the couch height is changed it can appear the difference between speeds of servo motors movement. It has caused carrying out of slightly couch longitudinal movement during up or down movement. The difference of servo motors height may rise to some centimeters and it has not influence for the patient's safety and comfort. The self- activating couch leveling is carrying out automatically in minimal and maximal height, in every other position the level the couch is possible by means of longitudinal movement function (see point 3.3). This situation does not make up the underlie to product complaint.

3.3 Changing the couch's angle inclination (Trendelenburg and Reverse-Trendelenburg) in I version of the bed



Function of longitudinal tilt is activated via key (shown in the box, on the left) on any controlling (chapter *3.1 electronic control system)*

Actuator's movement is performed as soon as the user press the key, movement stops after releasing of the key. When the pallet reaches minimal or maximal tilt actuator movement stops automatically.

Caution!

Angular couch position can be changed only by medical personnel. The Trendelenburg position is a rescue position.
Perform reverse Trendelenburg tilt carefully. When the shelf for linen is slid out, collision of the pallet with the floor, or crushing of user's leg between pallet and the floor can occur

3.4 Backrest segment angular position change in version I of the bed

Change of back Rest segment inclination angle is activated via key (shown in the box, on the left) on any controlling (chapter *3.1 electronic control system*)
Actuator's movement is performed as soon as the user press the key, movement stops after releasing of the key. When the pallet reaches minimal or maximal inclination angle actuator movement stops automatically.

Caution!

You should be careful while performing this function. The backrest segment moving arm ear (driven by actuator) may cause fingers or palm harm. You must not rest your palm on the arm near the hinge.
If a patient state may lead that he gets stuck, the backrest segments should remain leveled if a patients remains without the medical staff attendance with exception the patient state does not allow for it.

Do not sit on the backrest!

3.5 Thigh segment angular position change in I version of the bed

Change of thigh Rest segment inclination angle is activated via key (shown in the box, on the left) on any controlling (chapter *3.1 electronic control system).*
Actuator's movement is performed as soon as the user press the key, movement stops after releasing of the key. When the pallet reaches minimal or maximal inclination angle actuator movement stops automatically.

Caution!

You should be careful while performing this function. The thigh segment moving arm ear (driven by actuator) may cause fingers or palm harm. You must not rest your palm on the arm near the hinge.

If a patient state may lead that he gets stuck, the thigh segments should remain leveled if a patients remains without the medical staff attendance with exception the patient state does not allow for it.

Do not sit sideways on an uneven thigh segment.

3.6 The autocontour function in I version of the bed

Autocontour function (change of back Rest and high Rest segments' inclination angle At the same time) is activated via key (shown in the box, on the left) on any controlling (chapter *3.1 electronic control system).*

Actuator's movement is performed as soon as the user press the key, movement stops after releasing of the key. When the pallet reaches minimal or maximal inclination angle actuator movement stops automatically..

Caution!

You should be careful while performing this function. Shifting elements of thigh rest segment or back rest segment driven by actuators, can cause cuuting off the fingers or the hand. Do not rest your hands on elements of the bed that are placed close to shifting elements of the structure.
If a patient conditions may lead to situation where he gets stuck, the pallet segments should remain levelled if a patients remains without the medical staff attendance with exception when the patient condition does not allow for it.

3.7 Chair position of the bed (cardiological chair) in I version of the bed

Chair position of the bed- pallet tilted In direction of patient's legs ,segments of back rest and thigh rest lifted.
Chair position can be reached by means of key (shown in the box, on the left) placed on central controlling panel (chapter 3.1 Electronic controlling system).
Actuators' movements are performed only if key is being pressed, after its release movement stops. When pallet reaches chair position movement stops automatically.
Position of Craniological chair is fixed by one button on the control panel. There is no need to arrange each parameters. Parameters that create cardiological chair position:

- Back rest segment inclination 70°± 3°
- Seat section inclination angle 0°
- Thigh rest segment inclination 40°± 3°
- Shank rest segment inclination 25°± 3°

Above parameters are measured) in relation to bed pallet but in this position bed pallet implement extra tilt in leg direction (Reverse– Trendelenburg) inclination 17°±3°.

Caution!

Function should be performed by medical staff.
Shifting elements of the pallet can cause cutting off the fingers or the hand. Do not rest your hands on elements of the bed that are placed close to shifting elements of the structure. Perform this function carefully.

3.8 Position „0" in I version of the bed

Position „0" – pallet leveled (minimal height), segments of the pallet set horizontally.

Position „0" of the bed can be reached by pressing the button (shown in the box on the left) on central controlling panel. (chapter 3.1 Electronic controlling system).

Actuators' movements are performed only if key is being pressed, after its release movement stops. When pallet reaches '0' position movement stops automatically.

Caution!

‘0’ position is emergency rescue position.
‘0’ position should be performed by medical staff.
Perform this function carefully. Shifting elements of the pallet can cause cutting off the fingers or the hand. Do not rest your hands on elements of the bed that are placed close to shifting elements of the structure.

3.9 Examination position in I version of the bed

Examination position – palet leveled on maximal height, segments set horizontally.
Examination position can be reached by pressing the key (shown in the box on the left) on cenral controlling panel (chapter 3.1 electronic control system).

Actuators’ movements are performed only if key is being pressed, after its release movement stops. When pallet reaches examination position movement stops automatically.

Caution!

Function should be performed by medical staff.
Perform this function carefully. Shifting elements of the pallet can cause cutting off the fingers or the hand. Do not rest your hands on elements of the bed that are placed close to shifting elements of the structure.

3.10 Fowler position in I version of the bed

Fowler’s position – pallet leveled (minimal height) back rest and thigh rest segments lifted.
Fowler’s position can be reached by pressing the key(shown in the box on the left) on central control panel (chapter*3.1 electronic control system*).

Actuators’ movements are performed only if key is being pressed, after its release movement stops. When pallet reaches Fowler’s position movement stops automatically

Caution!

This function should be performed by medical staff.

Perform this function carefully. Shifting elements of the pallet can cause cutting off the fingers or the hand. Do not rest your hands on elements of the bed that are placed close to shifting elements of the structure.

3.11 Blocking of the bed functions

Caution!

If the patent is left without supervision from medical staff lock the bed functions which, when activated, can create danger to the patient.

3.11.1 Central controlling panel in I version of the bed

To block Chosen function twist the knob place next to controlling key of particular function to the right (to symbol). Unblocking is performed by twisting the knob to the left (to the symbol).

To block all functions twist the knob on the right (with orange symbols) to the right (to the symbol). Unblocking is performed by twisting the knob to the left (to symbol).
Blocking of all functions is indicated by lighting up the diode marked with symbol .

Panel enables performing of blocked function (blockade of chosen /all functions) it requires pressing of activating key and key of chosen function.

3.11.2 Central controlling panel in I version of the bed

To block/unblock chosen function press key (shown in the box, on the left) and one of keys of chosen function.

Blocking of the function signalize lighting up of the diode placed between keys of particular function.

To block all functions press button of blocking of all functions (shown in the box on the left). Unblocking occurs after pressing the key once again.

Blocking of all function is signalized by lighting up of diode above the key of blocking of all functions and diodes indicating blocking of particular functions.

Keys: „0" position and Trendelenburg position are active even though all functions are blocked.

3.11.3 Central control panel in II version of the bed

To lock the selected function, activate the control panel, then press the padlock button and, holding down, press the icon of the function you want to lock. Unlocking is done by pressing the padlock button again and the function you want to unlock simultaneously. To lock all functions, press 2 padlocks simultaneously on the panel. If the red LED above the function button lights up, it means that it is blocked.

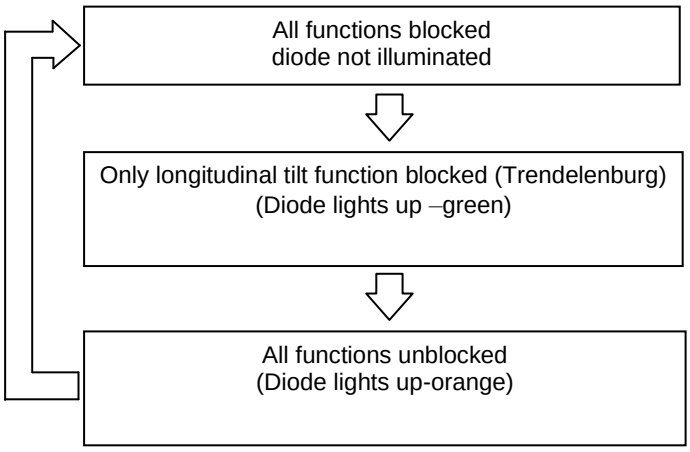
The position "0" and Emergency Trendelenburg buttons are active despite all functions locked.

