



## Olympus Bariatric Folding Bed APH100



# USER'S MANUAL

First Issue (14/02/2024)



This product conforms to the standards of the Medical Directive 93/42/EEC as implemented by Legislative Decree 46/97 and s.m.e.i.



- 1- HEAD PANEL
- 2- METAL 3-BAR BED RAILS
- 3- HAND CONTROL
- 4- BED RAIL RELEASE LEVER
- 5- FOOT PANEL
- 6- WHEELS WITH BRAKE
- 7- BED FOLDING LOCKING LEVER

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# 1. INTRODUCTION

Dear customer,

Apollo Healthcare Technologies wishes to thank you for purchasing one of our nursing beds and for the trust shown in our products.

The electrical safety and functionality of each bed have been tested by the manufacturer in order to avoid any faults.

This manual contains important information regarding the safe setup and use of the bed. It is important that anybody involved should have read and understood its contents. Failure to do so could result in damage to the bed and may invalidate the warranty. Please be aware that elements of the bed are heavy. Those involved should observe the safe lifting and handling techniques recommended under Health & Safety Regulations

This manual provides useful information to the buyer and to the end user on all the functions which will allow a safe and practical daily use of this bed.

Therefore we recommend you to use this manual as a handy guide and to keep it near your bed.

## 2. GENERAL INFORMATION



### **Before using the bed:**

- Read through this whole manual in order to avoid causing damages to the bed due to improper use.

Before using the nursing bed, the user must verify its perfect status and complete efficiency. This bed conforms to all the requirements of Directive 93/42/EEC for medical products and it is classified as a Class I medical device.

**This manual contains safety instructions which must be fully respected. All the people involved with using the bed must know the complete contents of this manual and observe the safety warnings listed herein.**

### **Information for the owner:**

- Every electrical appliance may cause hazards if used incorrectly. Therefore it is necessary to instruct the user on how to use the nursing bed correctly.
- Inform the user of where this manual will be kept.

### **2.1 Groups of people mentioned in this manual**

The manual may refer to the following groups of people somehow involved with using the bed:

- **Owner**  
The owner (for example: suppliers of medical products, dealers, health care authorities, etc.) can be any physical person or juridical body which uses the nursing bed or under whose name the bed is being used. The owner is responsible for providing the necessary information to the user.
- **User**  
the user is the person authorized to use the nursing bed and to carry out any operations on the bed on the basis of his/her training, experience or education, and who has been trained to use the bed. Furthermore, the user must be able to recognize and avoid potential hazards and evaluate the condition of the patient.
- **Patient**  
In this manual the term patient refers to the person who needs to be taken care of, who might be sick or disabled and therefore in need of using this bed.
- **Specialized personnel**  
The term specialized personnel refers to the owner's co-operators who are authorized, on the basis of their training or education, to deliver and assemble.

## 2.2 Safety warnings

The nursing bed is a high technology product, therefore make sure to read the complete manual when delivered. Make sure to use the nursing bed only if it is in good condition. The goal of the safety warnings is to avoid injuries to people.

### 2.2.1 Safety symbols used

The following symbols appear in this manual:

#### Warnings against injuries



This symbol indicates the presence of dangerous power voltage which could jeopardize the user's life.



This symbol indicates the presence of hazards which might jeopardize the user's life and cause health problems.

#### Warnings against damages to property



This symbol indicates a potential damage to things or properties. Damages to the bed mechanism, to its materials or to the environment might occur.

#### Other warnings



This symbol indicates a general useful suggestion. Following this suggestion, it will be easier to use the bed and to understand the instructions.

**The safety symbol used does not replace the safety text it refers to.**

**It is always necessary to read the relevant safety warning in full and to follow it carefully!**

### 2.2.2 Safety warnings for the owner

- Before the bed is used, inform the user about safely operating the bed by strictly following this manual which must be provided together with the bed. Inform each user of any possible dangers due to any improper use. Pay special attention when using the electric functions and the bed rails.
- Nursing beds are classified as active Class I medical devices. You must fulfil your obligations in accordance with the current regulations about installation, operation and use of medical devices, to ensure a safe and durable use of this medical product without any risks for patients, users and any third parties. In case of a prolonged use of the bed, it is necessary to carry out an inspection, after a certain period of time (we recommend at least every year), to check its functionality and any visible damages (see Chapter 6).
- Make sure that only qualified personnel use this bed.

- Make sure that any possible substitute personnel are also sufficiently trained on how to use the bed correctly.
- In case any additional electric accessories are used such as air compressors for overlay mattresses, make sure they are properly installed and work correctly. In particular pay attention to the following:
  - Make sure all cables, flexible tubes etc are fixed correctly.
  - Do not use a multiple socket under the bed (possible fire hazard in case of contact with liquids). If in doubt, please contact the manufacturer of the accessories.
- Make sure all staff complies with the safety warnings.

### 2.2.3 Safety instructions for the user

- Make sure to be instructed on the safe use of the bed by the owner.
- Before each use check the good condition and the absence of defects in the nursing bed.
- Make sure there are no obstructions such as furniture or inclinations of the ceiling when making any adjustments.
- In case any additional electric components are also used such as hoists, reading lamps or air compressors for overlay mattresses, make sure their cable does not get caught in the mobile parts of the bed or get damaged.
- Multiple sockets must not be used for connecting any external electrical components.
- If you suspect damage or malfunctioning, immediately disconnect the power plug from the wall, clearly mark it as "Damaged" and deactivate the nursing bed. Immediately inform the owner of the bed about this situation. In chapter 6.1 you will find a checklist to assess the condition of the bed.

