

ProAxis^{plus}

Instruction for use and trouble shooting guide



ProAxis^{plus}™ Electric Profiling Bed and Pressure Area Care System

Instruction for use and trouble shooting guide

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Nightingale Care Beds Ltd declares that the ProAxis^{plus}™ Electric Profiling Bed and Pressure Area Care System have been designed and manufactured to meet the following standards:

CE for Medical Device Directive (93/42/CEE Class 1 medical device)
BS EN ISO 60601-1
BS EN ISO 60601-1-2
BS EN ISO 60601-1-4
BS EN 60601-2-38

All relevant criteria of the above standards are met with the exception that all systems are manufactured extended as standard as we consider pull out extensions unsuitable with mattress use.

ProAxis^{plus}™ Electric Profiling Bed and Pressure Area Care System are intended for use by adults from 70 kgs.

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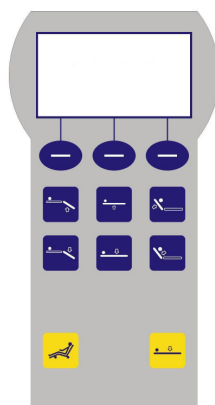
1.1 ProAxis^{plus}™ Electric Profiling Bed & Pressure Area Care System



The ProAxis^{plus}™ Electric Profiling Bed is a three sectional, electrically operated pressure area care system that profiles to the contours of the human body by incorporating an automatic knee break whilst dropping the sacral area.

This unique profiling movement alleviates three extrinsic factors, pressure, shear and friction, which are considered the main contributing factors to pressure ulcer development.

A specially developed Smart Control (optional) plugs into the bed and can be programmed to automatically adjust the mattress angles and thus provide additional pressure area care for patients at high risk of pressure ulcer development.



Smart Control/Weight Indicator (optional)

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1.2 Achievable Positions

ProAxis^{plus}™ can achieve many positions by easy operation of a simple handset. Every function is motorised for minimising the physical effort required by nursing staff. The following positions are some examples;



Chair Position



Flat



Trendelenburg



Reverse Trendelenburg

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1.3 The Mattress

The mattress is especially manufactured for the ProAxis^{plus}™ and is a temperature sensitive, anti-bacterial, Visco-Elastic type that easily and quickly conforms to the patient's body shape.

Having a gel-like feel and the ability to adjust and distribute load as evenly as possible, it simulates a floatation effect whilst maximising the comfort level and so facilitating better blood circulation.

It is capable of accommodating patients that are medium to high risk of developing pressure ulcers and so when combined with the unique profiling action of the ProAxis^{plus}™ Care bed, is suitable for very high risk patients.

The Visco material is breathable and non-irritating, and helps to dissipate moisture and perspiration away from the body.

It is common for modern mattresses to have anti-bacterial covers, but the Nightingale mattress now achieves the same standard internally.

The Visco-Elastic material is temperature sensitive memory foam that consistently conforms to the patient's body shape. The Visco-Elastic is "fast acting" and allows for easier and faster re-adjustment as their position alters. The surface contact is increased between the patient and mattress.

Shearing forces are minimised due to the contouring properties of the Visco-Elastic. The contouring properties not only provide better pressure area care, but also maximise patient comfort. Skin condition is improved as the Visco-Elastic aids the dissipation of moisture.

IMPORTANT INFORMATION

The mattress provided with the ProAxis^{plus} is unique to the system. It is both wider and longer than other beds available, therefore no other mattress should be used on the ProAxis^{plus}.

The mattress does NOT require turning and it is imperative that the mattress is positioned with the information label facing UP and positioned at the FOOT end of the bed.

2.1 Operations and Safety

Installation

Please comply with the following installation instructions to ensure maximum benefit for the patient and nurse.

- Ensure that the system has sufficient space for the complete range of operation and movement that is required.
- Connect the power supply to the available power point on the wall and ensure that the cable is clear from any risk of entrapment and possible damage or obstruction.
- When positioned as required, the brake pedal should be pressed down into the lock position before any attempt is made to place a patient onto ProAxis^{plus}.
- Before placing the patient onto ProAxis^{plus}, the mattress platform should be profiled slightly to enable the nurse to see exactly where the dropping hinge is and so be able to position the patient correctly above it. Ensure the mattress provided with ProAxis^{plus} is used.
- It is advisable to leave the linen bottom sheet loose, as this will then allow it to conform to the patient's body and to the angle changes of the mattress platform.
- Only one or two pillows should be used. The backrest should be raised by use of the handset and the patient should not be sat up by way of propping them up with pillows as seen on older beds.
- If the patient requires the provision of additional pressure area care then the Smart Control (optional) should be used [see Smart Control Operating Instructions] and not an A/P mattress.

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2.2 Safety Precautions

Before using any electrically operated system for the nursing and care of patients, a full risk assessment should be carried out and completed. The information gained from this should then be used to control the details of the care and equipment provided.

The safety sides provided meet with the required standards and are designed to minimise the chance of entrapment. However, care should be taken when assessing the patient, as there is often an element of risk when using safety sides.

Although a lifting pole should not be required as the ProAxis^{plus}™ profile will prevent the patient from slipping down the platform by way of the unique profiling action, in the remote case of one being required it will need to be of a free standing type.

Before the trendelenburg tilt facility is used, care should be taken to ensure that there are no obstacles above or beneath the system that may come into contact with the system as the angle changes. Care should also be taken to make sure there is sufficient clearance between the frame and the wall.

Care should be taken when the system is being moved and the power supply cable must be unplugged and stored with the system whilst in transit. Battery back up is available for operation whilst mains power is not available.