3.11.4 Blocking panel

To block Chosen function twist the knob placed next to symbol of particular function to the left (in direction of the symbol). Unblocking is performed by twisting the knob to the right (in direction of the symbol).

3.11.5 Wire controller with the key for functions' blocking.

Blocking and unblocking of the function is performed by shifting magnetic key supplied with the controller, on the surface of the controller close to padlock symbol. Next shifts cause change of blocking option. Cycle of options is described by the digraph below:



Particular blocking options are signalized by means of diode placed on wire controller on the right from the padlock symbol.

3.11.6 USB Socket

On special request, the bed can be equipped with USB socket . USB socket is located on the bed frame on the patient's right side. USB socket allows for charging the batteries of the patient's mobile devices and power other devices equipped with a USB connector (the manufacturer is not a cable supplier).

3.11.6.1 In version I of the bed

Fig. 3.11a Control panel of USB socket

USB socket is activated by touching the graphics pos. 2. The blue LED under the cover of the USB socket will indicate that the module is activated pos. 1. For charging the device with the USB socket, plug the device cable into the USB socket pos. 1 and then touch the graphic pos. 2. The device should display an icon indicating that it is charging. To finish loading or deactivate the USB socket, touch the graphic pos. 2.

Caution!

The USB socket works only for mains power

During desinfection the cover of the USB socket should be closed.
The output voltage of the connector is 5 V.

3.11.6.2 In version II of the bed

The system is activated all the time (when connected to mains power) and doesn't need additional activation. USB charger has efficiency 800mA 5V. In case of the USB charger overload the system will be secured. In that case it is required to unplug device being charged and unplug the bed from the mains power for 10 second. After this time the system will come back to appropriate action. Information about the overload - will be lack of device charging.

Caution!

The USB socket works only for mains power

During desinfection the cover of the USB socket should be closed.

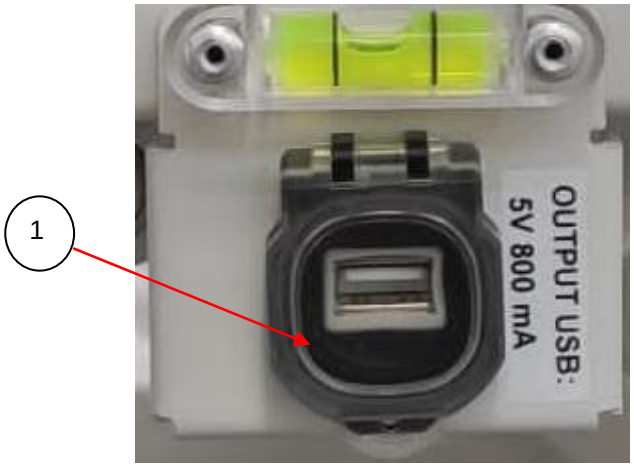


Fig. 3.11b USB charger panel USB

To charge the device by USB module it is required to plug in the cable of the device to USB socket point 1. To stop charging the device by USB module it is required to unplug the cable from USB socket point 1.

3.11.7 Nurse call module (option)

The bed can be equipped with a nurse call module, which is mounted on customer's special request.

To make the module fully functional:

1. Connect the cable to the 37-pin connector of the E-051 module. The module is located under the patient's head section. Connect the other end of the cable to the patient's bedside functional panel.

2. Check each function on the side rail keyboards and verify that they are working properly. After pressing the "bell" button on the handrail keypad, the signal from the nurse call module should immediately go to the nurse's station.

3.11.8 Unlocked wheels alarm

Unlocked wheels sound alarm activates when the bed has unlocked wheels and it is plug in to the mains power. Alarm is active till the wheels will be locked or till the bed will be unpluged from the mains power (moving the bed). After transportation the wheels need to be locked. Leaving the bed with unlocked wheels on battery charge for 30 minutes will activate additional alarm – the battery secure alarm. After the wheels will be locked the alarm turns off.

CAUTION!

After transportation the wheels need to be locked.
Not locking the wheels after disconnection the bed from the mains power may cause quick battery discharge. After disconnection the bed from the mains power only locking the wheels will cause the control system deactivation. When the wheels are locked the keypads are deactivated after 20 seconds (if they were active).

3.12 Fast backrest segment levelling (CPR function).

The bed is provided with a mechanism of quick levelling of the backrest.

In order to level the backrest section one should lift the lever which is situated below the frame of the couch under shank segment and press down the backrest section (version I).

In order to level the backrest section one should lift the lever which is situated below the frame of the couch under seat segment and press down the backrest section (version II, III and IV).

Caution!

When pulling the lever, be careful not to get your fingers caught between the lever and the bed structure and between the pallet segments and the bed frame.

3.13 Shank segment angular position change

With the raised upper leg section, the shank section can be raised to the desired height by locking the position by means of a ratchet gear.

Caution!

Make sure that shank rest segment was locked properly!
Raising shank rest section by hand without lifting the thigh rest section first is forbidden!

3.14 Central wheel lock

The bed movement is possible in every direction. The bed is equipped with a central castors brake.

*The **castors brake lever*** has three positions:

- upper - direction blockade
- middle (horizontal) - blockade released
- lower - all castors blocked

The driving system can be optionally provided with a central lock and fith wheel which facilitate manoeuvre with bed a sharp bend.

Caution!

Before one begins to move the bed, one shall disconnect it from mains and disconnect the potential equalizing cable.

Before the bed is moved, it should be lowered to its minimal height.

The floor under the bed must be free of obstacles!

Before the moving of bed has been started one should switch off the wire net and wire equalizing potentials

The bed should be moved at least 2 by people.

Moving the bed with workload (patient) on ramps and in outsider is prohibited

Do not move the bed through electric wires.

The direction blockade is used during the bed movement on long, straight sections.

All castors brake causes a total bed immobilization.

3.15 Inserting and removing the head and foot boards

The head and footboards (pos.8, Fig.1.5a) are mounted on the bed through inserting the pivots projecting from the boards into the holes in the pallet.

Caution!

Attention must be paid to whether tops are well pressed down to the bed shakedown, because otherwise an incorrect potential compensation may occur between the top and the shakedown.

In bed, removing the headboard requires releasing the lock. The procedure should be carried out as follows:
Locks are located on the underside of the bed Frome. To remove the head board, turn the wing knobs marked with arrows in fig. 3.15a, and then slide the head board out of the sockets. To remount the headboard from the bed, insert it into the sockets in the bed frame, and then turn the knobs until they lock into place. The headboard is properly locked when its bottom surface rests on the bed frame, and locked wing knobs prevent it from sliding out of the sockets.

