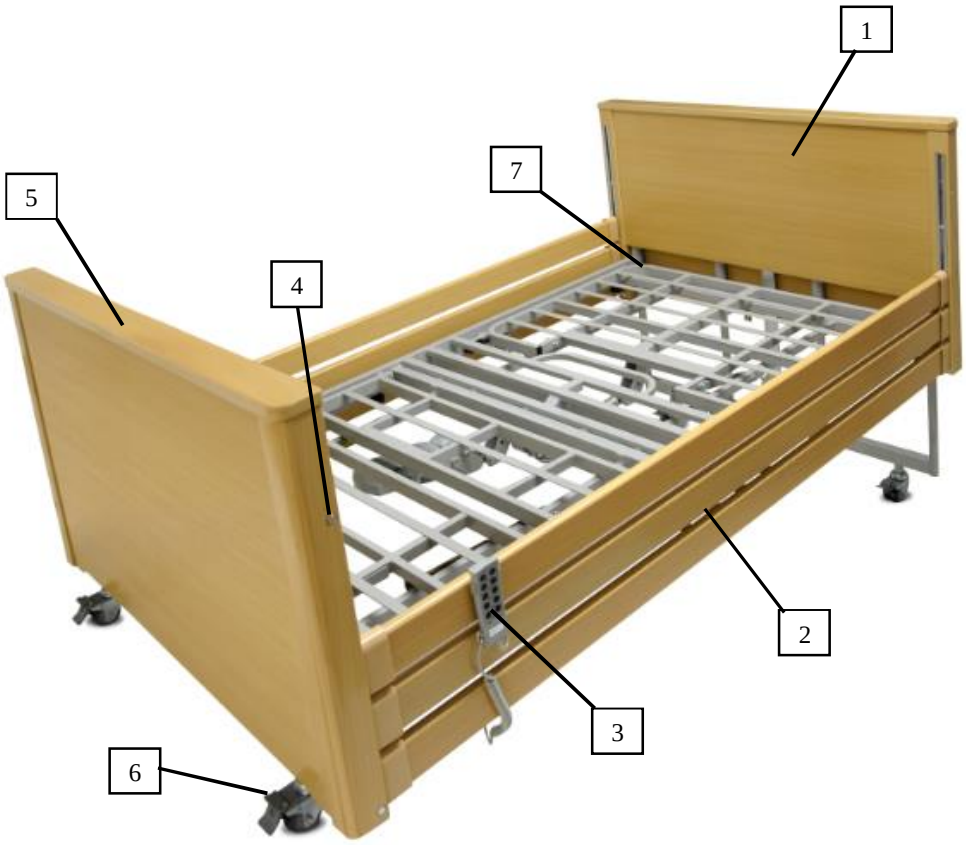
Electric Bed
Apollo Bariatric Professional APH188



USER'S MANUAL

CE 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- BED RAILS (3 Bar)

3- HANDCONTROL

4- BED RAILS BUTTON

5- FOOT PANEL

6- WHEELS WITH BRAKE

7- HOUSING FOR LIFTING POLE (ON BOTH SIDES)

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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 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.

In the hope that for you and for the users of this nursing bed to succeed, we are confident that our product will greatly contribute to achieving this goal.

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 27 to 68 cm.
- Electric backrest (with Auto-Regression) section adjustment from 0° to 72°.
- Electric leg section adjustment from 0° to 33°.
- Electric leg section adjustment from 0° to 20°.
- Four swivel wheels, individually lockable.
- Hospital surface 198 x 120 cm.
- Integrally extendable to 213 x 120cm.
- Overall dimensions about 218 x 136cm.
- Drop down 3 bar bed rails on both sides.

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 bed rails are made of aluminium, coated to mimic the appearance of wood.

The surfaces are not harmful in contact with the skin.

2.3.4 Frame

- The bed is supplied disassembled to be easily transported into the house. It is made up of two wooden panels (head panel and foot panel), a mattress base with a motor, a pantograph mechanism with an electric actuator, six bed rail bars and one trapeze bar (accessory not included with the bed). The bed has four swivel wheels, all with a parking brake.

- **Mattress base**

The mattress base is divided into a backrest with auto-regression, a fixed central element, a leg support and a knee raiser with ratchet. 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. The mattress base can be extended by 15cm simply by moving the foot panel outwards and the integral mattress support.

- **Bed Rails**

To protect patients from possible accidental falls from the bed, the bed is equipped with rails (meet clause 201.9.8.3.3.3 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 pressing the button on the side.

- **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.
- 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 disassembled.
- The bed is assembled on location by the retailer's personnel.
- The installation must be carried out by a minimum of two persons.