If the batteries are allowed to discharge to within 50% of their capacity the system will shut down to prevent permanent damage. The system can be reactivated by connecting the power cable. Depending on the charge left in the system will depend on when the system will function again. Typical time is 30 minutes from flat.

The transformer unit is unique to the ProAxis^{plus} system, it operates at 36v therefore it must **NOT** be used with any other equipment, as damage may occur.

If for any reason the system is unused or stored, the system should be shut down. This is achieved by pressing the **Bed Up** and **Bed Down** keys at the same time for 10 seconds, ensuring the transformer is not plugged in. Please ensure the wall-mounted transformer is stored with the bed at all times. To reactivate the system, simply plug in the transformer. If the system is completely flat, it will take around an hour to recharge until operational.

The system is not to be used near flammable anaesthetics.

ProAxis^{plus}™ Electric Profiling Bed is designed for persons over 127 kgs.

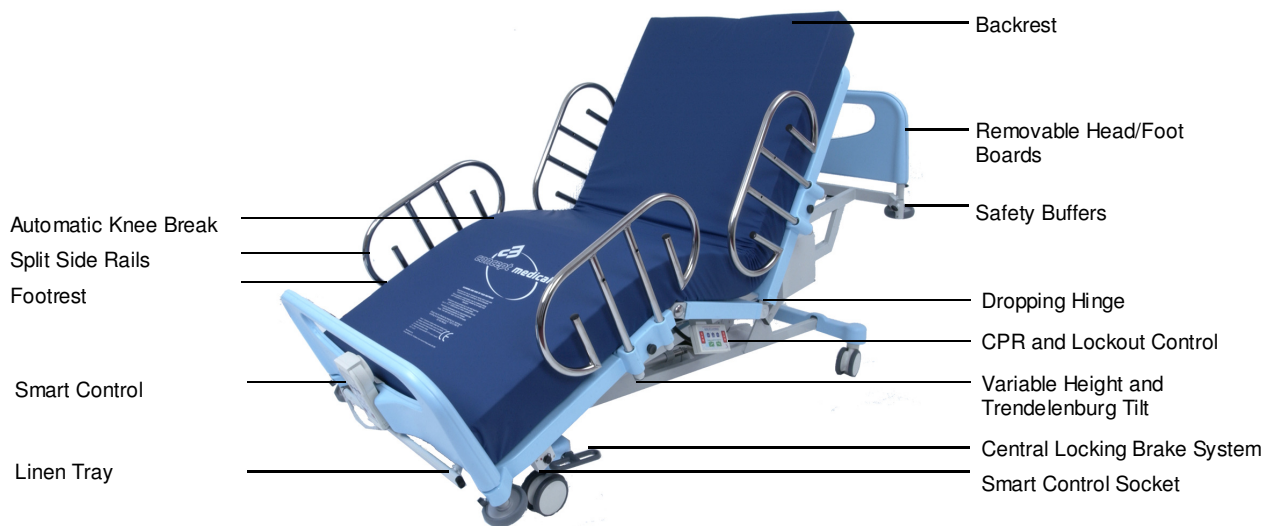
The mattress support system has been designed and tested for use with a maximum patient weight of 318kg [700lbs/50 stone]; The safe working load is 353kg.

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Operating Instructions in Diagrammatic Format