### Safety warnings for the user



- The power cord must be installed so that when operating the bed it is not carried away, crushed or damaged by any moving parts.
- Before transport totally remove the plug from the socket.
- When the bed is not used, make sure there is no possibility for the hand control to fall and get damaged (it must remain attached to the hook). Make sure the cable cannot be damaged by any moving parts of the nursing bed.
- Place the bed in the lowest position when you leave the patient unattended on the bed. In so doing, the risk of injuries to the patient when getting on and off the bed is minimized.
- The adjustments can be made only by trained personnel or in the presence of experienced staff.
- Check the power cord regularly for possible mechanical damages (abrasions, uncovered wires, bends, dents, etc...) especially in the following cases:
  - after each mechanical overload (for example: crushing of the cable with the bed itself or with a trolley, after strong tractions and bending of the bed with the power cord plugged in)
  - after each change of position/after every movement before inserting the plug
  - during the normal operation by the user
- Regularly check that the power cord assembly is properly tightened.

## 2.3 Product description

### 2.3.1 Proper use

- The nursing bed, hereinafter simply called "bed", is designed for disabled or ill people and is suitable also for home care.
- The bed was not specifically designed for hospital use.
- This bed can be used for treatment with a doctor's prescription and it can be used for diagnosis, care or observation of the patient.
- This bed does not have any special options suitable for an equipotential connection. Make sure to take this aspect into account before connecting with any other (medical) equipment already linked to the power supply.
- This bed must be used only by adequately trained people.
- This bed is designed for repeated re-use. Please follow the instructions listed below:
  - Cleaning and disinfecting (see chapter 5)
  - Maintenance / Verification of tests (see chapter 6.2)

**This bed can be used only according to the use conditions described in this manual. Any other use is not to be considered as proper.**

### 2.3.2 Features

- Electric height adjustment of the bed surface from 33 to 73 cm.
- Electric backrest section adjustment from 0° to 73°.
- Electric leg section adjustment from 0° to 30°.
- Four x 120mm dia. swivel wheels, individually lockable.
- Hospital surface 215 x 120 cm.
- Overall dimensions about 229 x 136.
- Option of full length 3 Bar Aluminium wood effect bed rails on both sides.
- Built-in Auto-regression

### 2.3.3 Materials used

The bed is mostly made up by steel tubing profiles, covered by a polyester powder coating or by a metallic zinc or chrome coating. The head/foot panels are made of wood or similar material, whose surface is waterproof.

**The surfaces are not harmful in contact with the skin.**



### 2.3.4 Frame

- The bed is supplied fully assembled (except the side rails) to be easily transported by one person into the care facility/house. It is folded up into the transport mode with all motors already attached. The two three-bar metal bed rails and one lifting pole with grab bar (accessory NOT included with the bed) will be supplied separately. The bed has four swivel wheels, all with a parking brake.

- **Mattress base**

The mattress base is hinged in the middle to fold and unfold electronically for easy one person installation. When un-folded It is divided into a backrest with auto-regression, a leg support with a knee break. These elements are adjustable. The foot or head parts of the mattress base can be adjusted in height horizontally or obliquely compared to the floor. All the adjustments are performed by electric motors by using a hand control.

- **Bed Rails**

To protect patients from possible accidental falls from the bed, the bed can be equipped with rails (meet clause 201.9.8.3.3 of IEC 60601-2-52) on both sides, which can act as a barrier or be lowered when not in use. The blocking mechanism is locked and it can be released only by pulling the lever out on the side (see No. 4 on Page 2)

- **Electric system**

The electric operating system of this bed is safe and easy to use. It consists of:

- Electronic controller. A minimum protection voltage of 24 volts is produced which is not dangerous for the patient and the user. The electric motors and the hand control are connected to the central controller with connectors, which work with a minimum protection voltage of 24 volts.
- Separate electric motors for the back and the leg supports.
- The electric motor for the back support also acts to fold and un-fold the bed.
- Two electric motors to adjust the height of the mattress base (one in each bed end).
- A hand control unit with fixed hook.



### 3. ASSEMBLY AND OPERATION

- The bed is supplied part assembled.
- The bed is assembled on location by the retailer's personnel.
- The installation must be carried out by a minimum of one person.

#### Packaging units:

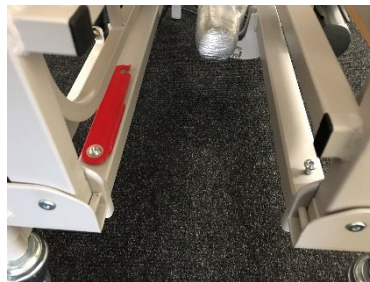
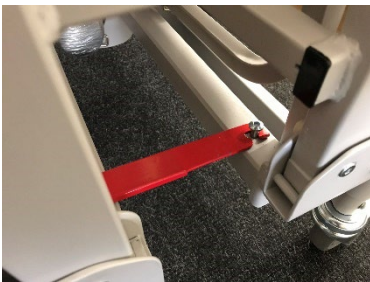
**Carton 1:** Complete bed frame consisting of the mattress platform and head and foot end panels. Main control unit, hand control, back & foot rest actuators and 2 height adjusting actuators.

#### 3.1 Assembly

Mounting instructions:

- The assembly of the bed must be carried out by a minimum of one person;

Unpack the bed frame from carton 1 and make sure that the 2 wheels on the headboard are in the locked position and the 2 wheels on the footboard are unlocked.



Unhook the red transport securing arm to let the bed begin to unfold. You will need to manually push the 2 halves of the folded bed together a little so that the hook can move free from the pin

The buttons on the handset that control the angle of the back rest also control the folding and unfolding of the bed.