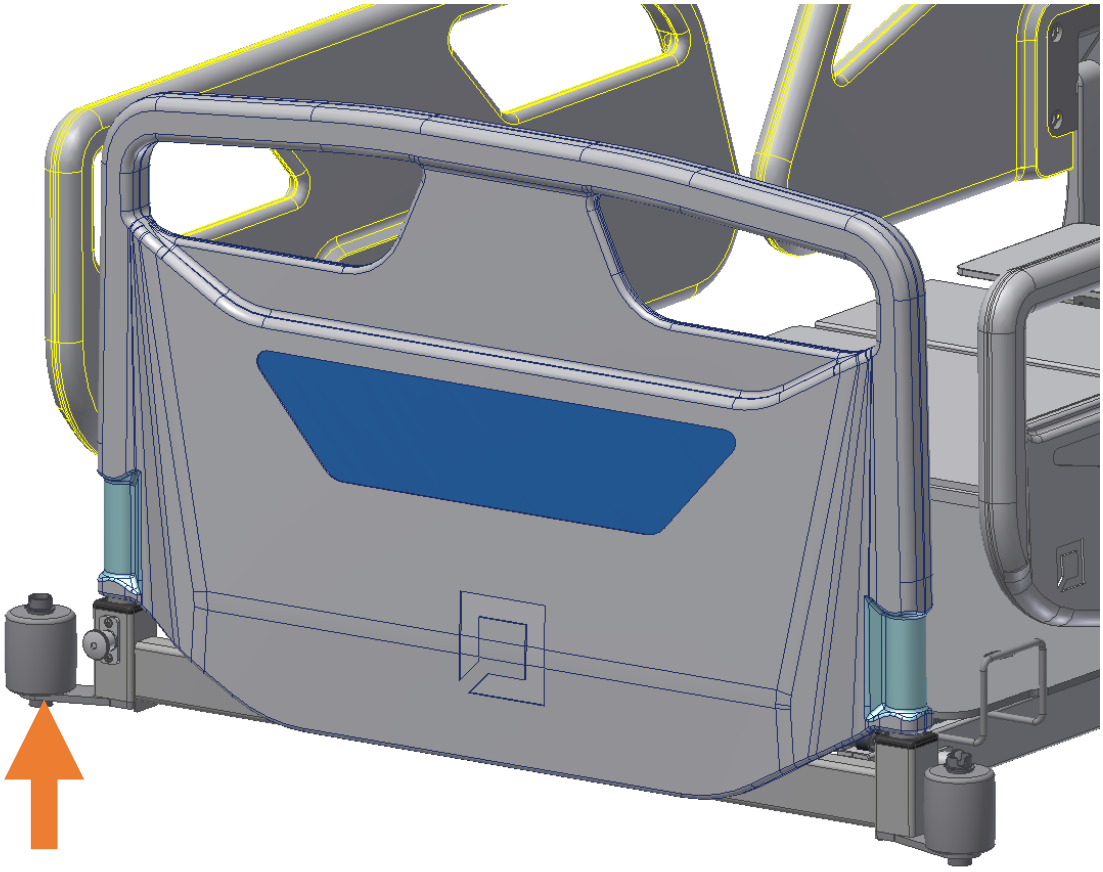


Fig. 3.15a Head/Foot board

3.16 Extend the pallet frame

In order to extend the mattress platform frame use the snaps on both sides of the mattress platform from the legs side (pos. 1, fig. 3.16a and pos. 1 and 2, fig. 3.16b).

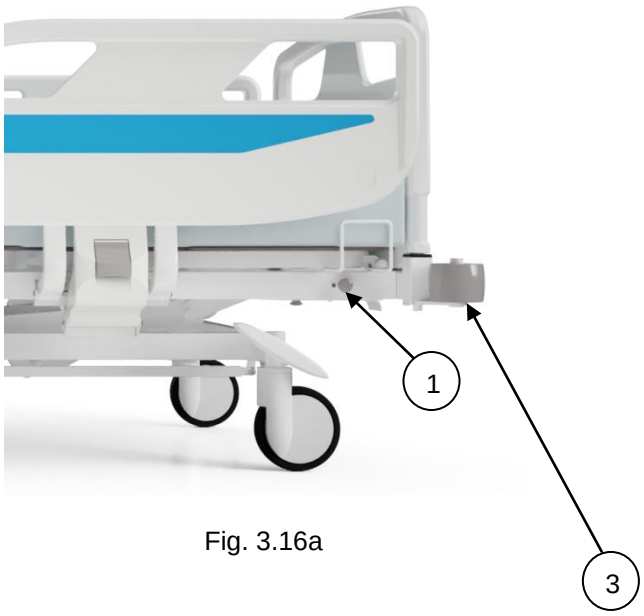


Fig. 3.16a

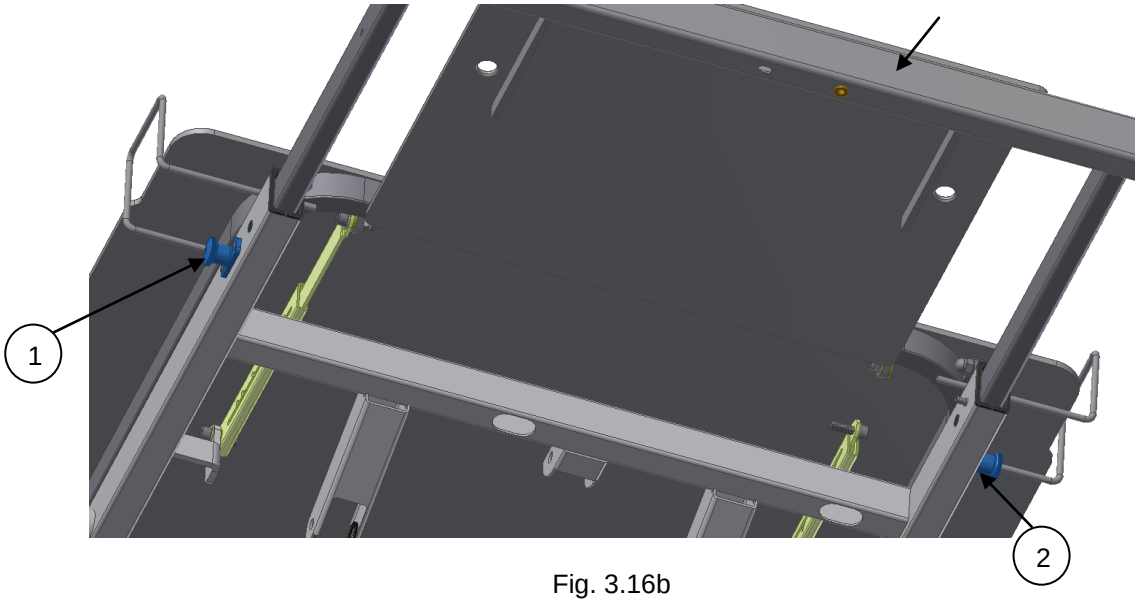


Fig. 3.16b

In order to change the length of the pallet (lengthening, shortening) it is necessary to:

- pull the latch [1] and turn the latch head by 90 °, which will lock the latch in the extended position,
- pull back the latch [2] and insert or pull out the sliding top [3] with your hand,
- after snapping the latch [2], turn the head of the latch [1] and slightly move of the pallet extension make the latch click into place,
- check the correctness of the locking of pallet extension by attempting to shift the footboar.

3.17 Attachment of the Backrest Board

The backrest board can be installed and removed without the use of tools. To remove the board, turn the rotary latch [1] to the left (one or two turns) so that its surface aligns with the cutout in the board, and then slide the board out from the upper hooks [2] in the direction of the top of the bed from the head side.

To install and lock the board, first slide it onto the upper hooks [2], then turn the rotary latch so that it aligns with the cutout in the board and place the board on the metal frame. Finally, rotate the rotary latch [1] to the right (one or two turns), so that the latch presses the board and immobilizes it.

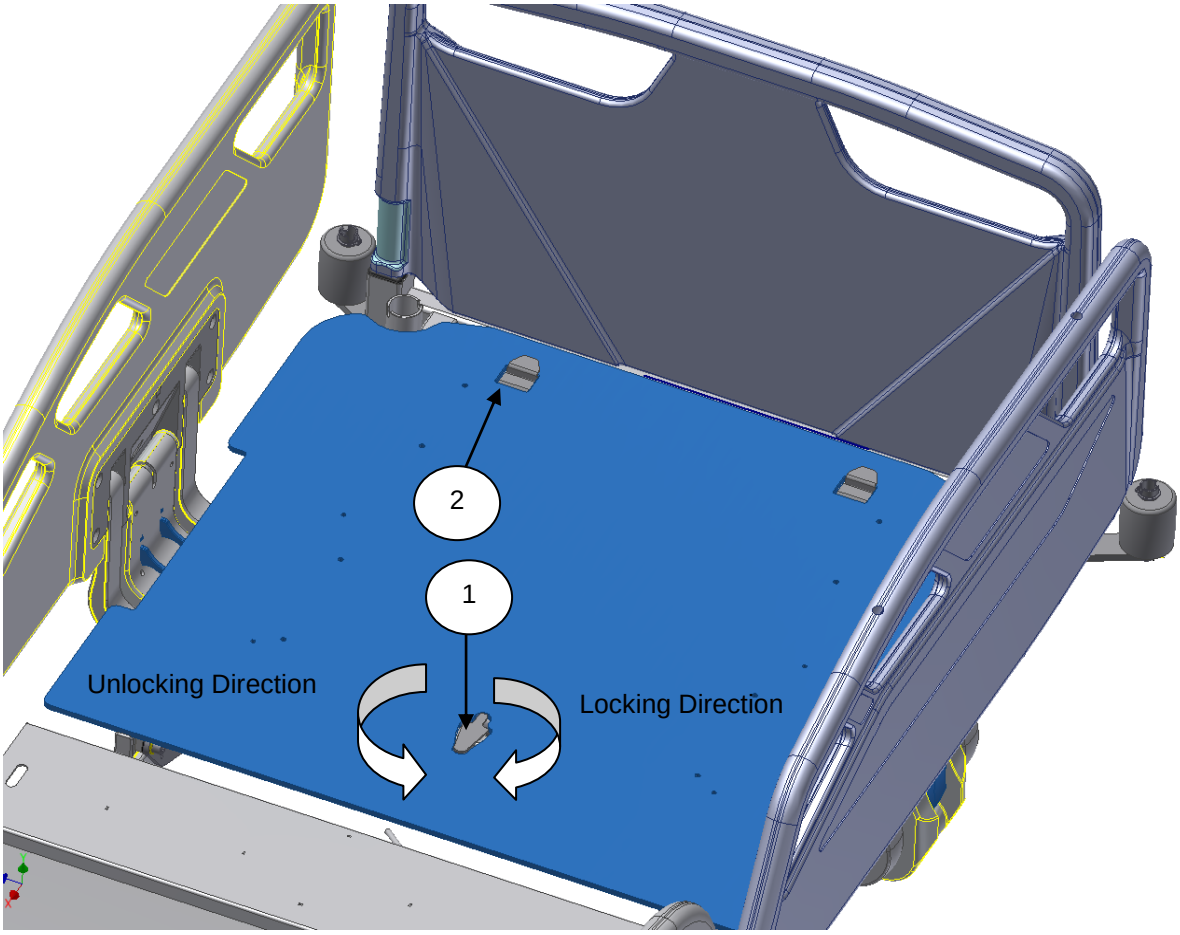


Fig. 3.17a

CAUTION!