Packaging units:

Carton 1: Back rest section of mattress platform complete with actuator, side rail end caps, mattress retainers and mattress platform connecting bars.

Carton 2: Leg rest section of mattress platform complete with actuator, main electrical control unit and hand control unit.

Carton 3: Headboard Bed end (shorter connecting bars) with a Hi-Lo actuator.

Carton 4: Footboard Bed end (longer connecting bars for extending purposes) with a Hi-Lo actuator.

Carton 5: Six wood effect aluminium bars to form the bed side rails.

3.1 Assembly

Mounting instructions:

- The assembly of the bed must be carried out by a minimum of two persons;





Unscrew the 8 hand screws on both the head and foot halves of the frame. Use the bars provided to connect the two halves of the frame together, ensuring the end of each bar with the blue dot is inserted first into the fame with the matching blue dots. Also note the location holes for the hand screws need to be on the bottom of the connecter bars as shown in the photo above right. Once the two halves of the frame are fully pushed together, hand tighten all the hand screws.



Unscrew the 4 hand screws on both ends of the frame and swing the headboard / footboard connecting bars outwards 90 degrees to align with the main bed frame. The footboard is provided with longer connecting bars in order to enable the bed to be extended. Fully insert the bars into the frame and hand tighten all the hand screws.



To extend the bed untighten the 2 hand screws on the foot of the bed frame and pull out the footboard until it clicks. Then retighten the hand screws.

Then pull out the black pin (shown in photo to the left) on both sides at the foot end of the bed in order to release the integral extending mattress platform and extend until the black pins click back in.







All the actuators on the bed are colour coded.

The back rest actuator has red stickers that should be matched up with the corresponding red stickers on the mounting points on the underside of the bed frame.

Equally, the green stickers on the foot rest actuator should be matched up with the green stickers on the mounting points.

The main control box comes already attached to the back rest actuator with all the cables colour coded. Ensure the correct connector is attached to the matching actuator. The Hi-Lo actuators on the head and foot boards should be connected using the yellow stickered connectors.



Pay attention to position the back and foot rest actuators correctly! They should never be inverted.



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.

3.2 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.
- 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 etc…), make sure they are correctly fixed and that they work properly. In particular, make sure all different cables are safely connected. 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 eg. 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

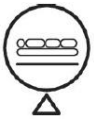
The electric functions of the bed are activated by the patient and by the user with a hand control.

- 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
Press this button to change the angle of the backrest.



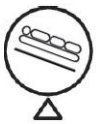
Height adjustment of the mattress base
Press this button to change the height of the mattress base. When the height is adjusted there is an automatic horizontal positioning of the mattress base in the highest and/or lower position.



Leg support adjustment
Press this button to change the angle of the leg support.



Backrest and leg support combined adjustment (Auto-Contour)
Press this button to change the angle of the backrest and the angle of the leg support simultaneously.



Angle adjustment of feet – head section (Trendelenburg Tilt)
Press this button 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 the 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.

4.3 Swivel wheels

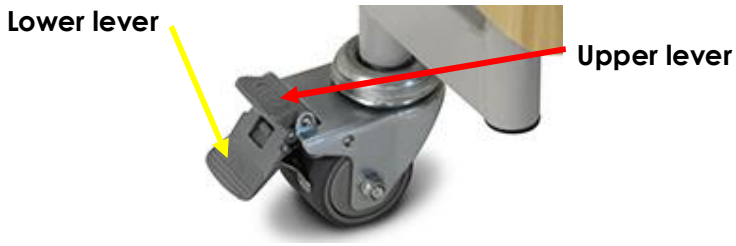
The nursing bed has four swivelling double castors which can be blocked individually.



- **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 lock the brake: Press the lower lever down with your foot until the upper lever snaps up.

How to unlock the brake: Press the upper lever with your foot until the lower lever clicks.



4.4 Lifting Pole

In both corners of the mattress base, towards the head panel, there is a round insert with a cavity into which the lifting pole must be placed. The lifting pole must be inserted in the side from where the patient gets in or out of the bed to help him/her out. Only use the manufacturers lifting pole design for this bed and for specific Bariatric use.

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 rails





Fitting

- The easiest way is to raise the bed to its highest position.
- Insert each bed rail into the end caps provided and insert the end cap guides into the runners on the head and foot board.
- Make sure to lift one rail at a time ensuring both ends are level before moving on to the next rail.
- You may have to press in the bottom button in order to fit the bottom bed rail.
- Once all rails have been fitted and are above the bottom button lift up the top bed rail until it automatically fits into the highest position on both ends above the top button. You should not be able to move the top rail upwards or downwards.
- Check that the other bed rails are properly inserted by pressing from the top of each bed rail. You should not be able to move them downwards.