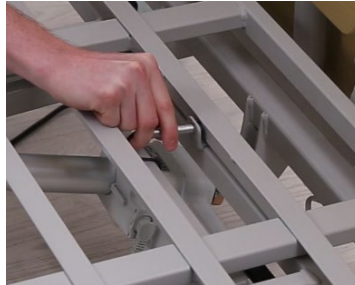
By pressing the button to lower the back rest it will unfold the bed automatically until it is in the flat position.





**Never attempt to unfold the bed automatically before unhooking the transport securing arm.**

Once the bed frame is in the flat position and the backrest actuator has ceased moving, the bed is ready to be used.



Located at the head end of the bed, in the centre of the backrest mattress platform there is a metal pin illustrated in the image above left. In order to raise the backrest you must fully remove the metal pin from the backrest mattress platform by simply pulling it toward the foot end of the bed (as shown in the image above middle). The pin is attached to a black rubber securing strap to prevent accidental loss (as shown in the image above right).

This will then enable the backrest actuator to operate the mattress platform rather than folding the bed back up. The leg rest actuator and the two height adjusting actuators on the head and foot boards are already connected to the central control box. These can now be operated using the hand control.

To fold the bed back up ensure that the mattress platform is flat (backrest and leg rest lowered fully) and in its lowest position. Then reinsert the metal pin back into the backrest mattress platform (image above left). This will disengage the backrest actuator for operating the mattress platform and engage the bed folding mechanism.

Making sure that the wheels on the headboard are both locked and the wheels on the footboard are both unlocked, press the button on the handset to raise the backrest and the bed will begin to fold up.

Once the backrest actuator has fully extended you can push the footboard towards the headboard to attach the red transport securing arm to hold the bed in the folded position.



**Before folding the bed back up make sure that the mattress platform, including the leg rest, is completely flat and that the bed is in the lowest position.**



**Never attempt to use any other functions on the bed when in the folded position. Only the backrest buttons to either fold or unfold the bed. Only use the other functions when the bed is completely unfolded and flat.**



**Make sure not to damage any cables. Verify that the cables do not get tangled and that they do not get caught in any in moving parts.**



**In case of replacement of any individual components, always make sure that the electric plugs are then properly inserted into the controller. Only in this way the bed will function properly.**

### 3.1.1 Use of accessories

Apollo Healthcare Technologies can supply various accessories for use with this bed including side rails, lifting pole, bed lever and dynamic mattress systems. For correct installation of accessories please refer to section **4** of this manual.



**Use of non-Apollo Healthcare Technologies accessories is not advised. Installing third party accessories could restrict the moving parts of the bed. The warranty does not cover any damages caused by use of third party accessories and your warranty could be void if third party accessories are installed and used.**



**Ensure all accessories are fully removed from the bed before attempting to fold the bed back up into the storage/transport position.**

## 3.2 Operations

Every time before using the bed, the user must make sure that:

- the wheels of the bed are locked (see also chapter 4.3).
- the power supply is compatible with the bed (230 Volt, 50 Hertz).
- the power cable is plugged in and placed in such a way that it cannot be damaged.
- the power cable, the motor cables and the hand control cable are not damaged by any moving parts of the nursing bed.
- there are no obstacles in the way such as bedsides or chairs.
- any accessories are installed correctly and do not restrict the free movement of any part of the bed especially the backrest and knee break mattress platform.
- all control functions have been accurately inspected (see also chapter 6.1) and are working properly.
- only after having carried out the above operations it will be possible to start using the bed.

### 3.2.1 Requirements of the installation site

- Make sure there is enough space to allow the whole range of adjustments of the bed. There should not be any furniture or other objects close to the bed such as window cills.
- If the bed is to be used on parquet floor, make sure that the use of wheels will not cause any discolouring due to the parquet waterproof treatment. It is possible to use the bed on tiles, carpets, laminated floors and linoleum.
- A 230 volt power outlet, correctly installed, must be located as near as possible to the bed.
- If there is the need to use other accessories (such as compressor systems, bed levers etc...), make sure they are correctly fixed and that they work properly. In particular, make sure all different cables are safely connected and no moving part of the bed is restricted from moving freely as it should. In case of questions or doubts please contact the manufacturer of such accessories.



**During the installation of the bed you must take the following issues into serious consideration to minimize potential fire hazards due to external influences. Inform the user and the personnel about these issues!**

- If possible, use only non-flammable mattresses and linens.
- Don't smoke while in bed as there is no guarantee against risks caused by smoking tools (such as lighters, matches) depending on the mattresses and linens used.
- Use any electric accessories (electric blanket) and appliances (lights, radios) only if they are in a good condition.
- Make sure these appliances are used only for their intended purpose and that they cannot accidentally end up on and under the sheets (risk of overheating).
- Absolutely avoid using extension cables or connections to multiple sockets under the bed (fire hazard due to the penetration of liquids).
- Extension cables and/or power multiple sockets should never be used at all.

### **3.2.2 Operations**

- After the assembly of the bed, make sure to carry out an inspection in conformity with chapter 6.2.

**After carrying out all the instructions listed in chapters 3.1 3.2.2 the bed can start functioning.**

## **4. FUNCTIONING**

### **4.1 Special safety warnings**



- When making the adjustments make sure that no parts of the body of any patients, users and other people, especially children, are positioned under any adjustable elements or under the bed frame to avoid being caught and injured.
- Once you have made the necessary adjustments and positioned the bed rails correctly, make sure to lock the backrest and leg adjustments possibilities with the hand control, to protect the patient from unwanted movements (risk of crushing of his/her limbs).
- In case of use of accessories on the electric bed, make sure such accessories do not crush or cut the patient with sharp edges during the legs and backrest adjustments. If this condition is not guaranteed, the user must not proceed with the backrest and legs adjustments.
- Make sure the power cable and the hand control cable do not get caught anywhere or get damaged.



