PHASE III
PA7900 Mattress Replacement System

User Manual

CONTENTS

1. Introduction 4
   1.1 General Information
   1.2 Intended Use
2. Product Description 5
3. Installation 5
   3.1 Unpacking
   3.2 Setting Up
4. Operation 6
   4.1 Function Description
   4.2 Support Setting Procedure
   4.3 Weight Conversions
5. Cleaning 7
   5.1 Pump Unit
   5.2 Mattress
6. Storage 8
7. Maintenance 9
8. Troubleshooting 9
9. Technical Description 10
10. Guarantees and Warranty 11
    10.1 Pump Unit
    10.2 Mattress
    10.3 Guarantee
    10.4 Warranty
    10.5 Claims relating to Guarantee and Warranty
1. Introduction

This manual should be used for initial setup of the system and for reference purposes.

1.1 General Information

The Phase III System is a high quality mattress replacement system suitable for the treatment and prevention of pressure ulcers.

The Phase III System has been independently tested and successfully approved to the following standards:

- EN 60601-1
- EN 60601-1-2
- EN 55011 Class B
- EN 61000-3-2 Class A
- EN 61000-3-3
- EN 61000-4-2
- EN 61000-4-3
- EN 61000-4-4
- EN 61000-4-5
- EN 61000-4-6
- EN 61000-4-8
- EN 61000-4-11

1.2 Intended Use

This product is intended to reduce the incidence of pressure ulcers whilst optimising patient comfort.

NOTE: Equipment not suitable for use in the presence of a flammable anaesthetic mixture with air, oxygen or nitrous oxide.
2. Product Description

The Phase III is an alternating mattress replacement system used in the prevention and treatment of pressure ulcers. By using the established principles of alternating therapy the Phase III offers patients a comfortable and relaxing support surface which can both prevent skin breakdown and enhance healing.

The Phase III power unit is a compact pump featuring an audible and visual low-pressure alarm and a manual pressure setting function. The 20-cell mattress unit provides a unique design which keeps the lower levels of the cells constantly inflated whilst alternating and deflating the upper level. The head section of cells remains static throughout the 10 minute alternating cycle. The mattress has a heavy-duty nylon base sheet with a vapour permeable P.U. Coated stretch cover.

In the event of a cardiac arrest, rapid deflation is achieved by using the highly visible CPR facility.

3. Installation

3.1 Unpacking

The pump unit and mattress are packaged in separate boxes to secure the contents inside. When unpacking the boxes to remove the pump unit and mattress, check for any damage which may have occurred during shipping. Please report any damages to Park House Healthcare and remove the system from use.

3.2 Setting Up

1. Place the pump at the foot end of the bed.
2. Remove the existing mattress and place the Phase III on the bed frame with the cell/vapour permeable cover uppermost. The inflation tubes should be at the foot of the bed.

3. Connect the air hoses from the mattress with the air outlet connectors on the pump unit. These are quick release connectors and should click into place securely.
4. Plug in the AC power cord to the AC outlet (be sure the switch is in the off position before plugging in)

5. Plug in and turn on the power. The power switch green neon will light.
6. Select the LIGHT, MEDIUM or HEAVY weight setting relevant to the patient’s build. The light will continue to flash on the chosen setting until ready for patient use. Once up to the appropriate pressure the system will then go into static mode for 10 minutes. This is to enable correct positioning of the patient on a firm surface.
7. After 10 minutes in static mode, the system will automatically revert back to the chosen setting.
8. The keypad will lock out after 6 minutes of inactivity. To unlock the keypad, press the LIGHT and HEAVY buttons simultaneously.

4. Operation

4.1 Function Description

1. Static Mode
If required, the static button is on the front of the pump unit and once pressed the mattress will stop alternating. The deflated cells will inflate to match the inflated cells and then remain static. This function will last for 20 minutes and then automatically revert back to alternating mode.

2. Low Pressure Alarm
If the pump unit detects low pressure an intermittent alarm will sound. This can be silenced by pressing the ALARM RESET button on the front of the pump.

3. Mains Failure Alarm
If the pump unit detects that the mains have been switched off, or the power supply is cut, then a constant alarm will sound. This can be silenced by pressing the same ALARM RESET button. If the system is unplugged from the power source, the mattress will remain inflated for up to 24 hours, if no leaks are present, allowing for transportation of the patient.