2.3 Main Features

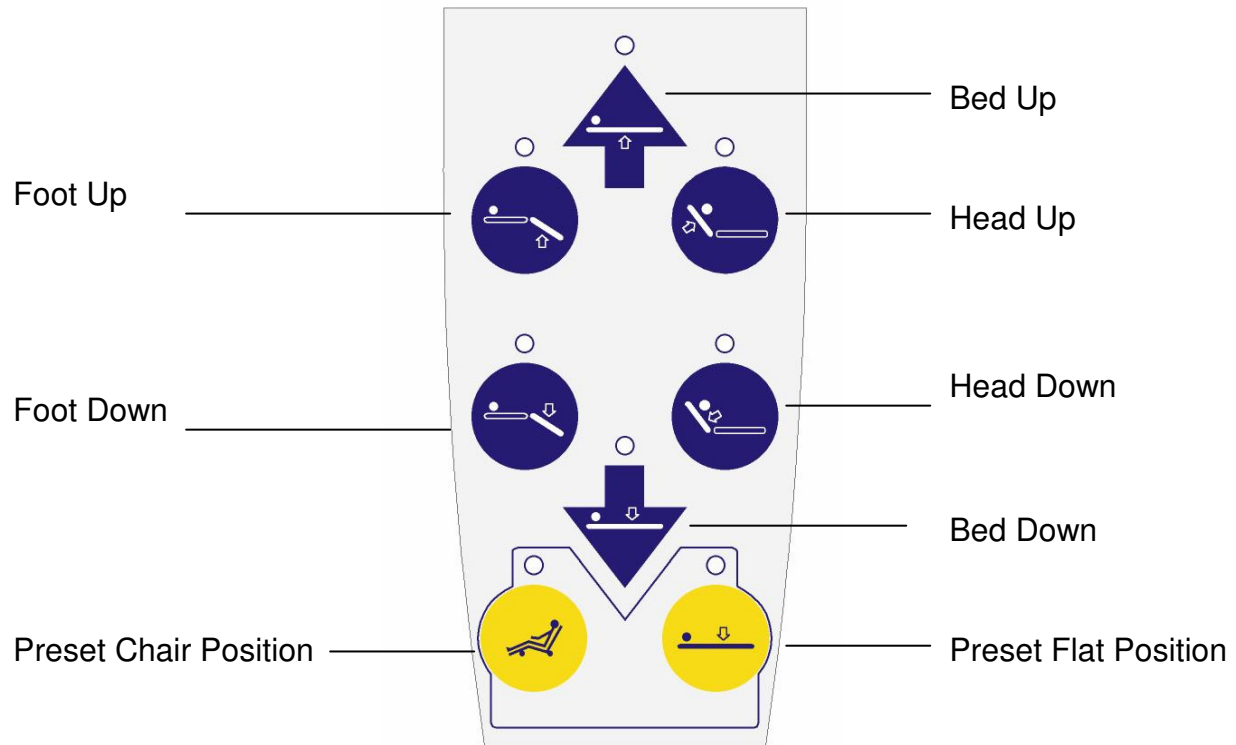


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2.4 Patient / Nurse Handset

The patient / nurse handset is permanently attached to the bed and is a simple control to operate the basic functions.



Variable Height, Backrest and Footrest Buttons

Variable Height - The height of the platform can be raised or lowered by using the handset control buttons that are shaped as arrows and marked **Bed Up** and **Bed Down**.

Backrest - To raise or lower the backrest of the platform the buttons marked **Head Up** and **Head Down** should be used.

Footrest - To raise or lower the footrest the buttons marked **Foot Up** and **Foot Down** should be used.

Preset Buttons

There are two preset positions available and are achieved by pressing the relevant buttons on the handset control. The buttons have to be pressed continuously for position to be achieved, only one button can be pressed at a time.

Chair Preset Position - To achieve a chair position with the platform profiled to the sitting position and the frame tilted down at the footend, the button marked **Chair** should be pressed.

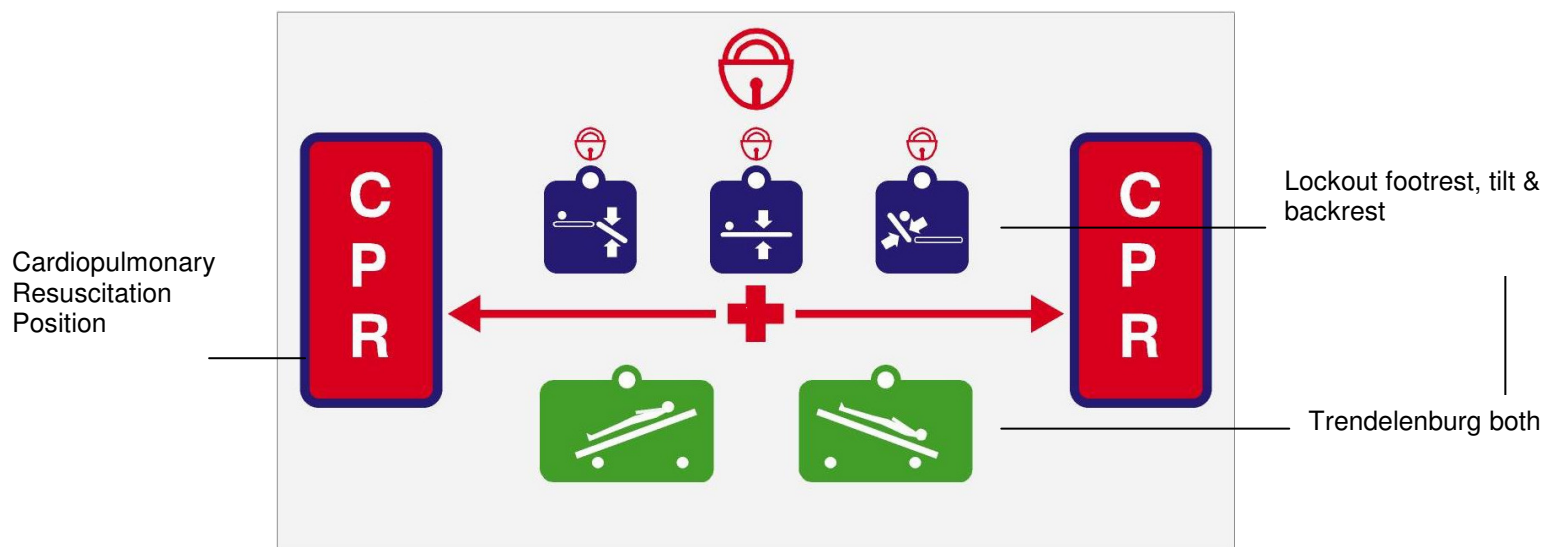
Flat Preset Position – To make the bed go flat, press the **Flat** button.

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2.5 Lock Out Control

There is a Lockout control on both sides of the bed for easy access. The buttons are colour coded for quick identification, with lights to depict mode.



CPR - The CPR operation is automatic. Press both CPR buttons simultaneously or within 3 seconds. It is important to check for obstructions under or around the bed, as once the CPR mode is activated the bed quickly profiles to a flat position 600mm from the floor.

CPR can be stopped anytime after two seconds into the movement by pressing ONE of the red CPR buttons once.

Tilt - The system can be tilted by pressing one of the two green buttons on the lockout box, marked **Tilt**. 12.5 degree tilt is available both ways. To level the bed press the opposite button until the bed stops and the green LEDS flash, at that point release the button and the bed will be level.

Lockout Buttons - The movements that can be locked out are Backrest, Footrest, Tilt and Height, and Preset positions. When locked out by the nurse a red light will show on the lockout button that is chosen. If a hand pendant button is pressed whilst locked out the Green LED on the pendant will flash, also the lockout red LED will flash. Press the relevant lockout button to restore function, the red LED will extinguish.