- Before each operation with the bed, make sure the power cable is not stretched, crushed or damaged in any way.
- When making the adjustments, make sure there are no obstructions such as furniture or a ceiling inclination, to avoid possible damages.



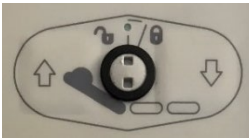
As with all electrical appliances, despite the compliance with prescribed values, it is not possible to totally exclude the possibility of interferences from other electrical devices which might be nearby (for ex. the “buzz” of a radio). In such a rare case, increase the distance of the bed from the interfering device, do not use the same socket or temporarily disconnect such device.

## 4.2 Hand control

The electric functions of the bed are activated by the patient and by the user with a hand control.

- The electric motors work if the corresponding buttons are pressed.
- It is possible to adjust different sections in both directions.
- The hand control can be attached to the bed where needed with a hook.
- The spiral cable allows freedom of movement.

### 4.2.1 Hand control use



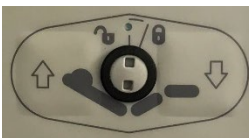
#### Backrest adjustment / Folding & Unfolding the Bed

When the bed is in use these buttons are used to change the angle of the backrest. These buttons are also used to fold and unfold the bed (see Section 3.1 Assembly on page 10 of this manual for further details)



#### Leg support adjustment

When the bed is in use these buttons are used to change the angle of the leg support (knee break).



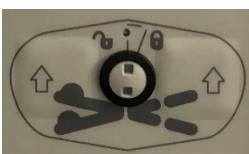
#### Backrest and leg support combined adjustment (Auto-Contour)

When the bed is in use these buttons are used to change the angle of the backrest and the angle of the leg support simultaneously.



#### Height adjustment of the mattress base

When the bed is in use these buttons are used to change the height of the mattress base. When the height is adjusted there is an automatic horizontal positioning of the mattress base in the highest/lowest position.



#### Angle adjustment of feet – head section (Trendelenburg Tilt)

When the bed is in use these buttons can be used to lower the foot or head section independently. When the height is adjusted there is an automatic horizontal adjustment of the mattress base if lowered at the feet in the highest position and/or in the lowest one.

Before lowering either section, you need to release the brake of the two wheels on the head or foot panel side, to avoid possible damages to the floor.

**Nurse Lock-Out** – Each pair of buttons on the handset can be individually locked out to prevent unwanted operation. Using the blue key provided with the handset you can turn the central lock to either UNLOCKED (12 o'clock position) or LOCKED (1 o'clock position).

### 4.3 Swivel wheels

The nursing bed has four swivelling castors which can be blocked individually.



- Bring the mattress base into its lowest position.
- Before each operation of the bed, make sure the power cable is not stretched, crushed or damaged in any way.

**How to apply the brake:** Press the lower lever down with your foot until it clicks.



**How to release the brake:** Press down with your foot on the upper lever until it clicks and the lower lever springs up.

### 4.4 Lifting Pole (additional accessory)

In both corners of the mattress base, towards the head panel, there is a round insert with a cavity into which a lifting pole can be placed. The lifting pole should be inserted in the side from where the patient gets in or out of the bed to help him/her out.

#### Assembly

- Place the lifting pole into its housing. The metal pin must be placed into the cavity. Make sure to double check the oscillation field of the lifting pole which must be limited.

#### Disassembly

- Remove the lifting pole from its housing by pulling it upwards.

### Height adjustment of the handle

The height of the lifting pole handle can be adjusted with the strap supplied.

### 4.5 Bed Lever (additional accessory)

The Apollo Healthcare Technologies bed lever can be installed to aid the bed user move from a lying to a sitting and to a standing position.

#### Fitting

The bed lever can be fitted to either side of the bed frame. Secure the bed lever by unscrewing the hand screws and fitting the brackets over the frame. Fully tighten the hand screws when the lever is located correctly. The top of the bracket must be flush with the top of the bed frame with no movement possible up or along the frame.





The Apollo bed lever is designed to not restrict any moving part of the bed including the side rails and backrest mattress platform. Do not install any third party bed lever as it may restrict the moving parts of the bed, especially the backrest mattress platform. Remove bed lever before folding the bed back up.

#### 4.6 Dynamic Mattress (additional accessory)

Apollo Healthcare Technologies can supply a number of dynamic mattresses for use with the bed if required by the user. There are various ways in which the dynamic mattresses can be secured to the bed to stop it moving or slipping when the mattress platform is profiled but it is essential that in doing so, the movement of the mattress platform is not restricted in any way.

The example below shown in the images is of a dynamic mattress that utilises webbing straps in order to secure the mattress to the bed. The image on the right is the correct way where the straps are only secured to the moving part of the bed, namely the backrest mattress platform. The image on the left shown the incorrect way where the straps have also been secured around the non-moving frame of the bed.



#### 4.7 Bed side rails

**Special safety rules for the bed rails.**



The bed rails are there to protect patients from possible accidental falls from the bed. However, they cannot prevent the patient from voluntarily leaving the bed. To make the best use of their intended protection function, please observe the following precautions:

- Use only undamaged, originally supplied Apollo bed rails that are in good conditions and installed correctly to allow the rails to lock into place properly.
- When using bed rails you must always verify if they are suitable for each individual patient. In particular, it is necessary to pay attention to the distance between the bars in relation to the patients' build. Padding or pads around the bed rails (optional) can be utilised. Only in this way will it be safe to use the bed without the risk of the patient being caught or to slide out of the bed rails.