Attaching and detaching the board should only be done in the manner described above. After attaching the board, make sure that the rotary latch is tightened in a way that immobilizes the board.

It is forbidden to place any elements or covers between the backrest board and the backrest frame. This can result in damage to the filling board of the segment and it is not a reason for making a complaint.

4 Optional elements

- Double pull-out frame
- Lifting pole
- Oxygen bottle holder
- IV pole holders
- Duckbill and basin holders
- Bed tilt indicator
- X-ray cassette tunnel in the backrest
- Monitor shelf
- Patient restraint handle and straps
- Patient immobilization straps
- USB module
- Linen shelves
- Patient stabilization mattress
- Foot controller
- Unlocked wheels alarm
- Fifth wheel
- Railing elevation adapter
- Nurse call module

4.1 Side rails

4.1.1 Side rails divided along the entire length of the bed

Fig. 4.1a Inflatable Side Rails

In order to lower the siderails, pull the lever (pos. 1), and then lower the siderail by pulling it down - the siderail automatically drops down.

In order to raise the siderail, one must lift the siderail - it locks automatically. The blockade fixing the raised siderails should ensure its secure and durable setting.

CAUTION!

When lowering the siderail, make sure that the patient and other people move away from the moving parts.

4.1.2 Metal foldable siderails

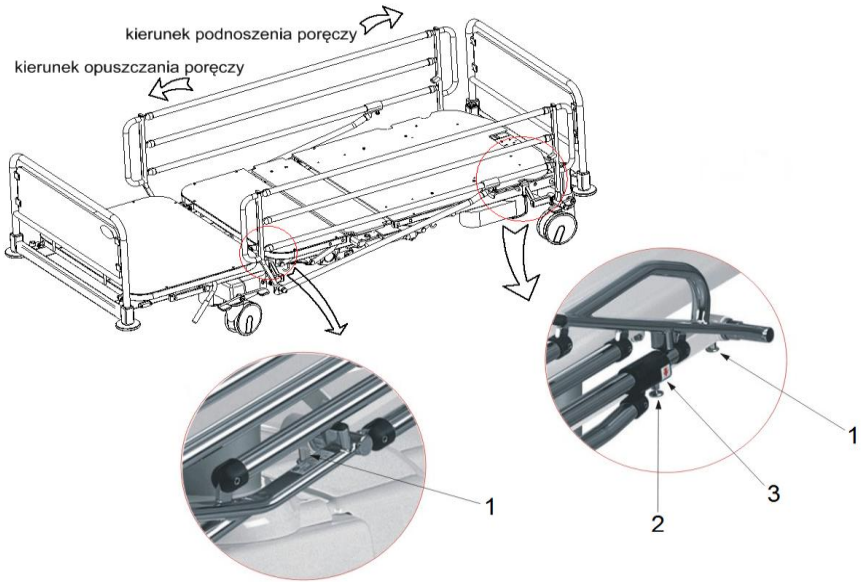


Fig 1. 4.1b Metal siderails

The side rails are attached to the sleeves in the railing adapter mounted to the mattress platform and locked with latches (pos. 1). The side rails should be fixed so that the locking mechanism (item 3) is on the patient head side. The maximum thickness of the mattress that can be used with theseside rails is 150mm.

CAUTION!

After attaching the siderails to the mattress platform frame, check if the side rails is properly locked. In order o do this, pull the siderails towards you. A properly locked side rails should not be able to be pulled out.

Patient immobilization straps can not be attached to the side rails.

To lower the siderails, pull the latch (pos. 2) on the siderails corpus body (pos. 3), which releases the lock and allows the siderails to be folded (towrds the patient's legs). To rise the siderails lift the siderails up (towards the patients head) - it is locked automatically. Retaining lock of unfolded siderails ensures its secure and permanent setting.

CAUTION!

When lowering the siderail, make sure that the patient and other people move away from the moving parts.

4.2 Drip hanger

The drip hanger of the bed can be mounted in the appropriate holes in the bed frame, located in all corners of the bed (marked with arrows in Fig. 4.2a). To mount the hand grip, use sleeves located on the inside of the bed , on the head side.

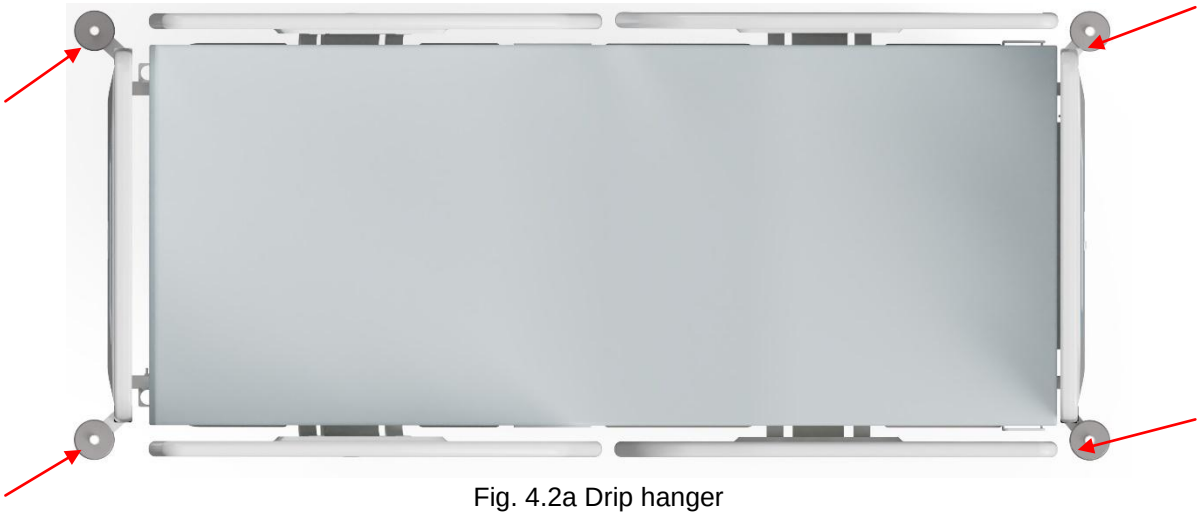


Fig. 4.2a Drip hanger

The height of the drip hanger can be adjusted. To do this, unscrew the knob on the hanger body, set the desired height and locked it again with the knob. The drip hanger is delivered upon the customer's request.

CAUTION!

The maximum load on the drip hanger hook (basket) should not exceed 2 kg.

4.3 Mattress

The cover of the mattress is made of a cotton or steam-permeable cloth. The mattress is made of polyurethane foam which can be removed from the cover after its unzipping.

As an effect of UV radiation (for example light radiation) insert of mattress could get colored. It is natural situation and it does not cause decreasing of mattress parameters and it can not be a subject of complaint

All information about composition of mattress, its cover and tips about how to clean and disinfect mattress are on the care label. Used there icons and list of recommended washing and disinfecting agents are in Appendix 2 and 4 of this user manual.
Upon the client request air mattress with control unit can be provided. To placed the mattress propely it should be put on the bed pallet and fixed by belts to back rest, seat and shank rest sections. Back rest and shank rest fixation belts should be band around the back rest and shank rest frames, about 15 cm space should be left on the belt.
Seat section (permanent) is equipped with special holes for belts.

CAUTION!

Mattress belts should have space after their fixation to the back rest and shank rest sections frames!

4.4 Hand grip

A hand grip in I and II version of the bed is installed in special openings of the frame of the couch, in the same openings as a drip hanger from the patient's head (Figure 4.4a). The hand grip is provided on request of a client.

Fig. 4.4a Hand grip socket in the III and IV version of the bed

CAUTION!

The maximum load on the hand grip must not exceed 75 kg.