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2.6 Operating Instructions

Before using ProAxis^{plus}, ensure the Operations and Safety Installation section has been followed. Important: ProAxis^{plus} should be plugged into the mains at all times, the battery backups are for emergencies only.

Positioning the Patient

Use the patient / nurse handset to slightly profile the bed to identify the dropping hinge section. Ensure the sacrum area is above the hinge between the back-rest and thigh section of the platform.

This will ensure that when the backrest is raised, the hinge drops, the automatic knee-break is operated, and the patient does not slip down the mattress.

In normal circumstances, it will be necessary to use no more than two pillows. If the patient requires sitting up the backrest should be raised and the use of pillows for “propping” the patient up should be avoided.

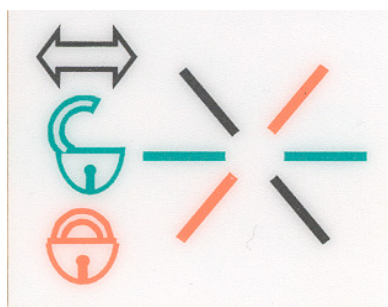
Safety Sides & Headboards

The system will normally be supplied with safety sides fitted and positioned either side of the mattress platform. These are adjusted by pushing in the black button on the side rail bracket. Lift or drop until they click into position. The safety sides should only be used after full assessment of the patient has been completed, as their use may not be suitable in all cases.

It is essential that the head and footboards are fitted when the system is to be tilted.

Braking System

The brakes have directional steer and 4 way locking.



Directional

No Lock

4 Way Lock

The braking system is operated by pedals located at the foot end of the bed. When the pedal is horizontal the brakes are off. With the pedal depressed towards the foot end the brakes are locked on. With the pedal depressed towards the head end the steering lock is activated to assist in moving the bed.

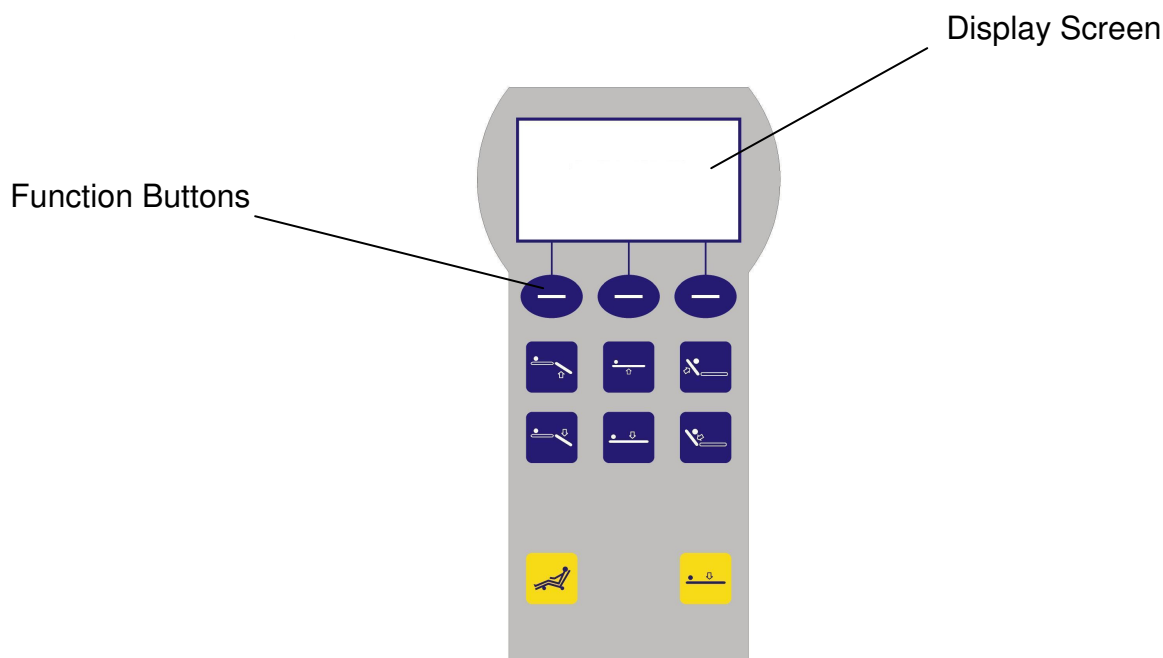
For pressure relief, use the Smart Control (optional. See Smart Control Operating Instructions for instructions of use.

3 Programmable Smart Control (optional)

Pressure area care for the bariatric patient will cause issues due to many factors, the “SMART” system has been developed to address most of these.

On the principal that pressure cannot be totally removed, only “redistributed” the Smart system achieves this by automatically profiling the sleep surface, and thus move the pressure points.

Due to the unique ProAxis Plus dropping hinge there is no fixed point on the mattress platform, this means that when the head section moves the thigh and foot sections move also. Combining this movement with the proven capabilities of the Visco-Elastic mattress gives the opportunity to offer a high degree of pressure area care even when the patient has to be positioned more upright.