4. CPR Requirement
If rapid deflation of the mattress is required, simply pull the CPR tag. When the CPR function is initiated the alarm will sound. The alarm may be silenced by pressing the same ALARM RESET button.
5. Infection Control
Should the mattress become infected then please refer to ‘cleaning’.

6. Static transportation mode
When the pump is disconnected at the mains the mattress will retain pressure in static mode for up to 24 hours. You can put the mattress in to transport mode manually by disconnecting the hoses from the pump and connecting them together.

4.2 Support Setting Procedure

It is important to follow the correct support setting procedure to ensure the patient receives adequate support (lift) and maximum pressure relief and comfort.

1. Select the correct patient weight setting as indicated below and press the appropriate button.
2. The mattress will now inflate and the light will flash until it is ready for patient use.
   The static mode will then engage to enable the carer to position the patient in bed and make them comfortable. The static mode will automatically revert back to the selected pressure setting after 10 minutes.

4.3 Weight Conversions

<table>
<thead>
<tr>
<th>Weight in kilograms</th>
<th>LIGHT (31 - 83 kg)</th>
<th>MEDIUM (70 - 140 kg)</th>
<th>HEAVY (127 - 247 kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight in pounds</td>
<td>70 - 183 lbs</td>
<td>155 - 308 lbs</td>
<td>280 - 546 lbs</td>
</tr>
<tr>
<td>Weight in stones</td>
<td>4.5 - 13 stones</td>
<td>11 - 22 stones</td>
<td>20 - 39 stones</td>
</tr>
</tbody>
</table>

5. Cleaning

The following guidelines are suggested by Park House Healthcare Ltd as being suitable infection control procedures. Further information is available upon request.

5.1 Pump Unit

It is important to follow the cleaning procedures for single patient use. General cleaning may be affected by using a cloth dampened with a mild detergent and water solution. This approach may be followed either by wiping with a sodium hypochlorite solution to a dilution of 1000 ppm or by using an alcoholic wipe. Wipe the pump unit with a damp cloth and a mild detergent, and keep it away from dust. If another detergent is used, choose one that will have no chemical effects on the surface of the plastic case of the pump unit.

⚠️ CAUTION ⚠️
- Do not immerse or soak pump unit.
- Do not use hyper carbonate or phenol based cleaning solutions.
- Do not use any abrasive compounds or cleaning pads.

5.2 Mattress

General Cleaning

Using a single use wipe, clean the mattress cover with a solution of neutral detergent and hand hot water. Rinse thoroughly with clean water and a damp single use wipe. NOTE: The top, bottom and all four sides of the mattress, including under the zip flaps MUST be cleaned.

Disinfecting the cover

If the cover is heavily soiled or has been exposed to bodily fluids such as blood, it will require a more thorough cleaning procedure:

Wipe the cover using a single use wipe and a 0.1% Chlorine Solution (1,000ppm) and cold water. If required a 1% Chlorine Solution (10,000ppm) and cold water can be used. Rinse thoroughly with clean water and a damp single use wipe. Make sure the cover is completely dried before refitting to the mattress.

Frequent or prolonged exposure to higher concentration disinfectant solutions may prematurely age the fabric cover of mattresses. Surfaces must be protected during use and rinsed and thoroughly dried after application of a disinfectant.

Laundering

Before laundering mattress covers should be completely removed. Where required mattress covers can be laundered as follows:

Pre wash 80ºC + 15 minutes
Main wash 80ºC + 15 minutes

This should be followed by a cold rinse and extraction.
Drying

Mattress covers should be hung from a line or bar and drip dried in a clean indoor environment. Covers must be completely dried before refitting to the mattress.

Mattress covers can be tumble dried on a low heat setting for 90 minutes. Drying temperature must not exceed 40°C. Exceeding this temperature can cause significant damage to the mattress cover.

During cleaning procedures suitable protective clothing should be worn. Ensure that mains power supply to the pump has been disconnected prior to cleaning.

6. Storage

1. To store the mattress, lay the mattress out flat and upside down.
2. Roll from the head end towards the foot end with CPR valve open.

⚠️ NOTE: Do not fold, crease or stack the mattresses. Avoid direct sunlight.

7. Maintenance

1. Ensure that all hoses inside and outside the pump are kink and split free. If any splits are found, replace the hoses.
2. Ensure that all the hoses inside and outside the pump are not brittle. Replace if needed.
3. Check that all indicators are working, if not the faulty indicators need to be replaced by your distributor.
4. Check the main power cord and plug for abrasions or excessive wear.
5. Check the mattress cover for signs of wear and damage. Ensure the mattress cover and hoses are connected together correctly.
6. Check the air hoses for kinks or breaks.

8. Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
</table>
| The pump is showing no indications it is working | • Check if the mains are plugged in.  
• Check if the mains are turned on.  
• Check if the switch is on.  
• Check if any fuse in the plug has blown.  
• Reset circuit breakers on the side of the pump. |
| The low-pressure light is constantly flashing and the alarm is sounding | • Check that the hoses are all connected.  
• Check that the CPR is in place.  
• Check if there is any leakage in the mattress system.  
• Check that all pipes are connected on the side of the mattress. |
| The pump is on but not inflating the mattress | • Disconnect hoses from pump and check if air is coming out.  
• Check that all hoses are connected securely.  
• Check that there are no kinks in the tubing running down the side of the mattress.  
• Ensure that the patient has not been placed on the mattress before it is fully inflated. |
| The system does not appear to be alternating | • Check that there are no kinks in the tubing running down the side of the mattress. |
| The pump is operating noisily | • Make sure the pump is resting against a solid surface. |

If your problem cannot be resolved using the above information, please contact Park House Healthcare.
9. Technical Description

Product Code | PA7900
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**Power Supply**
- AC 230V, 50Hz, 0.25A (for 230V system)

**Fuse Rating**
- Circuit Breakers T1A/250V

**Cycle Time**
- 10 min. 50/60Hz

**Dimension (L x W x H)**
- 35 x 12.5 x 24 (cm)

**Weight**
- 4 kg

**Environment**
- Temperature: Operation: 10°C to 40°C (50°F to 104°F); Shipping: -15°C to 70°C (5°F to 158°F)
- Humidity: Operation: 10% to 90% non-condensing; Shipping: 10% to 90% non-condensing

**Classiﬁcation**
- Class II, Type BF, IP21
- Applied Parts: Air Mattress
- Not suitable for use in the presence of an ignitable anaesthetic mixture (No AP or APG protection)
- Continuous operation

**Mattress**
- Model: 7" Mattress
- Dimension (inflated, L x W x H): 190 x 88 x 20 (cm)
- Weight: 4 kg
- Pressure Range: 30 - 50 mmHg
- Maximum Patient Weight: 247 kg or 39 stones

Contact the distributor or EU representative for further technical documents.

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**EMC Information**

**Guidance and Manufacturer’s Declaration - Electromagnetic Emissions:**

This device is intended for use in the electromagnetic environment specified below. The user of this device should make sure it is used in such an environment.

<table>
<thead>
<tr>
<th>Emissions Test</th>
<th>Compliance</th>
<th>Electromagnetic Environment-Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF emissions CISPR 11</td>
<td>Group1</td>
<td>The device uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment</td>
</tr>
<tr>
<td>RF emissions CISPR 11</td>
<td>Class B</td>
<td></td>
</tr>
<tr>
<td>Harmonic emissions IEC61000-3-2</td>
<td>Class A</td>
<td>The device is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network.</td>
</tr>
<tr>
<td>Voltage fluctuations / Flicker emissions IEC61000-3-3</td>
<td>Complies</td>
<td></td>
</tr>
</tbody>
</table>

**Guidance and Manufacturer’s Declaration - Electromagnetic Immunity:**

This device is intended for use in the electromagnetic environment specified below. The user of this device should make sure it is used in such an environment.

