

## **User & Full Service Manual**



### **Pressure Relieving / Alternating Air Mattress & Pump**

**Pump Model: P06C**

**Mattress Model: HH/T08**

**NB: Please ensure this document is fully read & understood  
by the Clinician / Carer / Service Engineer prior to use.**



# Cleveland Bari ECO™ User/Service Manual



*"Let us take care of you"*

# Cleveland Bari ECO™ User/Service Manual

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## SAFETY

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Before you connect the system pump to a mains socket, read carefully all the installation instructions.

This system has been designed to comply with regulatory safety standards including:

- EN 60601-1 / Class 1 Medical Device

For your own safety and the safety of the equipment always take the following precautions:

- Keep the pump away from sources of liquids.
- Do not expose the system, especially the mattress, to naked flames, such as cigarettes etc.
- Do not store the system in direct sunlight.
- Do not use phenolic based cleaning solutions.
- Keep sharp objects away from the mattress.
- Ensure that the system is clean and dry prior to storage.
- Store the pump and mattress in the protective bags supplied.
- We recommend the use of cot sides on the bed while the system is in use and the patient is positioned on top. Local policies regarding the use of cot sides should be taken into account.
- Keep these instructions handy for reference.

### WARNING

**Electrical equipment may be hazardous if misused or damaged. Ensure the power is isolated to the system before any repairs or maintenance is carried out & these should only be carried out by suitably trained & authorised personnel.**

**For further advice please call Herida Healthcare on Freephone 0800 193 6030.**

## INTRODUCTION

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### Product Description

The Cleveland Bari ECO™ is our highly specialised, uniquely designed, economy bariatric pressure relieving mattress replacement system. This advanced bariatric system has been developed for use with the complex, heavy duty user in mind. Our specialist bariatric system is well versed with not only prevention but treatment of complex pressure ulcers, specifically for use with larger patient groups. The deeper cell construction provides support when it is most required. The one in two cell alternating cycle is more recognisable for relief with the heavier client, whilst providing excellent comfort for longer term users.

### Application

This product is to be used for those patients who have existing tissue damage or pressure ulcers. It can also be used as a high-risk preventative item.

### Contraindications

Patients with severe spinal injuries / fractures should not be using this product.

Do not attach the mattress to the fixed part of the bed frame. It should be secured to the moving / working parts to ensure the bed can be profiled as required.

This product forms part of a holistic care package and should only be used by trained personnel. For training or further advice contact Herida Healthcare on Freephone +44 800 193 6030.

### Working Principle

The dynamic mattress system consists of a dynamic air pump and an alternating air mattress. The air mattress has three distinct airway chambers:

1. Pillow Chambers – Air tubes 1,2 & 3. These remain static throughout as to avoid head movement, sickness to the user.
2. Group A Chambers – Air tubes 4,6,8,10,12,14,16, 18 & 20.
3. Group B Chambers – Air tubes 5,7,9,11,13,15, 17 & 19.

A and B chambers alternate inflating and deflating by using the pump connected. This air alternating, mattress system enhances the blood circulation to treat and prevent pressure ulcers, when part of a holistic care package. Initialisation can take up to 60 minutes to achieve & it is recommended that a Rapid Inflator is used, where possible, to reduce the inflation time.

## OPERATION

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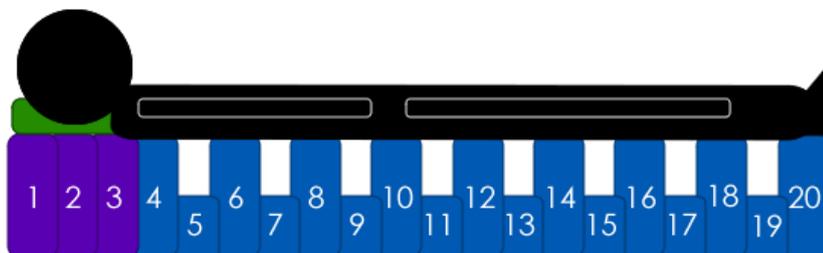
### Seat Inflating / Auto Firm

When the pump is adjusted to the Seat Inflating / Auto Firm air chambers A & B are both fully inflated: Seat Inflated - 60mmHg for 30 mins / Auto Firm - 40mmHg for 30 mins. Seat inflated will show 'L' on the display & Auto Firm will show '---' on the digital display.