To operate the system it is necessary to set 4 parameters

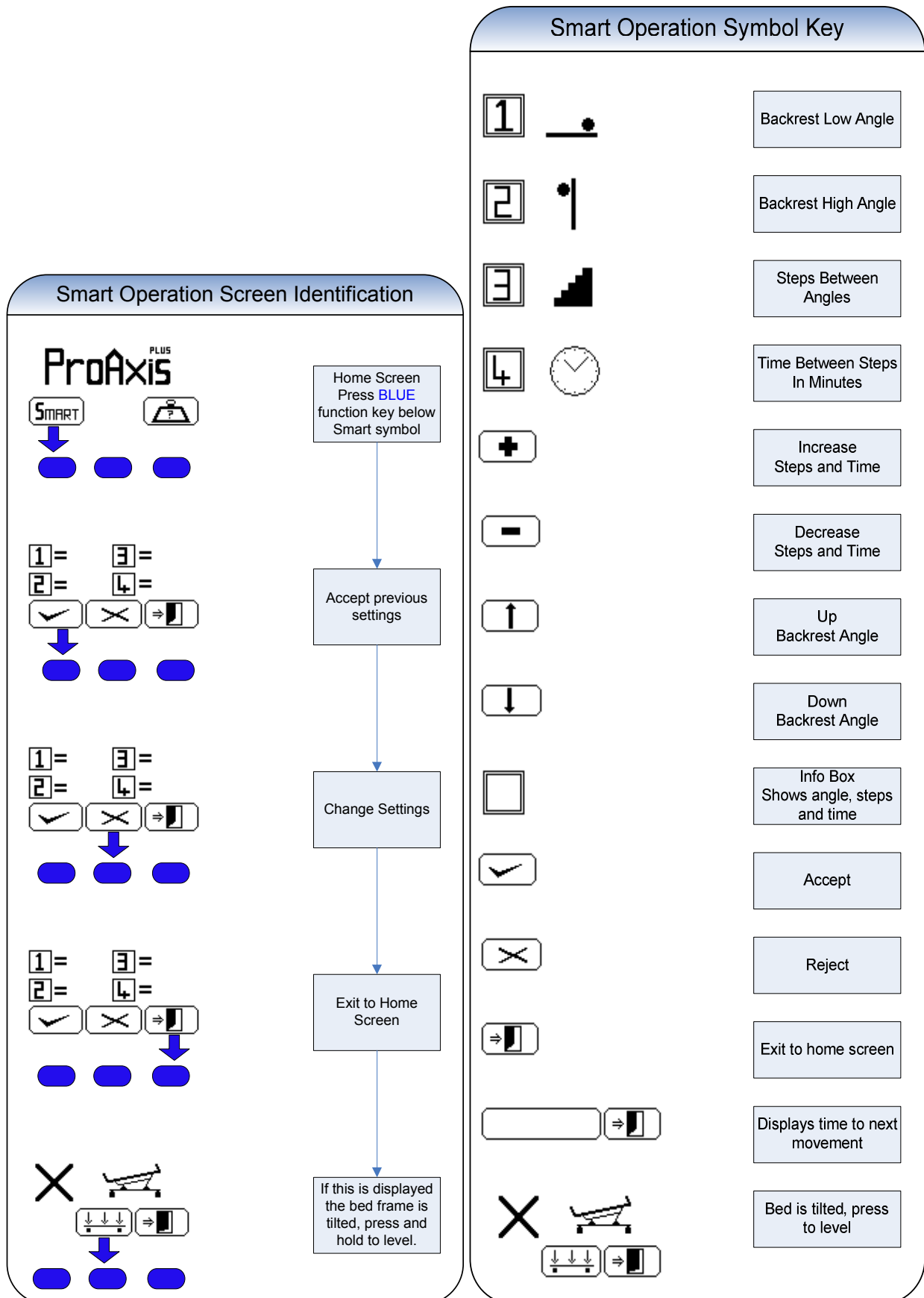
1. Backrest start angle (0-45 degrees)
2. Backrest stop angle (15-60 degrees)
3. Number of steps between the two angles
4. Time between each step.

Simply follow the flow diagrams below to set the system, the whole process will only take a few minutes. The angles chosen will depend on the amount of pressure redistribution required and the particular conditions of the patient, however the greater the movement the more effective the system will be..

Each patient is unique, therefore no “generic” programmes are available. Please see the notes at the end of the chapter.