<table>
<thead>
<tr>
<th>Immunity Test IEC60601 test level</th>
<th>Compliance</th>
<th>Electromagnetic Environment-Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrostatic Discharge (ESD) IEC61000-4-2</td>
<td>±6kV contact ±6kV air</td>
<td>Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%</td>
</tr>
<tr>
<td>Electrical fast transient/ burst IEC61000-4-4</td>
<td>±2kV for power supply line ±1kV for input/output line</td>
<td>Mains power quality should be that of atypical commercial or hospital environment</td>
</tr>
<tr>
<td>Surge IEC61000-4-5</td>
<td>±1 kV line(s) to line(s) ±2 kV line(s) to earth</td>
<td>Mains power quality should be that of atypical commercial or hospital environment</td>
</tr>
<tr>
<td>Voltage dips, short interruptions and voltage variations on power supply input lines IEC61000-4-1</td>
<td>&lt;5 % U&lt;sub&gt;i&lt;/sub&gt; (&gt;95 % dip in U&lt;sub&gt;i&lt;/sub&gt;) for 0.5 cycle 40 % U&lt;sub&gt;i&lt;/sub&gt; (&gt;60 % dip in U&lt;sub&gt;i&lt;/sub&gt;) for 5 cycles 70 % U&lt;sub&gt;i&lt;/sub&gt; (&gt;30 % dip in U&lt;sub&gt;i&lt;/sub&gt;) for 25 cycles &gt;5 % U&lt;sub&gt;i&lt;/sub&gt; (&gt;95 % dip in U&lt;sub&gt;i&lt;/sub&gt;) for 5 sec</td>
<td>Mains power quality should be that of atypical commercial or hospital environment. If the user of this device requires continued operation during power mains interruptions, it is recommended that the device be powered from an uninterruptible power supply or a battery.</td>
</tr>
<tr>
<td>Power frequency (50/60Hz) magnetic field IEC61000-4-8</td>
<td>3 A/m</td>
<td>Power frequency magnetic fields should be at levels characteristic of atypical location in a typical commercial or hospital environment.</td>
</tr>
</tbody>
</table>

NOTE: U<sub>i</sub> is the a.c. mains voltage prior to the application of the test level

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NOTE: The specifications also apply to those areas operating with the same power supply
This device is intended for use in the electromagnetic environment specified below. The user of this device should make sure it is used in such an environment.

### Immunity Test

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Compliance Level</th>
<th>Electromagnetic Environment-Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC60601 test level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portable and mobile RF communications equipment should be used no closer to any part of this device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Recommended separation distance**

- **Conducted RF**
  - **IEC 61000-4-6**
    - 3 Vrms at 150 kHz to 80 MHz
    - 3 Vrms outside ISM bands

- **Radiated RF**
  - **IEC 61000-4-3**
    - 3 V/m at 80 MHz to 2.5 GHz

**Selected values from the table**

<table>
<thead>
<tr>
<th>Rated maximum output power of transmitter (W)</th>
<th>Separation distance according to frequency of transmitter (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 kHz to 80 MHz</td>
<td>0.12</td>
</tr>
<tr>
<td>80 MHz to 800 MHz</td>
<td>0.38</td>
</tr>
<tr>
<td>800 MHz to 2.5 GHz</td>
<td>0.73</td>
</tr>
</tbody>
</table>

Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).^b^ 

Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. 

**Interference**

Interference may occur in the vicinity of equipment marked with the following symbol:

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

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NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

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a) The ISM (industrial, scientific and medical) bands between 150 kHz and 80 MHz are 6,765 MHz to 6,795 MHz; 13,553 MHz to 13,567 MHz; 26,957 MHz to 27,283 MHz; and 40,66 MHz to 40,70 MHz.

b) The compliance levels in the ISM frequency bands between 150 kHz and 80 MHz and in the frequency range 80 MHz to 2.5 GHz are intended to decrease the likelihood that mobile/portable communications equipment could cause interference if it is inadvertently brought into patient areas. For this reason, an additional factor of 10/3 is used in calculating the recommended separation distance for transmitters in these frequency ranges.

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

d) Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.
10. Guarantees and Warranty

10.1 Pump Unit

All new pumps have a guarantee for a period of 2 years following the date of dispatch.

10.2 Mattress

All new mattresses have a guarantee for a period of 2 years following the date of dispatch.

10.3 Guarantee

Park House Healthcare guarantees to repair or place any equipment issued to its customers, which is found to be faulty during the relevant guarantee or warranty period. The Company’s guarantees are subject to following conditions:

a) That the equipment has been used for the purpose for which it was intended.
b) That the usage has been on a ‘fair wear and tear’ basis.
c) That the Company’s cleaning / disinfection guidelines have been followed.
d) That the Company’s maintenance guidelines have been followed.
e) That maintenance has been carried out by a Park House approved engineer

10.4 Warranty

Extended warranties can be purchased from Park House Healthcare, for more information contact Customer Services on 0845 0600 333.

10.5 Claims relating to Guarantee and Warranty

In the event of a fault being discovered within the warranty period, the customer must notify Park House Healthcare at the earliest opportunity.

If upon inspection, Park House Healthcare accepts liability then the equipment shall be repaired or replaced immediately.

If Park House Healthcare does not accept liability it shall inform the customer of its reasons for declaration and provide the customer with an estimate on either the repair or replacement cost.

Park House Healthcare reserves the right to alter or amend this document without prior notice.