4.5 Shelf for bed linen

The shelf for bed linen is an integral part of the bed and is located under the bed, on the side of the legs. Figure 4.5a shows the swivel shelf for bed linen. Pull downwards the clamp pos. 1 with one hand and then with the other hand, turn the shelf to the outside to pull the shelf out from the bed. The shelf should be hidden when driving the bed and when tilting the Trendelenburg.

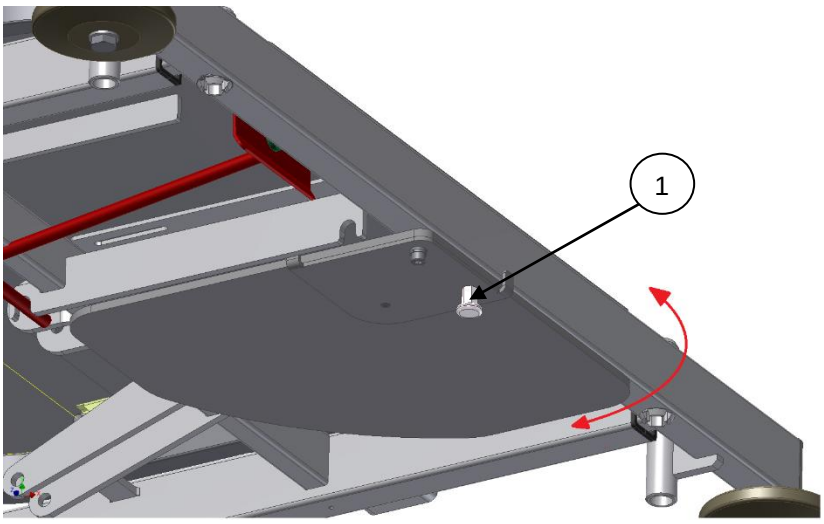


Fig. 4.5 Swivel shelf for bed linen

CAUTION!

The maximum load on the bedding shelf must not exceed 8 kg.

When the bed frame is extended, while tilting the anti-Trendelenburg the shelf should be hidden, because a collision with the floor may occur and the shelf may be damaged.

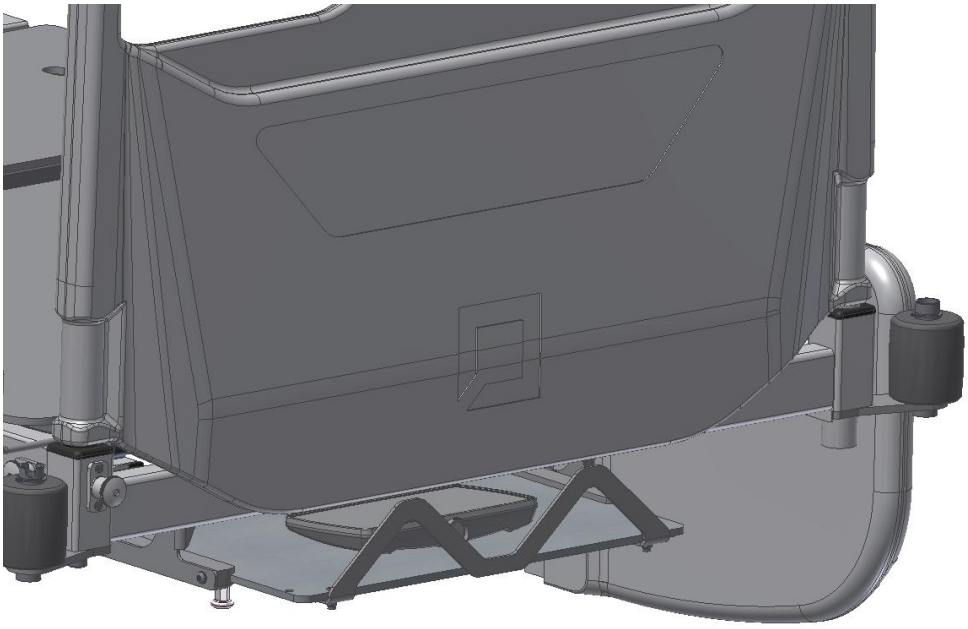


Fig. 4.5b Pull-out shelf for linen and control panel

Figure 4.5b shows the linen shelf and the control panel in the sliding version. The shelf in this version is attached under the mattress platform, from the patient leg side. To pull out the shelf, pull back the latch with one hand and pull the handle with the other hand until the latch locks automatically. The shelf should be hidden when the bed is transported and when the the anti-Trendelenburg tilt, cardiology chair or any other position required tilting towards the patient's legs is performed at the bed mattress platform extention. because a collision with the floor may occur and the shelf may be damaged. The control panel can be removed from the shelf without tools and attached to the footboard or side rails of the bed.

CAUTION!

The maximum load of the linen shelf can not exceed 8 kg.

When the bed mattress platform is extended, the shelf should be hidden during: performing an anti-Trendelenburg tilt, as there may be a collision with the floor and shelf damaging.

4.6 Fifth wheel

The bed can be equipped with a fifth wheel, attached to the base frame.
The fifth wheel allows easier and faster maneuverability of the bed.
The fifth wheel in the bed is maintenance free.

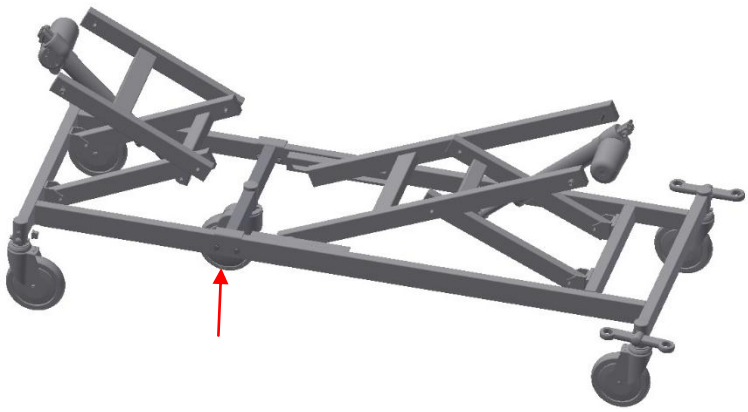


Fig. 4.6 Fifth wheel

4.7 Traction frame

The traction frame is an additional accessory for the bed and it is supplied upon the customer's request. The bed can be delivered with the frame assembled, or the frame can be delivered separately. The traction frame is constructed from welded and screwed elements, made of chrome-plated and white-painted pipes with a diameter of 25 x 2.5.

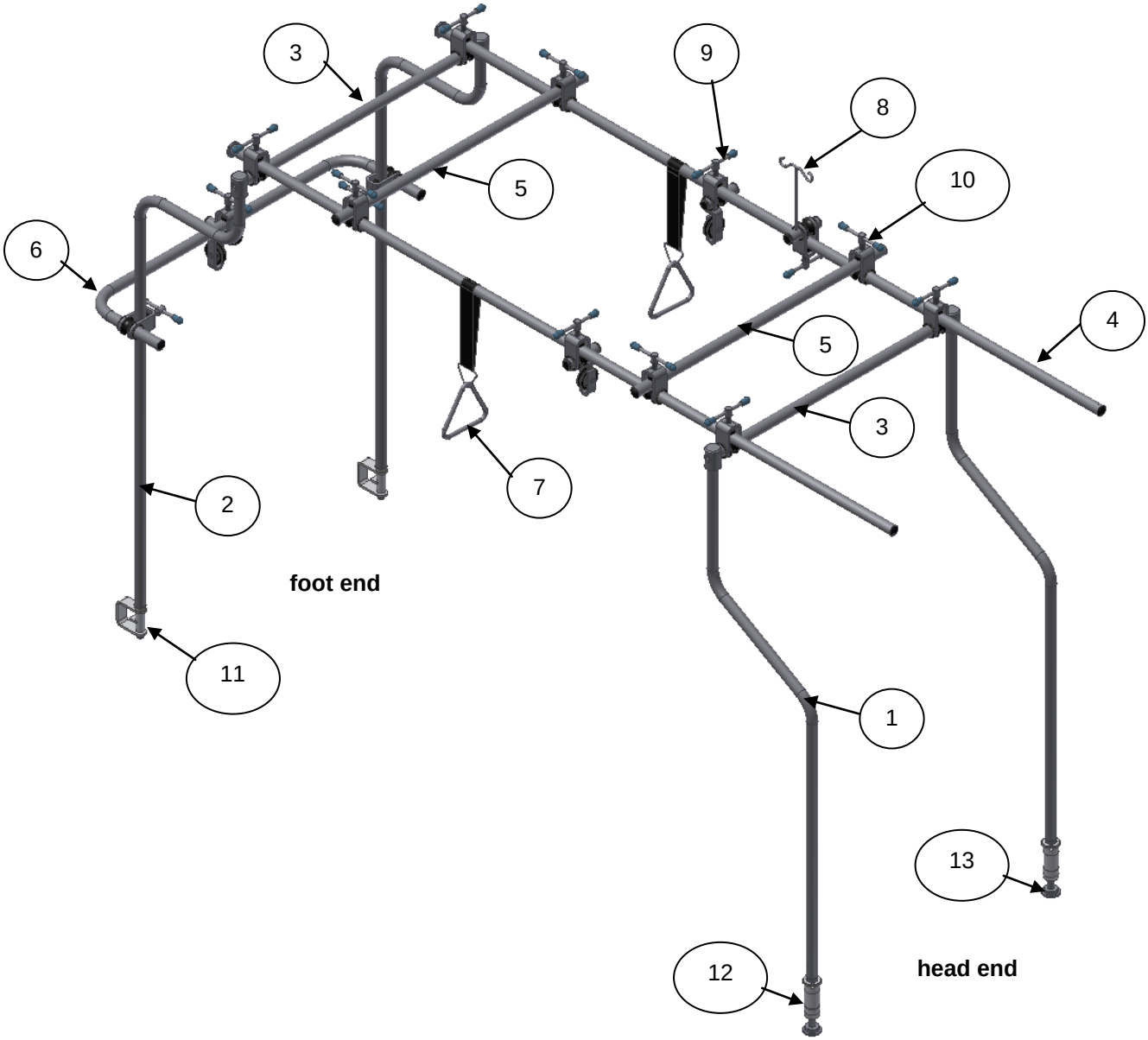
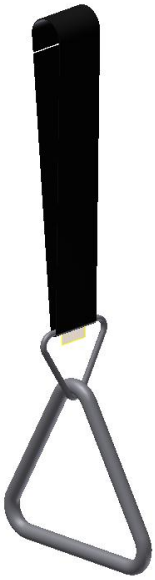