### Alternating Mode

When started, both chambers A & B are initially inflated. Group A chambers deflate followed by both A & B inflating. This is followed by Group B chambers deflating. This is one complete cycle & the cycle time depends on what the user has determined on the pump panel.



### Profiled Bed & Mattress - Clinical & Carer Considerations

If the bed is in the profiled position, ensure that the pump pressure is increased accordingly to appropriately accommodate (\*see below). Unless the clinical condition dictates, it is not advised to adjust the bed profile beyond 45°. The Cleveland Bari ECO II™ will continue to operate beyond this but may cause increased pressure points on the patient. A fist or hand test to ensure patient clearance under the sacral area is a best practice guide (see image 1DA and diagram of profiled mattress 2DA or visit our website ([www.heridahealthcare.co.uk](http://www.heridahealthcare.co.uk)) under "Education" tab section and select Dynamic Best Practice from the drop-down menu). If you are dealing with heavier or more complex patients that require a deeper cell mattress, then please contact your provider or seek assistance via Herida Healthcare Customer Services on UK Freephone number 0800 193 6030.

## OPERATION

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Image 1DA

(NB: use hand to check ensure appropriate clearance when profiled as below. Add more pressure on the pump if required in order to achieve this. NB: Weight setting is a guide only and cell pressure must also be taken into consideration for individual patients). Clinical judgement must always overrule user guidance.

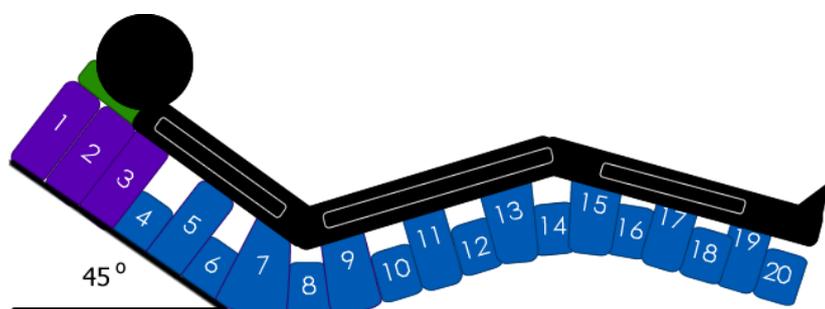


Image 2DA

### Installation

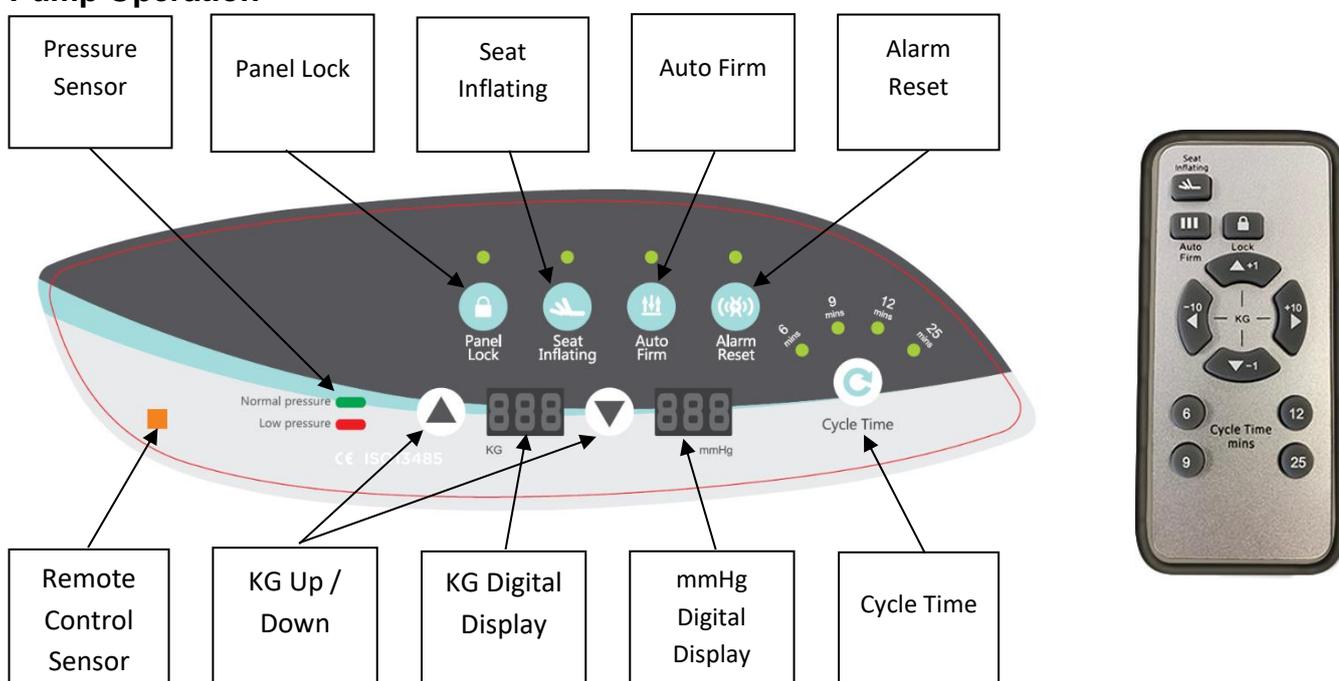
1. Remove all packaging & place the pump either at the end of the bed on its hooks or on a flat surface.
2. Ensure that there are no sharp or hard objects on the bed before unfolding the mattress & laying out flat. The air inlet should be located at the feet side of the bed.
3. Use the Rapid Inflator (if available) to inflate the mattress before connecting the air tubes to the pump. The tubes should be connected securely in place without any signs of leakage. If a Rapid Inflator is not available, the mattress will take approximately 60 minutes to inflate.
4. Connect the pump to the socket & switch on.
5. Adjust the mode & pressure by the users condition & weight to suit.
6. All the pump keys are rendered inoperable during initialisation.