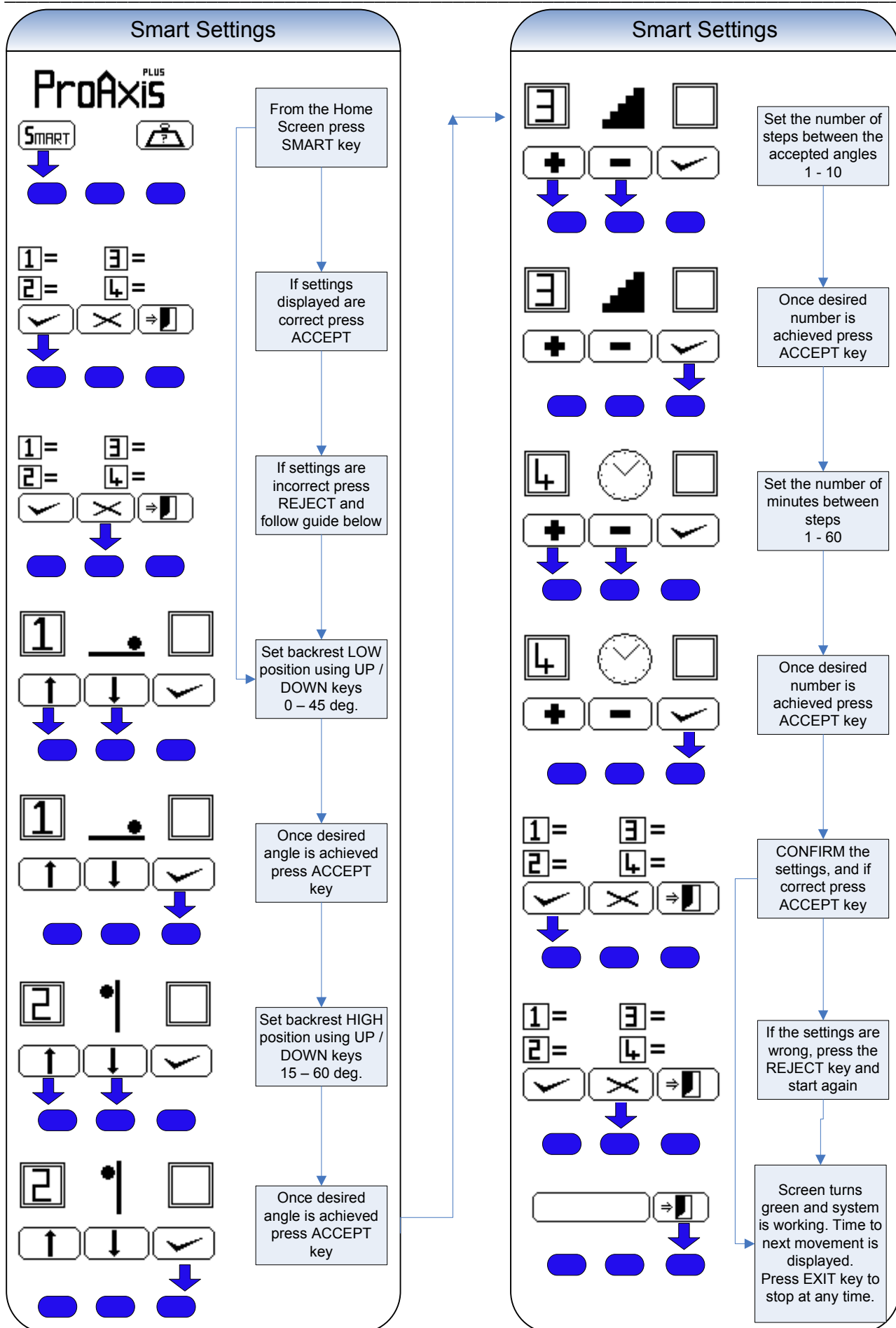
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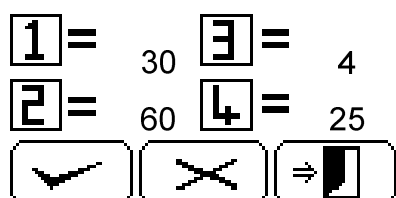
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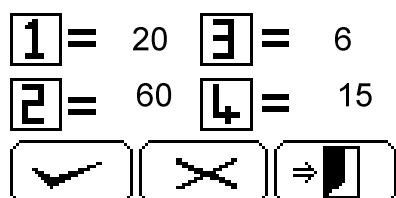
Notes on Setting the Smart System

1. There must be at least 15 degrees of movement for the system to be effective, in practice the larger the angular changes the better the pressure redistribution. Because of this the system will not allow settings of below 15 degrees.
2. The main screen uses colour coded backlights to assist in navigation.
Red = Smart is inoperative
Amber = Smart is being programmed.
Green = Smart is working.
3. If at any time during the setting sequence an error is made you can exit the system by not pressing any keys for 15 seconds.
4. Smart will override all other functions on the bed whilst operating, however the CPR function will still be available. Once activated the CPR function will disable Smart until the programme is reactivated.
5. Please ensure that the patient is able to tolerate movement of the bed over long periods of time. It is important to ensure that IV, breathing and drainage tubes are positioned so they do not pull during the range of movements.
6. This system may not be suitable for patients with unstable spinal injuries.
7. Before carrying out any patient procedures check the Smart display to ensure there is sufficient time to complete before the next movement. If in doubt stop the Smart and re-enable after the procedure has been completed.
8. The patient should be checked on a regular basis to ensure there is no marking, the programme may need to be changed if the patient's condition deteriorates or improves.

Programme Examples



Used for a medium to high risk patient, only 30 degrees of movement and each of the 4 steps take 25 minutes.



Used for high risk patients, 40 degrees of movement and each of the 6 steps takes 15 minutes.