Lowering

- Lift the top bed rail slightly.
- Press the upper button and lower bed rail slowly to its lower position.



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 bed rails and in good conditions positioned at the right distance to allow the rails to snap into place properly.**
- **Make sure to use only the Apollo original bed rails supplied with the bed.**
- **When using a bed with 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' body build. If they are very skinny and thin it could be necessary to use some padding or pads around the bed rails (optional). Only in this way will it be safe to use the bed without the risk of the patient to be caught or to slide out of the bed rails.**
- **The mechanical elements which attach the bed and the 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).**

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
Visual inspection of electrical components				
Hand control cable	Possible damages, cable connection			
Power cord	Possible damages, cable connection			
Hand control	Possible damages			
Visual inspection of mechanical components				
Lifting pole and its housings	Possible damages, deformations			
Bed frame	Possible damages, deformations			
Wooden slats	Possible damages, wooden chips			
Wooden head and foot panels	Possible damages, wooden chips			
Mattress base	Possible damages, deformations			
Wood effect bed rail bars	Possible damages, wooden chips			
Functional control of electrical components				
Hand control	Test to check if it works properly			
Functional control of mechanical components				
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.

- 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.
- The evaluation and the documentation of the results can be performed only by skilled electricians with additional medical and technical knowledge.
- 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

Client/ Medical Centre/ Surgery:				
Address:				
Task carried out: □ Testing of the bed		□ Testing before the first use of the bed		
□ _____		□ Testing after repair / maintenance		
Device type: □ Nursing Bed		**Protection class:** □ I		
Bed type:		**Inventory number:**		
Place:		**Serial number:**		
Manufacturer: *Apollo Healthcare Technologies Ltd.*		**Parts used:** *none*		
Equipment used (Type/ number of inventory): 1.				
Classification according MPG: *class I*		2.		
I. Visual inspection		**ok**	**not ok**	**Problem description**
Visual inspection of electrical components				
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			
Visual inspection of mechanical components				
Identification labels and stickers	In place and clearly readable			
Lifting Pole	Damages, deformations			
Bed frame	Damages, deformations			
Wooden slats	Damages, wooden chips			
Wheels	Damages			
Mattress base	Damages, deformations			
Wooden panels	Damages, wooden chips			
Welding	Welding problems			
Bed rail bars	Damages, wooden chips			

Knobs	Correct fixing					
Worn out parts, such as the hinged points	Damages					
II. Electrical measurement in accordance with VDE 0751-1:2001-10 (power from the device, direct)						
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.						
	Limit Value	**Value of the first measure ment**	**Current actual value**			
Result: bed SK II (type B)	0,1 ma	ma	ma			

Protocol system for testing electrical medical devices
Sheet 2 to 2

III. Functional control		**ok**	**not ok**	**Problem description**
Functional control of electrical components				
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			
Functional control of the mechanical components				
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			
Inspection result:				
All values within the allowed range: □ □ □ yes □ no		**Next inspection date:**		

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

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
Holme Street
Liversedge
West Yorkshire
WF15 6JF
Tel: 01924 614567 Fax: 01924 607480
Email: 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 can not 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	• Power cord not connected • Plug not under voltage • Hand control plug not properly connected • Faulty parts	• Insert the power cord • Check the socket / the fuse box • Check all connections • Inform the owner and ask for repairs
Pressing the keys, the movements are activated only for a short time	• Too much weight on the bed • The bed hits against an obstacle	• Reduce the load • Remove the obstacle
Movement in one direction only	• Defective hand control or operating console	• Inform the owner and ask for repairs
Function in contrast with the instruction on the hand control	• Reversed motor connectors	• Inform the Manufacture and ask for repairs
The movements stop immediately after a longer adjustment time	• Activation of the circuit breaker in the transformer	• Put in a rest position and let the system cool down for about 20 to 30 minutes

8. TECHNICAL DATA

8.1 Size and weight

Bed fitted with rails:

	Apollo – Bariatric Pro
Mattress base	120 x 198 cm (216cm)
Overall dimensions	136 x 218 cm
Weight capacity	318 kg

8.2 Electrical data

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

Type	Ti-Motion TC1 Series Control Unit
Input voltage	AC 230 V, ± 10 %, 50 Hz
Classification	Class I

Hand control:

Type	Ti-Motion

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

Type	Ti-Motion TA7 Series Linear Actuators
Max speed at no load / full load (mm/s)	38 / 23.2

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 5 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
Holme Street
Liversedge
WF15 6JF

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.

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CE