Fig. 4.7a Traction frame and its elements.

From the head end, the frame is attached to the handrail sockets through reducing sleeves made of plastic (pos. 12), while from the foot end, it is attached in the mounting sockets (pos. 11), which are placed on the transverse beam of the extendable bed section. After fitting into the sockets, the frame should be screwed using standardized elements from the foot end or a securing screw (pos. 13) from the head end.

The traction frame is equipped with a drip bottle hanger (pos. 8), two pull handles (triangles for lifting, pos. 7), and three roller holders, where one is mounted on the crossbar from the foot end and can serve as a traction device for a broken lower limb. Thanks to the jaw grips, the traction frame can be extended or shortened on the crossbar II (pos. 4), depending on the state of extension or shortening of the bed; it is sufficient to loosen the screw of the jaw grip.

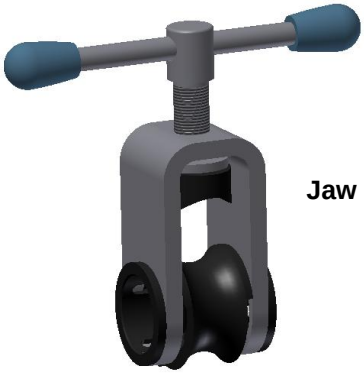


Pull handle pos. 7

Fig. 4.7 b

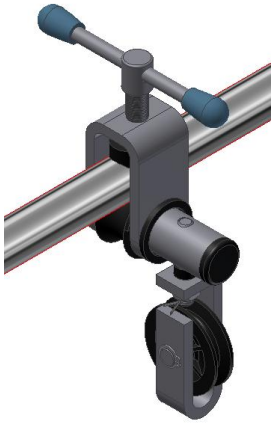
Drip bottle hanger on jaw grip pos. 8 and pos. 10"

Fig. 4.7c



Jaw grip pos. 10

Fig. 4.7d



Roller holder on jaw grip pos. 9 and pos. 10

Fig. 4.7e

Caution!

It is recommended (more frequently than periodic inspections) to check the screw connections in the traction frame, as they may loosen depending on usage. In case of loosening connections, tighten the screws securing the frame to the bed and the screws in the jaw grip handles.

5 Criteria of evaluation of a correct functioning of the product

Caution!

Correctness of bed functioning shall be checked at the day before the first start-up.

The method of checking whether the functioning of the bed is correct:

1. Check stability of the bed when its wheels are locked by trying to move the bed manually: pushing of the bed in any direction should not cause tilting or moving.

2. Check operation of the lock of the shank segment. The mechanism should work without any jamming, when it is locked the segment should not change its position (check by manual pressing of the segment).
3. Check if there are no mechanical plays by manually moving the segments of the bed.
4. Check activity of all bed function, which are performed electrically in full range of movements (height and angle adjustment of the couch, angle adjustment of backrest and thigh rest) see descriptions of item *3.1 Description of electronic steering system.*During every checking activities described in this item, the bed mechanisms should work quietly and smoothly, without scratches, creaks and the like. The bed mechanisms and electric actuators during the work emit the noise which does not exceed the value of 65dB (A) in a distance of 1 m from the bed.
5. Check the correctness of the all steering elements
6. Check the correctness of the blockade functions. The blockade of the movement from the central panel according to description in point 3.9.

If the bed underwent the above described tests with positive results and there were no disturbing sounds (squeaks and grinds), the bed can be used safely.

Otherwise see item 6.6 '*Localising and identification of faults*'.

Caution!

If the product is not fully functional, i.e. the output parameters differ from the description contained in this manual, the bed must not be used. This situation should be reported to the producer or supplier (dealer). The use of an improperly functioning product may result in damages, which will encumber the user and which will not be a matter of producer's responsibility.

6 Service

6.1 Storage

If the product is not to be used for a longer period of time, it should be stored in below mentioned climatic conditions:

- temperature: 25º ±10ºC,
- relative humidity: 50% ± 25%.

Periodically for storage purposes it is required to wash and preserve stainless steel elements with paraffin oil or steel preservation agents recommended in Appendix 2 to the Service Manual.
Washing and preservation operations shall be repeated every three months.
Switch off bed power supply for storage.

CAUTION!

For storage, disconnect the battery.

In case of prolonged storage, plug in the battery every 6 months and connect the bed to the power supply outlet for 12 hours to recharge the battery.

Do not store the bed with discharged battery in any circumstances.

6.2 Cleaning and disinfecting

For cleaning and disinfecting, there should be used only the cleaners and disinfectants recommended by Famed Żywiec Sp. Z o.o. listed in Annex 2 to this manual (allowed to turnover and use on the territory of the country, where they are used).

- **The power cable must be disconnected before disinfection**
- **It is allowed to use decontamination device with 7-12% hydrogen peroxide dilution for products disinfection.**
- **It is forbidden to wash the beds using high pressure washers (eg Karcher type) and in steam cleaners and disinfection chambers.**

- **Alcohol-based preparations / wipes are recommended for disinfection of external electronic control systems (keyboards, remote controls, wiring, electric actuators). After disinfection, the items should be carefully wiped dry.**

- **When cleaning and disinfecting the bed, do not allow the electronic parts (eg the remote control, control panel) to flood.**

- **The cleaning and disinfection of the mattress should be carried out in accordance with Annex 4**

- **It is prohibited to apply caustic, corrosive and bleaching agents**

- **Disinfectants containing in their composition active oxygen or chlorine at the concentrations given in Appendix 2 by Famed Żywiec Sp. Z o.o., do not cause deterioration of technical parameters or lowering the safety of the product.**

- **Long-term use of active chlorine-based agents accelerates the loss of aesthetic qualities in the form of:**

    - **loss of sheen in varnish coatings**
    - **yellowing of white paint coatings, change of shade in colored varnish coatings,**
    - **yellowing of white plastics,**
    - **yellowing of white upholstery materials and change of shade in coloured materials,**
    - **formation of rusty raids in stainlees steel surface, requiring periodic cleaning and maintenance,**

- **For components made of plastic (ABS, upholstery fabrics, polyurethane equipment) must not be used any cleaning agent whose components destroy their structure (organic solvents, petrol, acetone, alcohol in concentrations above 30%)**

- **The surface of the metallic, lacquered and chrome parts must not be damaged. Disinfection of damaged paint or chromium coating causes it to degrade – product corrosion.**

After washing and/or desinfection on product must be precisely drained!!!

Failure to observe to above-listed requirements shall result in loss of warranty rights.

6.3 Damages and defects

Damages and defects found in the product or accessories should be reported immediately to a person in charge of such issues. The bed which can not be safely operated (damaged electric or mechanical elements) must not be used till it is repaired.