- **All mechanical elements that attach to the bed including the side rails should be checked regularly to make sure there are no signs of damage. This must be done not only before applying the bed rails, but also during use within short intervals (at least before any new use).**
- **When applying the bed rails to the electric bed always make sure to block the backrest and leg supports with the hand control to protect the patient from any accidental electric movements (risk of involuntarily crushing the patient's limbs or damaging the bed).**

Failure to comply with the above safety rules will lead to the possible risks of the patient getting caught in the bed rails, falling out of the bed if the bed rails are too wide due to possible damages, in case they are not the correct bed rails for the electric bed or if they have not been mounted and inserted correctly.

### Fitting

- The easiest way is to raise the bed to its highest position.
- Slide the 4 runners (consisting of 3 pegs each) into the bottom of the channels on either side of the head and foot boards.
- You may have to press in the bottom button in order to slide each peg into the channel (Image 1).
- Pull each runner up so the top peg is above the top button ensure the button pops out to hold it in place (Image 2).
- Fit the 12 end caps onto both ends of the 6 side rails, ensuring that the red securing clips on either end of each side rail are on the same side (Image 3).
- Each side rail can then easily be fitted to the bed by hooking each end onto the pegs at either end of the bed, ensuring the red securing clip pops out under the peg (Image 4)
- Once all rails have been fitted to the pegs, ensure all the red securing clips are out to stop the rail from lifting off the pegs.
- In order to lower the rails, lift the top bed rail slightly and press the upper button and lower bed rail slowly to its lower position.
- In order to raise the rails, lift up the top bed rail until it is in the highest position on both ends above the top button.
- Check that all the bed rails are properly installed by pressing from the top of each bed rail. You should not be able to move them downwards.



Image 1

Image 2



Image 3



Image 4

### Removal

- To remove the bed rails, press and hold in the red securing clip on the end cap and lift up the end of the side rail off the peg. Repeat this process at both ends of the side rail.
- Repeat this process for all side rails and store safely for later use is required.
- The runners can remain in the channels in the head and footboards of the bed but should they need to be removed, slide them out the bottom of the channel by pressing and holding in the button.

Failure to comply with the above safety rules will lead to the possible risks of the patient getting caught in the bed rails, falling out of the bed if the bed rails are too wide due to possible damages, in case they are not the correct bed rails for the electric bed or if they have not been mounted and inserted correctly.

## 5. CLEANING AND DISINFECTING

### 5.1 General information

Clearing is fundamental as well as a proper chemical disinfection. In general, regular cleaning of the bed when used by a single patient is sufficient in terms of hygiene. It is necessary to disinfect the bed frame only in case of a visible contamination with contagious or potentially contagious materials (ex. blood, urine, pus etc.) or in case of a contagious disease upon request by the physician.

**Every time the bed is used by a new patient, it is mandatory to first clean and then disinfect the bed by scrubbing thoroughly!**



**Before you start clearing:**

- **Remove the plug from the socket and make sure it does not come into contact with water or disinfectant.**
- **Make sure all plugs are properly connected.**
- **None of the electric components must be externally damaged to avoid the penetration of water or disinfectant liquids which might lead to malfunctioning or damages to the electric components.**
- **Before using the bed again, by drying or blowing in the power plug, make sure there is no residual moisture left in the electrical contacts.**
- **The electric components must not be subjected to a water jet, a high pressure cleaner or anything similar! Cleaning should be done with a damp cloth!**
- **If you suspect that water or moisture have entered into the electric components, immediately remove the power plug from the socket outlet and do not plug it in again. Mark clearly the bed with a “Faulty” sign and make sure it cannot be used. Inform immediately the owner of the bed about the problem.**

**In case of non-compliance with these safety rules, it is not possible to exclude the risk of serious damages to the bed with related consequences!**

### 5.2 Cleaning and disinfection program

- Remove the sheets from the bed to be washed.
- Clean all surfaces including the mattress platform, the plastic inserts and cables with a mild non aggressive detergent, including the hand control.
- The bed should be disinfected by scrubbing using a disinfectant recommended for hospital use especially in case of visible contamination with contagious or potentially infectious material. The same as applicable to beds in intensive care or infectious diseases units.
- It is necessary to disinfect the wheels only in case of visible contamination with infectious or potentially infectious material.

**Note: A continuous disinfection is necessary only in case of patients with multi-resistant pathogens within a hospital**

### 5.3 Training of users and specialized personnel

To ensure a proper cleaning and disinfecting procedure, we recommend you to appropriately train all users and specialized personnel involved. The following points must be respected:

- Make sure the bed does not get soiled or contaminated during transport to the patient's house.
- In case of disassembly of the bed, it is necessary to immediately clean and disinfect it by scrubbing. The personnel must be informed about the correct cleaning and disinfecting procedure and carry out his/her necessary treatment properly (according to the steps of the procedure notified by the owner). The disinfectant used must be suitable for the treated surface.
- For this operation the specialized personnel shall be provided with waterproof disposable gloves and aprons.
- For the treatment only clean cloths should be used which must then be taken to be washed.
- After the treatment the personnel should disinfect their hands before leaving the place to go somewhere else. The qualified personnel must be equipped with a disinfectant with dispenser.

Cleaning of the bed directly on site has the advantage that the bed and/or none of its parts can get "soiled" when then transported in the same vehicle with other clean beds. It prevents potentially infectious germs located in the bed frame from spreading around. These recommendations will help to prevent nosocomial infections. If the beds are not immediately reused, they should be stored away with a cover to protect from dust and accidental contamination.