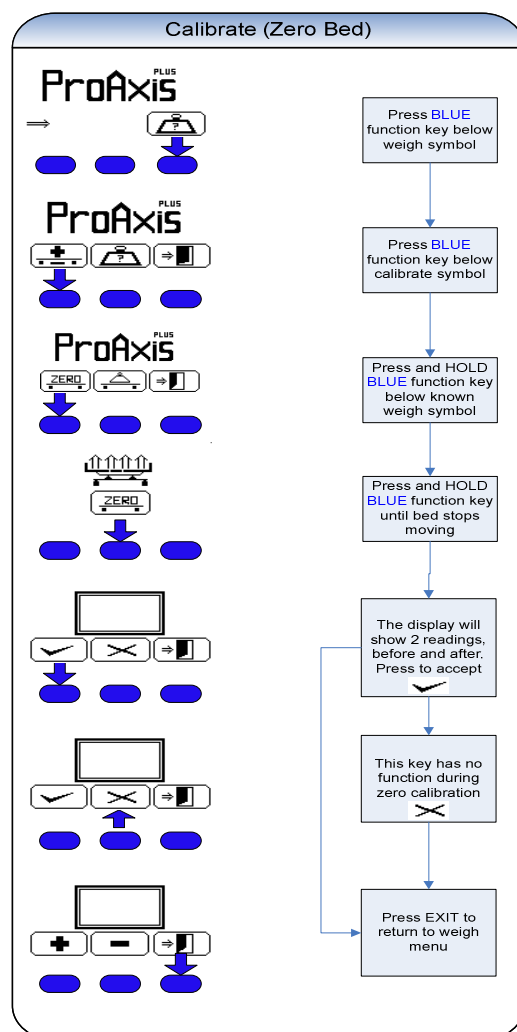
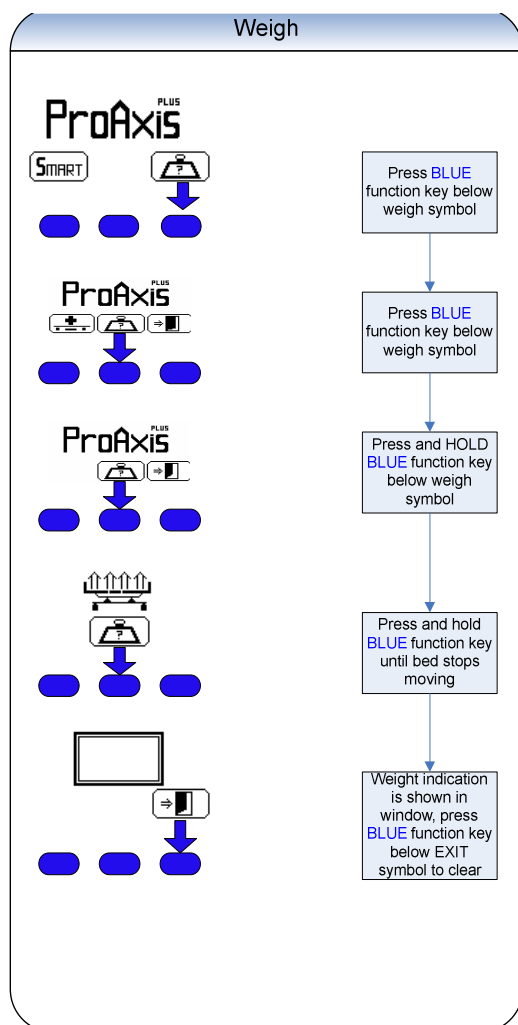
9. Weight Indicator (optional)

The Weight Indicator can be attached to any ProAxis^{plus}™ System and used as an aid to nursing staff to ensure that the patient does not exceed the safe working load of any equipment utilised to prevent manual handling issues.

The system works by calculating the energy required to lift the patient up and down, as this is directly proportional to their weight. It is important however that the system is plugged in and kept charged at all times. Please note that the system must rest for 20 minutes between weighs.

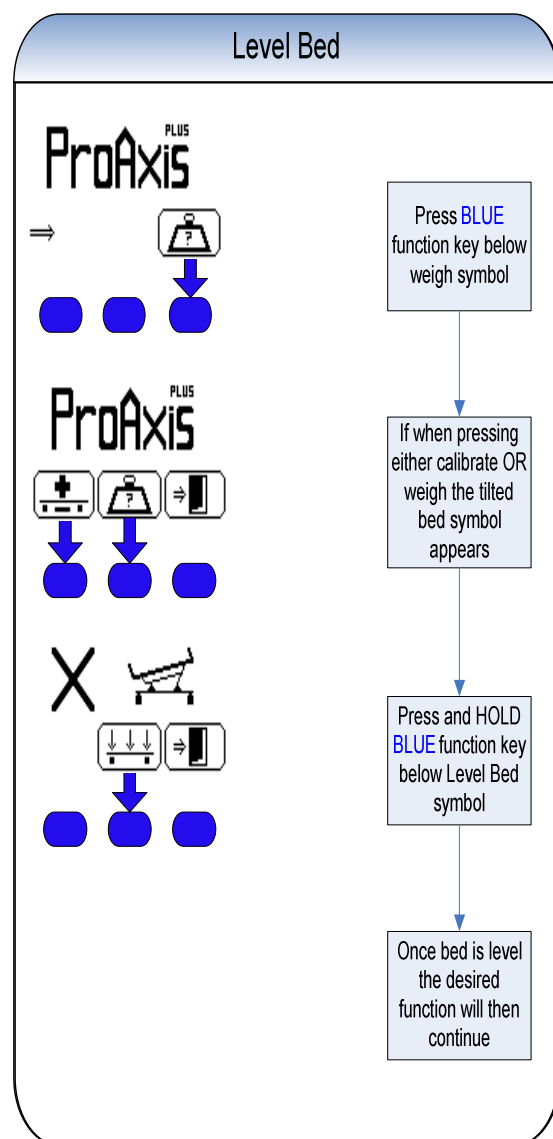
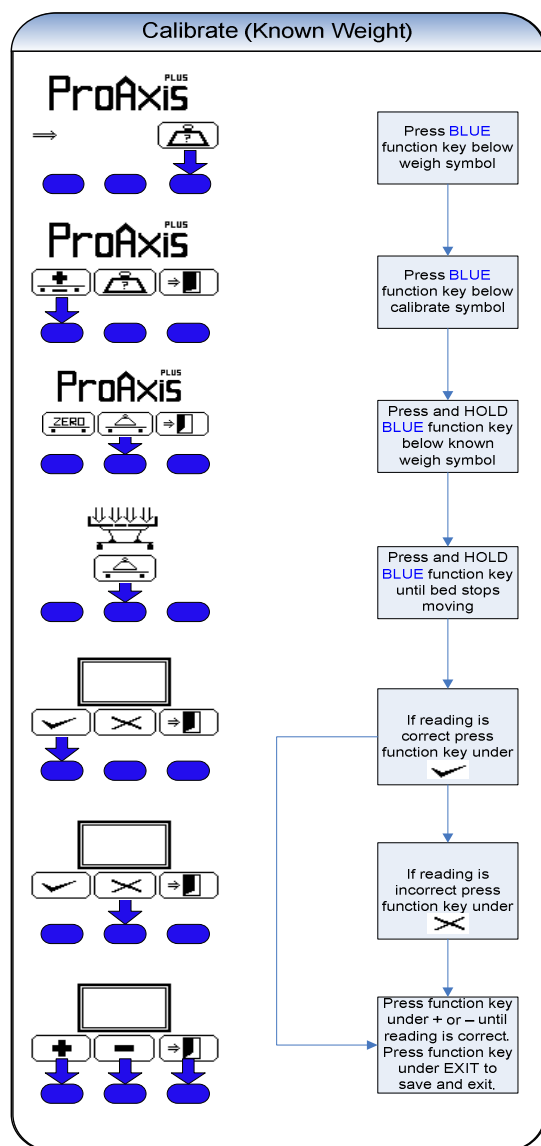
This function is an Indication ONLY, it must NOT be used for clinical purposes i.e. calculating the amount of drugs to be administered.