6.4 Repairs and maintenance activities

Repairs are done by the producer. The user can not carry out any repairs on his own unless he has undergone special training or has been authorised to do that. When the producer has given his written permission for repair of the product by client's technical staff, the producer shall provide the client with necessary charts, lists of spare parts, descriptions and information on repairs.
The producer allows only to use original spare parts. In order to provide safe and reliable operation of the product one should use only spare parts provided by the producer. Worn out parts shall be removed as provided in environmental protection regulations.

Caution!

The product contains products which may be dangerous to the environment:

- oil (pneumatic spring),

- a gel battery – Type AG 7 – (1pce),

- electric and electronic elements.

The rules of proceeding with used products which may be dangerous to the environment are defined in environmental regulations.

In the case of used batteries replacement can make the manufacturer or qualified technical personnel in accordance with the instructions from the manufacturer replacement.

Used batteries receives a medical device manufacturer or indicated by the authorized repairer or Third Party having required by environmental law decisions to conduct.

Repairs and maintenance must be performed only by qualified personnel. If a product is operated outside Poland, one should inform about a necessity of a repair a producer or the dealer from whom the product was purchased.

Every repair of the product must be recorded on the list of repairs enclosed with the guarantee certificate. Disregarding this requirement will cause the guarantee for the product to be invalid.

6.5 List of the maintenance activities

In order to ensure safe and proper technical condition of the product, the product should undergo periodical technical inspections to be carried out by the manufacturer or authorised and trained technical staff of the customer.

Caution!

Service and repairs should be recorded on a list of repairs enclosed with product guarantee certificate.
Only a positive result of product inspection can be the basis for its further operation.

After the whole life of the product, a permission for its further operation is granted after obtaining a positive result of technical inspection made by the authorized service. The permission is granted every 12 months.

Range of technical inspections	***Frequency***
- checking functionality - checking general technical condition - checking of compliance with the IEC 62353 standard	every 12 months

In order to ensure safe and proper operating and long life of the product every six months the following actions should be performed.

Scope of technical condition check	
Chassis	• Checking screw joints • Checking the performance of the central lock and the traction system • Checking the electric system of steering
Couch	• Checking screw joints and protections on ball joints • Grease rotary joints • Checking operation of side raili • Checking operation of electric actuators

The checkout should be performed by visual inspection and the noticed malfunctions should be handled as in clause *6.6* "*Localising and identification of faults*".

In order to ensure safe and trouble-free operation of the product during its lifetime, the user should perform tests of compliance with the IEC 62353 standard, according to the following table.
The tests should be performed in the following situations:
- after repairs,

- periodically (every 12 months).
Periodically (every 12 months) check the condition of the batteries.

Scope of inspection	
Visual inspection	• Checking all fuses accessible from the outside, and their conformity with documentation (fuse capacity, characteristics), • Checking if all markings and labels are in place and legible, • Checking if all mechanical parts are in place, • Checking for damages and checking the cleanliness of the device, • Checking accessories, • Checking product documentation and documentation of previous inspections.
Measurements	• Measurement of protective earthing resistance, • Measurement of leakage currents, • Measurement of insulation resistance.
Functional test	• The functional test should be performed in the presence of a person with appropriate qualifications and training to operate the given device, • The functional test and the results of specific tests and measurements should be documented.

6.6 Localising and identification of faults

Fault	***Possible cause***	***Remedy***
The bed does not move	Locked wheels,	Unlock the central lock
The bed cannot be steered	Direction lock,	Unlock the central lock
The electric system of steering is not working	Power cord disconnected from mains and accumulators are discharged, Damaged electric system of steering,	Connect the cord to the mains, Call authorized service center
One or few of servo-motors are not working	Locked function on central panel of steering Damaged system of steering or servo-motor	Unlock function Call authorized service center
CPR function operates wit difficulty	Significant increase of resistance of CPR mechanism because of long term storage or transport in low temperature	Perform leveling of the pallet by means of CPR function few times using bigger force, what cause decrease of force needed
Movement realized by means of gas spring requires large force or does not work At all	Significant increase of resistance of spring movement, that was not used for some time	Perform few movements of spring Using bigger force, what cause decrease of force needed to perform the movement.
Central control panel does not work	suspension of control system	take off and connect again the cable of central control panel to control box

If the fault cannot be eliminated, put the product aside and call the repair department center or FAMED ŻYWIEC Sp. Z o.o. service.

6.7 Product liquidation

If the customer resigns from further product exploitation, he is obliged to product liquidation according to rules of environment protection; detailed information is situated in annex no. 3.

7 Characteristics of electromagnetic environment

Electromagnetic emissions

Medical device he NEXO, HORUS , LE-02.1 is to be used in electromagnetic environment specified below. The customer or the user of medical device the NEXO, HORUS , LE-02.1 should assure that it is used in such an environment.		
Emission type	**Classification**	**Electromagnetic environment – guidance**
emission RF CISPR 11	Group 1	Medical device: Medical Bed NEXO, HORUS , LE-02.1 produces energy with radio frequency only for its internal function. Therefore, their RF emission is very low and is not likely to cause any interference in nearby electronic equipment.
Emission RF CISPR 11	Class A	Medical device: Medical Bed NEXO, HORUS, LE-02.1 is intended for use in professional medical care areas. NOTE The EMISSION characteristics of this device make it suitable for use in professional medical care areas (CISPR 11 Class A). If used in a residential environment (for which CISPR 11 Class B is normally required), this device may not provide adequate protection for radio frequency communication services. The user may need to take countermeasures such as relocating or reorienting the device.
Harmonic emission IEC 61000-3-2	Class A	
Voltage fluctuation, flickering IEC 61000-3-3	Complies	

Electromagnetic immunity

Medical device the NEXO, HORUS, LE-02.1 is to be used in electromagnetic environment specified below. The customer or the user of medical device the NEXO, HORUS , LE-02.1 should assure that it is used in such an environment.			
Immunity test	**IEC 60601-1-2 Test level**	**Compliance level**	**Electromagnetic environment – guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	In the location of The NEXO, HORUS , LE-02.1 use the floor should be wooden, concrete or covered with ceramic tiles. If the floor is covered with a synthetic material, the relative humidity should be at least 30%.
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	± 1 kV differential mode ± 2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment
Series of quick transitory stages IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/ output lines	± 2 kV for power supply lines ± 1 kV for input/ output lines	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruption and voltage variations on power supply input lines IEC 61000-4-11	< 5% U_T (>95% dip U_T) for 0.5 cycle 40% U_T (60% dip U_T) for 5 cycles 70% U_T (30% dip U_T) for 25 cycles < 5% U_T (>95% dip U_T) for 5 seconds		Mains power quality should be that of a typical commercial or hospital environment. In normal use the NEXO, HORUS, LE-02.1 is battery operated. Connect to mains network only for battery charging.
NOTE U_T is the a.c. mains voltage prior to application of the test level			

Electromagnetic immunity

Medical device the NEXO, HORUS, LE-02.1 is to be used in electromagnetic environment specified below. The customer or the user of medical device the NEXO, HORUS, LE-02.1 should assure that it is used in such an environment.

Immunity test	**IEC 60601-1-2 Test level**	**Compliance level**	**Electromagnetic environment – guidance**
Transmitted disturbances induced by fields with radio frequencies IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	Portable and mobile RF communications equipment should be not used not closer to any part of the NEXO, HORUS, LE-02.1 including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separating distance:** $d = 1{,}2\sqrt{P}$
Electromagnetic field with radio frequency IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d = 1{,}2\sqrt{P}$ 80 MHz to 800 MHz $d = 2{,}3\sqrt{P}$ 800 MHz to 2.5 GHz where P is the maximal output power of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, [a] should be less than the compliance in each frequency range.[b] Interference may occur in the vicinity of equipment marked with following symbol: 

a Field strength from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radio, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the medical device the NEXO, HORUS is used exceeds the applicable RF compliance level above medical device NEXO, HORUS should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the medical device the NEXO, HORUS.

B Over the frequency range 150 kHz to 80 MHz, field strength should be less than 3 V/m.