## OPERATION

### Safety Instructions

1. Ensure that there are no sharp objects, fire or abrasive materials in the vicinity. If the mattress is damaged. Remove the patient & transfer to an alternative mode of pressure relief.
2. If there is an issue with the pump, remove the patient & transfer to another mode of pressure relief.

### Pump Operation



<b>Pressure Sensor:</b>	Indicates whether the mattress/pump is either low or normal pressure.
<b>Panel Lock:</b>	Locks the keys on the panel. Hold for 2 seconds to lock/unlock.
<b>Seat Inflating:</b>	Pump holds at 60mmHg then reverts to alternation after 30mins.
<b>Auto Firm:</b>	Pump holds at 40mmHg then reverts to alternation after 30mins.
<b>Alarm Reset:</b>	Resets the pump audible alarm.
<b>Remote Control Sensor:</b>	Sensor for the remote control unit.
<b>KG Up / Down:</b>	Sets the user weight. This is a comfort setting only & can be increased/decreased in multiples of 5KG according to the patient's own comfort level.
<b>KG Digital Display:</b>	Display readout in KG
<b>mmHg Digital Display:</b>	Display readout in mmHg. LED flashed during alternation.
<b>Cycle Time:</b>	Defines the required cycle time between alternations.

## OPERATION

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### Initialisation

All air cells are inflated during initialisation which takes approx. 60mins. After 60mins, the pressure goes up to 20mmHg and holds for 8 seconds and then goes to alternation. If it cannot reach 20mmHg in 60mins, the pump alarm sounds and shows E01 in the Kg display. Press the alarm key to mute the alarm and the pump restarts the initialisation process. During initialisation, all modes or keys are locked and cannot be operated.

### Alternation

Cycle time 6mins: ABC inflates 4mins / A deflates 2mins / ABC inflates 4mins / B deflates 2mins.

Cycle time 9mins: ABC inflates 7mins / A deflates 2mins / ABC inflates 7mins / B deflates 2mins.

Cycle time 12mins: ABC inflates 10mins / A deflates 2mins / ABC inflates 10mins / B deflates 2mins.

Cycle time 25mins: ABC inflates 23mins / A deflates 2mins / ABC inflates 23mins / B deflates 2mins.

### Sleeping Mode

Adjust the Cycle Time key to 0 which is indicated when all the lights are illuminated. The pressure will lock to the last inputted pressure until changed by the operator.