### 5.4 Detergents and disinfectants

Make sure to follow the recommendations listed below to maintain the bed functionality as long as possible:

- All surfaces must be intact and any damages must be immediately eliminated.
- We recommend using a method of disinfection (wet) by scrubbing. The detergent should not be aggressive (not harmful for the skin and for surfaces) and it must be ecological. In general you can use a household detergent.
- To clean and disinfect the painted metal parts use a damp cloth with a common non aggressive mild household detergent.
- The disinfectant for scrubbing the bed must be chosen from among those recommended (in the indicated concentration).
- Despite the mechanical strength of the bed it is necessary to remove any scratches and dents in the paint with special repair kits in order to prevent moisture penetration.



**Never use abrasive clearing products and stainless steel cleaners containing solvents or clearing pads, to avoid damaging the bed surface.**

**Note – Aldehyde-based disinfectants normally cover a wide action range and are ecological. However, they are potentially allergenic and irritating. Glucoprotamina preparations do not present this problem and are very effective even though in most cases they are quite expensive. Disinfectants based on chlorine splitting compounds can have a**

**corrosive effect on metals, plastics, rubber or other materials in case of a prolonged contact or in high concentrations. In addition, these products can be irritating for mucous membranes and do not have a great environmental resistance.**

#### **5.4.1 How to use disinfectants**

- Pay attention to the proper dosage! We recommend using automatic dispensers.
- Prepare the solution always with cold water to prevent the build up of vapours which might be irritating for mucous membranes.
- Wear gloves to avoid any direct contact with the skin.
- Do not store the disinfectant solutions in open bottles or containers. Make sure to always close them!
- Use bottles with pump dispensers to wet the cleaning cloth.
- Ventilate the room after the disinfection.
- Carry out the disinfection by scrubbing and not by spraying the disinfectant in a large quantitative with the risk of being inhaled.
- This is why rubbing plays an important role.
- Do not use alcohol for large surfaces.

## **6. MAINTENANCE**

### **Regulations**

The owners of the nursing beds, in accordance with the applicable regulations in force, are requested to guarantee the safety conditions of the medical products during their use. To achieve this, it is therefore necessary to regularly carry out inspections and maintenance interventions.

### **Notes for the owner**

This bed was manufactured to function properly for a long period of time. When used correctly, it can be operated for around 2 to 8 years depending on the conditions and frequency of its use.



**After repeated operations of transport, assembly, disassembly, improper and long-term use it is not possible to exclude that any damages, faults, wear and tear problems might occur. These problems may cause safety risks if not recognized and solved in time!**

Therefore it is necessary both for the owner and the user to follow the safety norms for medical devices with the implementation of regular inspections to verify the correct functioning of the bed.

**Inform the user that it is mandatory to carry out these controls.**

## 6.1 By the user

In addition to regular checks by the specialized staff, even the normal users (such as nurses, assistants, etc.) must perform both a visual and a functional inspection before each new use at regular intervals.

Recommendation: check all mechanical and electrical components once a month. In addition check the power cord and the hand control cable after each mechanical stress and after each change of position.

See the checklist below.

### Checklist for the user

Control		ok	not ok	Problem description
<b>Visual inspection of electrical components</b>				
Hand control cable	Possible damages, cable connection			
Power cord	Possible damages, cable connection			
Hand control	Possible damages			
<b>Visual inspection of mechanical components</b>				
Lifting pole and its housings	Possible damages, deformations			
Bed frame	Possible damages, deformations			
Metal mattress platform	Possible damages, chips			
Wooden head and foot panels	Possible damages, wooden chips			
Mattress base	Possible damages, deformations			
Metal bed rail bars	Possible damages, chips			
<b>Functional control of electrical components</b>				
Hand control	Test to check if it works properly			
<b>Functional control of mechanical components</b>				
Casters	Test the brakes, moving forwards			
Emergency descent of the backrest	Test according to the instructions			
Bed rails	Locking and unlocking mechanisms			
Knee raiser	Mechanism and attachment			

Accessories	Fixing, possible damages			
Inspector's signature:	Control result:			Date:



- If you think that there might be damage or a functional problem, the bed must not be used at all and it must be disconnected from the power supply until the damaged components have been totally replaced or repaired!
- To replace or repair damaged parts, please contact the owner of the bed.

## 6.2 By the owner

The owner of this nursing bed is required to carry out regular tests in case of any new installation, any maintenance service and during the normal use operations to ensure the safety of this bed.

These tests must be verified during the regular maintenance services depending on use conditions.

1. The functional tests, the evaluations, the documentation of the inspection results must be carried out only by experienced personnel who know the proper way and conditions necessary to implement a correct testing.
2. The evaluation and the documentation of the results can be performed only by skilled electricians with additional medical and technical knowledge.
3. The controls must be carried out according to the sequence below:
  1. Visual inspections
  2. Electrical measurements
  3. Functional tests

### Frequency of the inspections

As a benchmark, we recommend an examination every six months can be extended in accordance with the terms of use on its own responsibility respecting a share of proven error of 2% to a maximum of two years.



- If you think that there might be a damage or a functional problem, the bed must not be used at all and it must be immediately disconnected from the power supply until the damaged components have been totally replaced or repaired!

The pages below can be used as an inspection protocol.