Simply follow the on screen instructions and press the buttons according to what is displayed on the screen.



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5 Cleaning and disinfection

Sodium dichloroisocyanurate (NaDCC) and Sodium hypochlorite (NaOCL) are recommended by the Public Health Laboratory Service as an effective means of disinfection. NaDCC and NaOCL are chlorine releasing agents and are the disinfectants of choice for Nightingale Care Beds Ltd for the disinfection of hard surfaces and laundry items.

Blood and bodily fluids

High levels of available chlorine (10,000 parts per million) will inactivate most bacteria and viruses. Nightingale treat blood or body fluid spills with NaDCC solution at 10,000 parts per million available chlorine.

Routing Decontamination

NaDCC solution at 1000 parts per million available chlorine is recommended by the public health laboratory for routine decontamination. Nightingale decontaminate all surfaces with this solution where there is no evidence of blood or body fluids or surfaces have been cleaned with detergent and water.

The following cleaning procedures should be adhered to, and a suitable cleaning solution should be used;

To be cleaned every day:

- Mattress platform sides
- Headboard/footboard
- Safety sides
- Handset and cable

To be cleaned when patient is transferred from the system:

- All of the above
- Mattress platform

To be cleaned when infected patient is transferred from the system:

- All of the above
- Main framework of system
- System base and castor axles including castors

To be cleaned every 6-8 weeks:

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All of the above

Important: If there is any doubt as to what solution of cleaning agent is required for the various cleaning procedures, the Infection Control specialist within the hospital should be contacted. If information is still unavailable, Nightingale beds can supply recommended solutions and data sheets.

6.1 Technical and maintenance

Servicing, Care and Maintenance

Each system is supplied with a 3 year warranty, subject to servicing annually , covering labour and parts that may require replacing through normal use.

It is recommended that every system is serviced annually to ensure the maximum length of service is provided and to meet Health and Safety requirements. Nightingale Care Beds Ltd will inform each purchaser by letter during the 12th month of each yearly period.

Note: Servicing may minimise cost of repairs/maintenance long term.

Details of maintenance contracts are available upon request.

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6.2 Specifications and Accessories

Overall Length	2180mm
Overall Width	950mm
Platform Width	950mm
Lowest Height of Platform	430mm
Highest Height of Platform	830mm
Back Rest Angle	0-60 Degrees (electric variable)
Foot Rest Angle	0-17 Degrees below (electric variable)
Knee Break	Electric Auto (Variable)
CPR	Electric Auto
Mass	165kg
Capacity	318kg
Safe Working Load	353kg
Trendelenburg Tilt	12.5 Degrees
Reverse Trendelenburg Tilt	12.5 Degrees
Floor Clearance	150mm
Electrical Test	EMC Tested to BS EN60601-1
Castors	4 x 125mm with 1 x Anti-Static
Actuators	Electric Linear 10000N
Control Box	With Battery Backup
Battery Backup	Yes
Handset	8 Button with two preset positions
Smart Control (Optional)	Programmable Pressure Re-distribution control
Weight Indicator (Optional)	Weight Indication Facility

Accessories

Removable split side rails
Visco Elastic Mattress
Safety side bumpers

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7 Troubleshooting

Problem	Fault	Solution
Handset Not Working	Lockout	Check the Lockout LED's. If any are red, press to unlock.
	Smart Control/Weight Indicator is Operational	<p>Is the Smart Control/Weight Indicator attached? If yes, it has to be in manual mode, indicated by a red screen.</p> <p>If in Smart/Weigh Mode, press exit, then press manual. If the confirm settings screen is displayed, press manual.</p>
	Transformer / Batteries	<p>Is the transformer attached, plugged into the wall and switched on.</p> <p>If no, plug the transformer in and switch on. Wait for 1 hour for the batteries to completely charge.</p>
Difficult to Steer or Manoeuvre, or system moving when transferring patient	Castors / Brakes	Check the brake pedal is in the correct position for the required movement.
The Smart Control backrest position will not set.	Smart Control	<p>There has to be a minimum angle of 15 degrees between the lowest and highest positions for effective pressure relief.</p> <p>Keep pressing Raise until Set appears on the display.</p>

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Total after sales service

Our aftersales and Helpline are always available.

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