NOTES

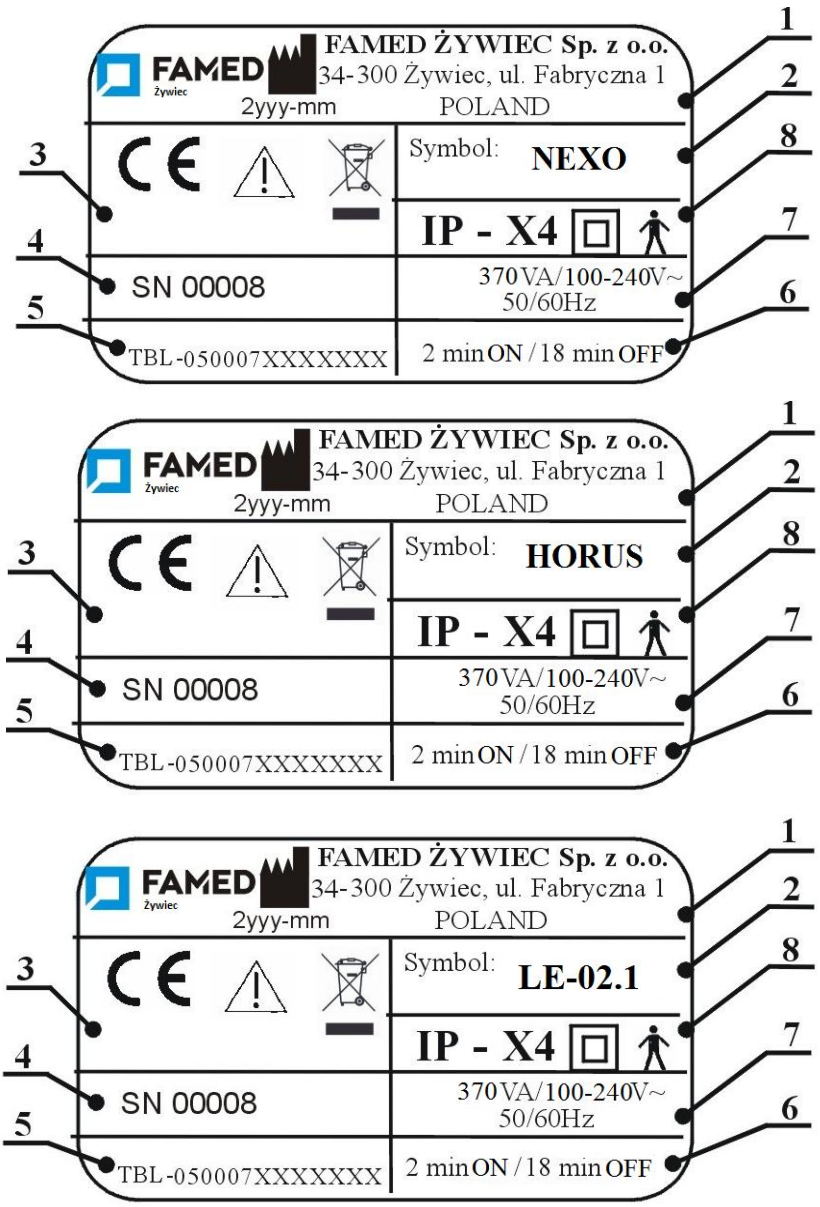
At 80 MHz and 800 MHz, the higher frequency range applies.
These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

8 Bed identification

When sending / asking any questions concerning the bed and when ordering spare parts, please give the serial number of the bed placed on the nameplate and the guarantee certificate.

The nameplate is located on the lower part of the backrest plate.

8.1 Nameplate



Description of meanings of particular boxes of a name plate

1 – Logo, symbol “manufacturer”, date of production, name and address of the Manufacturer,

2 – Product symbol,,

3 – General markers

CE CE mark,

⚠ “Warning! – Follow the instructions for safe use “.

Caution! – During disposal of the product, one should act according to the Act concerning electrical and electronic equipment waste

4 – Product trade number with untypical order number (if applicable),

5 – Index of the product,

6 – Class of duty

7 – Power supply specification,

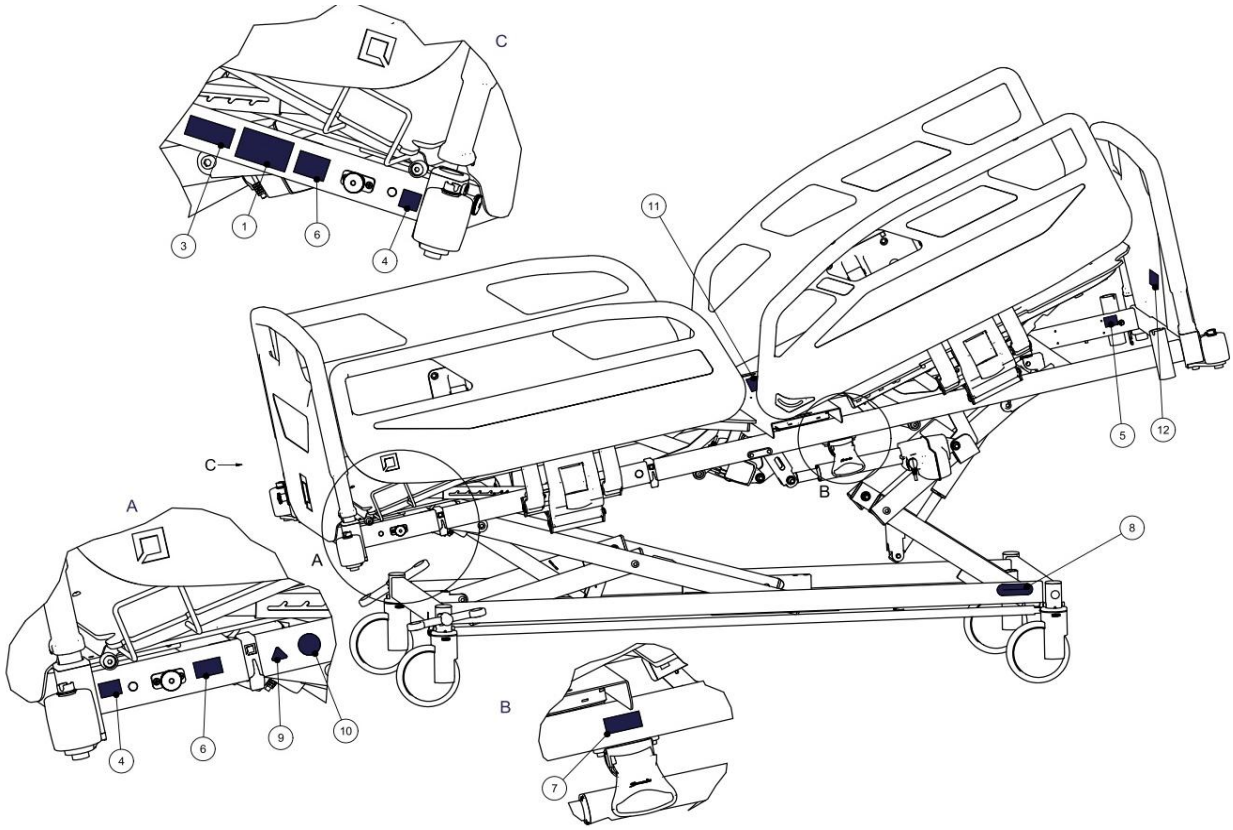
8 – Additional markings:

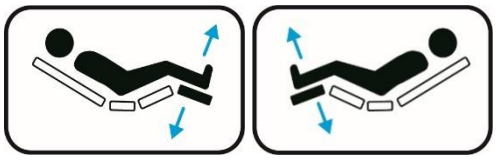
IP-X4 Degree of protection,

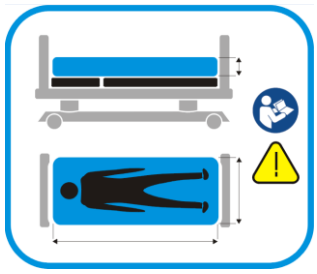
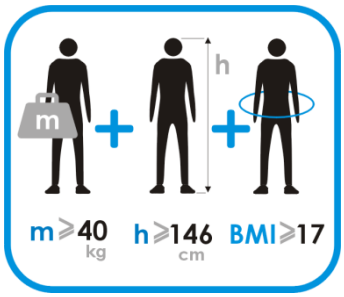
Application part B.

Class of protection against electric paralysis – II

8.2 Labels



1	*See point no. 8.1*	*Nameplate*
2	FAMED Żywiec	*LOGO FAMED*
3		*Maximal workload 185 kg / 250 kg or 215 kg / 280 kg*
4		*Direction of release, pull out, insert*
5		*Potential equalization clamp*
6		*Shank rest segment holder*
7		*CPR lever of backrest segment*
8		*Central wheel lock*
9		*Warning! – Follow the instructions for safe use.*
10		*Follow the instructions*

11		*Marking of replacement mattresses: incompatibile mattress can cause danger.*
12		*Physical conditions for the qualification of the patient as an adult*

Notice! **The producer reserves the right to introduce in the product modifications resulting from technical progress which are not covered in this operating manual.**