### Air Leakage / Low Pressure Alarm

- If initialisation fails, the alarm will sound & the display will show E01.
- During normal operation, when the pressure is lower than 8mmHg for 6 minutes, the pump will alarm indicating possible air leakage from the mattress. E02 will display.
- Pushing the Alarm Reset key will silence the pump alarm.
- If the alarm sounds consistently and all attempts to remedy have failed, seek engineer assistance to rectify.

When the pressure is greater the 8mmHg, the Normal Pressure light will be illuminated. When the pressure is less then 8mmHg the Low Pressure light will be illuminated.

### Power Off Alarm

The alarm will sound if power is lost to the pump.

## OPERATION

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### Pump Characteristics

<b>Power</b>	AC220V / AC110V
<b>Pressure Range</b>	10 – 49 mmHg
<b>Internal Fuse</b>	F0.5A 250V
<b>Plug Fuse</b>	3A
<b>Frequency</b>	50Hz / 60 Hz
<b>Power</b>	8W
<b>Noise</b>	≤45dB
<b>Alternating Time</b>	6 / 9 / 12 / 25 minutes

### Pump Pressures

<b>Weight (Kg)</b>	<b>Pressure (mmHg)</b>	<b>Weight (Kg)</b>	<b>Pressure (mmHg)</b>
30	10	170	36
40	12	190	38
50	14	210	40
70	18	230	42
90	22	250	44
110	26	270	46
130	30	290	48
150	34	300	49
This is subject to a tolerance of ±20%			

### Mattress Characteristics

<b>Model</b>	T06 Cleveland Bari ECO II™
<b>Layers</b>	2
<b>CPR</b>	1
<b>Max Loading Weight</b>	300 Kg

## MAINTENANCE

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### Cleaning

Regular cleaning of the mattress is required as per the below instructions. Failure to follow these instructions may result in a void warranty situation.

**STANDARD CLEANING PROCEDURE**

Wipe down cover with a soft, disposable cloth which has been moistened with warm water & detergent (advisory at 40°C).

**SEVERE INFECTION CONTROL PROCEDURE**

Use a diluted solution of Sodium Hypochlorite (or similar) & fresh water (up to 10,000 ppm) In the following circumstances:

- Blood or bodily fluids has soiled the mattress
- Between different patients

**Directions for use:**

- Apply a fresh water base to the cover with a soft cloth
- Apply the solution
- Thorough fresh water wash down
- Ensure the cover is dried thoroughly

Machine wash up to 85°C	Do not dry clean	Occasional tumble dry on low heat	Do not bleach	Do not iron	Do not use phenol based products such as 'Stericol' or Clearsol'
					

### Maintenance & Repair

Maintenance & repair work should only be carried out by an appointed engineer who have been trained by Herida Healthcare Ltd. and only original manufacturers parts should be used. Failure to do so could result in a void warranty situation.

### Service Interval & Instructions

This product must be serviced annually as a minimum to ensure ongoing safe, trouble free usage. The service must be conducted by a Herida trained / competent individual that has demonstrable training records. This training must be reviewed regularly. Only Herida Healthcare spare parts can be used to ensure warranty and safe use is achieved throughout.

## MAINTENANCE

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At point of service the following aspects must be maintained to ensure that manufacturer's warranty remains intact. These can be done in a non-alphabetic way, if all areas are covered:

- Ensure the pump unit and mattress / cells are fully decontaminated prior to service and are cleaned in accordance with the schedule provided.
- Electrical safety checks / Pat Test – To be conducted annually or time of service. Please make sure the kettle lead and plug fuse is compliant at 3amp only.
- Filters must be changed at point of return / before patient handover / new client and at time of service.
- Rear pump fuse must be inspected and replaced if faulty – 0.5A only.
- Pump casing must be opened and vacuumed internally, if any dust or particles are evident. Never use any water / fluid internally to clean.
- Pump must achieve pressure within 20% tolerances as per page 10 of this manual – via calibrated sphygmometer and cell attachments. Kits available to purchase via manufacturer. Ensure that a rapid inflator is used at time of service to ensure that service and installation time is reduced to minutes.
- Pump low pressure function is evident at 6mmHG or lower for 15-20 minutes or more.
- Cells are to be fully inflated and tested for leakage. This should be done via a pressurised system, soak test over at least 3 cycles or under weights to replicate patient in situ.
- The tubing and connectors that run down the side of the mattress, must be clear of kinks / debris or must not be snapped in any way. These should be running freely with air distribution to each cell and have no leakage or deterioration of surface. A spring is situated at the head section of the mattress tubing at to avoid kink in the critical area.
- The none return valve holding the 3 head cells must be functioning correctly. This is evident via 3 solid static head cells / none alternating during cycle.
- A functional "soak test", ensuring that the tactile panel / pump and mattress operates fully in synergy. This is done by attaching and inflating the mattress to full pressure and then increasing / decreasing both weight and other panel / button functions.
- The key lock button is effective by release / addition, holding 2 seconds or more to activate.
- CPR is to be checked functionally and deflated after all soak tests are completed.
- Mattress Cover and cells are to be inspected for puncture, tear, rip or excessive odour post cleaning and replaced accordingly if defective.