Sheet 1 of 2

<b>Client/ Medical Centre/ Surgery:</b>				
<b>Address:</b>				
<b>Task carried out:</b> <input type="checkbox"/> Testing of the bed <input type="checkbox"/> Testing before the first use of the bed				
<input type="checkbox"/> _____ <input type="checkbox"/> Testing after repair / maintenance				
<b>Device type:</b> <input type="checkbox"/> Nursing Bed		<b>Protection class:</b> <input type="checkbox"/> I		
<b>Bed type:</b>		<b>Inventory number:</b>		
<b>Place:</b>		<b>Serial number:</b>		
<b>Manufacturer:</b> <i>Apollo Healthcare Technologies Ltd.</i>		<b>Parts used:</b> <i>none</i>		
<b>Equipment used (Type/ number of inventory):</b> 1.				
<b>Classification according MPG:</b> <i>class I</i>		2.		
<b>I. Visual inspection</b>		<b>ok</b>	<b>not ok</b>	<b>Problem description</b>
<b>Visual inspection of electrical components</b>				
Identification labels and stickers	In place and clearly readable			
Housing of the control device	Properly positioned, damages			
Housing and lifting tubes of the motors	Properly positioned, damages			
Hand control	Damages			
Power cable of the motors, hand control cable	Properly positioned, damages			
Connector and clamp of the controller	Properly positioned			
<b>Visual inspection of mechanical components</b>				
Identification labels and stickers	In place and clearly readable			
Lifting Pole	Damages, deformations			
Bed frame	Damages, deformations			
Metal mattress platform	Damages, chips			
Wheels	Damages			
Mattress base	Damages, deformations			
Wooden panels	Damages, wooden chips			
Welding	Welding problems			
Bed rail bars	Damages, chips			

Knobs	Correct fixing			
Worn out parts, such as the hinged points	Damages			
<b>II. Electrical measurement in accordance with VDE 0751-1:2001-10 (power from the device, direct )</b>				
Proceed as follows:		ok	not ok	Problem description
1. Insert the power cord of the bed into the testing outlet of the measuring device.				
2. Connect the probe of the measuring device to a free conductor element of the frame (such as a screw or similar).				
3. Activate the motors with the hand control for the duration of the measurements				
4. Start the measurement procedure with the appropriate device.				
	<b>Limit Value</b>	<b>Value of the first measurement</b>	<b>Current actual value</b>	
Result: bed SK II (type B)	0,1 ma	ma	ma	

## Protocol system for testing electrical medical devices Sheet 2 to 2

<b>III. Functional control</b>		ok	not ok	Problem description
<b>Functional control of electrical components</b>				
End stroke of the motors	Automatic disconnection			
Controller and motors	Unusual noises			
Controller and motors	Test according to use instructions			
Strain relief cord	Connecting cable properly fixed			
<b>Functional control of the mechanical components</b>				
Hinged and pivot points	Working smoothly			
casters	Brakes, moving forwards			
Bed rails	Locking and unlocking mechanisms			
Knee raiser	Hinge point			
Accessories (ex. Trapeze bar, handle)	Mounting, damages, suitability			
<b>Inspection result:</b>				
<b>All values within the allowed range:</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> yes <input type="checkbox"/> no		<b>Next inspection date:</b>		



<b>The test was passed:</b> <input type="checkbox"/>		<input type="checkbox"/> yes <input type="checkbox"/> no
<b>If the test was not passed:</b> <input type="checkbox"/>		
<input type="checkbox"/> defective, do not use the bed! => Maintenance <input type="checkbox"/> defective, do not use the bed!! => Elimination <input type="checkbox"/> The bed does not meet the safety requirements		
<b>Mark test applied:</b>		<input type="checkbox"/> yes <input type="checkbox"/> no
<b>This inspection protocol included:</b>		
<b>Notes:</b>		
<b>Tested on:</b>	<b>Examiner:</b>	<b>Signature:</b>
<b>Evaluated on:</b>	<b>Owner/staff:</b>	<b>Signature:</b>

### 6.3 Spare parts

Replacement parts are available From Apollo Healthcare Technologies Ltd. by indicating the item number, order number and serial number. The necessary information can be obtained from the identification label placed on the bed.

Model	Bed model
Type	Article number
Series	Serial number

## 6.4 Manufacturer's address

To obtain a proper functioning and warranty replacements it is necessary to use only original spare parts Apollo Healthcare Technologies Ltd!

To order spare parts, for any requests or assistance and for further information please contact:

Apollo Healthcare Technologies Ltd  
Unit A1 Gildersome Spur  
Leeds  
West Yorkshire  
LS27 7JZ  
**Tel: 01924 614567 Fax: 01924 607480**  
**Email: [info@apollo-ht.co.uk](mailto:info@apollo-ht.co.uk)**

## 6.5 Electrical components replacement



**Dangerous for your life, life threat, due to electric shock!**

- Before starting any operations remove the plug from the wall outlet!
- Any electrical equipment operations must be carried out only by qualified service and repair staff members, by the producer or by qualified and licensed electricians, in accordance with VDE and relevant safety standards!



- Disassemble the operating system only in the horizontal position to avoid the danger of being crushed by any elements falling from the mattress base. The drive components are maintenance free and cannot be opened. In case of malfunction, the component in question must be completely replaced!

## 7. ELIMINATING DEFECTS

Should any anomalies occur during use, it is necessary to contact the owner's qualified personnel trained for the maintenance and repair of the bed.

The user shall in no case try to eliminate any malfunctions that might occur in the electrical equipment!



**Dangerous for your life, life threat, due to electric shock!**

**Any interventions to the electrical equipment must be carried out only by qualified service and repair staff members, by the producer or by qualified and licensed electricians, in accordance with VDE and relevant safety standards!**

### Possible solutions

The following table is useful to eliminate possible problems and faults:

Problem	Possible causes	Solution
The hand control and / or the operating system does not work	<ul style="list-style-type: none"> <li>• Power cord not connected</li> <li>• Plug not under voltage</li> <li>• Hand control plug not properly connected</li> <li>• Faulty parts</li> </ul>	<ul style="list-style-type: none"> <li>• Insert the power cord</li> <li>• Check the socket / the fuse box</li> <li>• Check all connections</li> <li>• Inform the owner and ask for repairs</li> </ul>
Pressing the keys, the movements are activated only for a short time	<ul style="list-style-type: none"> <li>• Too much weight on the bed</li> <li>• The bed hits against an obstacle</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce the load</li> <li>• Remove the obstacle</li> </ul>
Movement in one direction only	<ul style="list-style-type: none"> <li>• Defective hand control or operating console</li> </ul>	<ul style="list-style-type: none"> <li>• Inform the owner and ask for repairs</li> </ul>
Function in contrast with the instruction on the hand control	<ul style="list-style-type: none"> <li>• Reversed motor connectors</li> </ul>	<ul style="list-style-type: none"> <li>• Inform the Manufacture and ask for repairs</li> </ul>
The movements stop immediately after a longer adjustment time	<ul style="list-style-type: none"> <li>• Activation of the circuit breaker in the transformer</li> </ul>	<ul style="list-style-type: none"> <li>• Put in a rest position and let the system cool down for about 20 to 30 minutes</li> </ul>
The bed will not fold up	<ul style="list-style-type: none"> <li>• Backrest locking clip is not in place</li> </ul>	<ul style="list-style-type: none"> <li>• Lower backrest and swing the locking clip into place</li> </ul>
The bed is folding up unwanted	<ul style="list-style-type: none"> <li>• Backrest locking clip is in place</li> </ul>	<ul style="list-style-type: none"> <li>• Swing backrest locking clip into the open position</li> </ul>

## 8. TECHNICAL DATA

### 8.1 Size and weight

#### Bed fitted with rails:

	<b>Apollo – Folding Bed</b>
Mattress base	120 x 215 cm
Overall dimensions	136 x 229 cm
Weight capacity	350 kg

### 8.2 Electrical data

#### Operating device (Main Control Unit):

Type	Linak C40 Series Control Unit
Input voltage	AC 230 V, ± 10 %, 50 Hz
Classification	Class I

#### Hand control:

Type	Linak
------	-------

#### Electric motors for height adjustment of the mattress base and backrest and footrest:

Type	Linak LA27 Series Linear Actuators
Minimum / Average speed at full load (mm/s)	4.5 / 5.5

### 8.3 Environmental conditions

**Noise during adjustments:** max. 48 dB(A)

The following environmental conditions must be respected:

#### Storage:

	Minimum	Maximum
Storage temperature:	+ 5° C	+ 50° C
Relative humidity:	50 %	70 %

#### Functioning:

	Minimum	Maximum
Environmental temperature :	+ 10° C	+ 40° C
Relative humidity:	20 %	90 % (without condensation)
Air pressure:	700 hPa	1060 hPa

## 8.4 Norms and applied guidelines

- Directive CE 93/ 42 Medical Devices Directive
- VDE 0751-1:2001-10 Safety verification for electrical devices
- EN 12182:1999-11 Technical aids for disabled persons
- DIN 32977-1:1992-07 Appropriate design for disabled persons
- EN 14971: 2001 Application of risk management to medical devices
- DIN EN 1970 : 2005-10 Adjustable beds for disabled persons
- EN 60601-1: 1996-03 Safety of electrical medical equipment
- EN 60601-1-2:2002-10 Electromagnetic compatibility
- DIN EN 60601-2-38/A1: 2001 Nursing beds electrically controlled (if required for home care)
- Classification as class I medical product (according to MPG § 13)

## 9. WARRANTY

The beds have a 2 year warranty period for any production faults from their purchase date. Keep the purchase receipt. In particular, the guarantee of the beds will NOT cover:

- Damages due to improper use by the user;
- Damaged or ruined parts due to wear and tear or due to excessive exposure to sunlight;
- Damages caused by loss or spillage of liquids;
- Damages from collisions or impacts against walls, furniture etc.;
- Tears and accidental damages, cigarette or open flames burns etc.

### Warranty Terms

- The warranty is not transferable;
- Repairs must be carried out by an authorized dealer. Any repairs or alterations made by someone other than the dealer will void the warranty;
- The warranty of any replaced components will have the same expiry date of the original warranty;

The warranty will be void in the following cases:

- Damages caused by lack of maintenance;
- Damages caused by incorrect maintenance;
- Modifications or repairs carried out by someone other than the dealer;
- Modifications or repairs with parts not original.

If the device has problems, please contact your local authorized dealer and give all the information necessary to identify the defect and the type of repair. The manufacturer reserves the right to change weights, measures or other technical data contained in this manual without notice. The information contained in this manual is approximate.



# 10. DECLARATION OF CONFORMITY

The Company

**Apollo Healthcare Technologies Ltd  
Unit A1 Gildersome Spur  
Leeds  
LS27 7JZ**

Declares that

The articles which it sells, called ..... and related accessories, are classified as Class I non-invasive Medical Devices according to Medical Directive 93/42/EEC and to national law no. 46/97 and comply with the European Directive on CE marking; in addition

- they are not measuring instruments;
- they are not intended for clinical investigations;
- they are sold in non-sterile packaging;

**The above mentioned devices meet with the essential requirements and provisions of Directive 93/42/EEC.**



**Apollo Healthcare Technologies Limited**

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25-564 Kielce, Poland  
Tel/Fax: +48 507 833 787  
Email: ar@pamed-consulting.eu



Management System  
EN ISO 13485:2016  
www.tuv.com  
ID: 900013801



Due to ongoing research and development, Apollo Healthcare Technologies Ltd, reserve the right to change specifications without prior notice. This will not affect the efficacy of the system. Always consult the user manual for instructions for use