### Storage

Good ventilation will be required when storing the product & it should always be kept dry & away from direct sunlight. Temperature should be maintained in the region of 22°C ± 3°C when in use. Avoid repeat exposure to extreme temperatures.

## MAINTENANCE

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### Transportation

- Care should be taken when loading, unloading and during transportation & refrain from placing heavy objects on top of the mattresses.
- Do not expose to direct sunshine for any period of time when loading and unloading & ensure a cover is used to protect the mattress when raining or snowing.
- Do not open with a knife or sharp objects as this may damage the mattress cover.
- Always use the provided re-usable pump protector for all transportation methods. This plastic sleeve will need to be cleaned prior to re-use for infection control purposes.

### Calibration

- During service intervals or between patients, it is recommended to check pressure tolerances (see the table on page 9) using a Herida Testing System. Calibration training must be conducted & applied by a Herida trained technician.

### Other Considerations

- Original internal fuse is F0.5A 250V. When replacing the fuse, ensure a similar type is used and that the fuse is disposed of in the appropriate manner.
- During normal working, when the emergency deflation is needed, switch off the pump and pull out the CPR toggle quickly.
- The mattress should be away from sharp objects to avoid any scratches or punctures.
- Put bed cover sheet or blanket over the mattress before use. No plastic or rubber sheets should be used.
- Ensure that all the tubes remain flat & any twists / kinks are avoided.
- If any air leakage is found, check all the tube connectors and air tubes carefully to see if any are loose or damaged.
- If any major problems or issues are found or the product is not working, stop using immediately and ask the engineer / manufacturer / provider for assistance.
- Any discarded mattress or covers should be treated in accordance with local rules and guidance in accordance with contaminated products.
- The pump is factory set to 80Kg and is a guide only. This can be adjusted depending on the needs of the patient.

### Parts and Accessories:

- Mattress (1PC) / Pump (1PC) / Air tube (1PC) / Mattress cover (1PC)

## ROUTINE CHECKS

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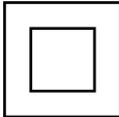
### **Mattress**

- Remove top cover and inspect for signs of wear or any tears.
- Check zips are still operative & function as normal.
- Check integrity of all connectors including cells, tubing and CPR toggle.
- Ensure all cell fasteners are snapped to the mattress base and are not loose or faulty.
- Check that stitching which secures the straps to the base of the mattress is sound and no fraying or damage has occurred.

### **Pump**

- Check the outer casing of the pump unit for damage.
- Examine the mains supply lead of the pump unit for signs of wear or damage & replace if necessary.
- Test power fail alarm system before use.

## WARNINGS & SYMBOLS

	<p>Warning – Follow guidance at all times as per the instructions within the user manual.</p>
	<p>BF application symbol – Provides a higher degree of protection against electric shock.</p>
	<p>Class II electrical appliance – Double insulated.</p>
	<p>Dispose of electrical equipment correctly (WEEE).</p>
	<p>Do not use broken or damaged electrical plugs or cables as this may lead to electric shocks.</p>
	<p>Ensure hands are dry before handling all electrical items.</p>
	<p>No exposure to water / splashing or it may cause electric shocks or fire.</p>
	<p>Only authorised / qualified personnel should dis-assemble, repair or rebuild this product.</p>

## TROUBLE SHOOTING

No.	Issue	Possible Cause	Possible Resolution
1	No power	<ul style="list-style-type: none"> <li>The plug is not properly connected.</li> <li>Power Cut.</li> <li>The fuse is broken.</li> <li>The machine / system is broken.</li> </ul>	<ul style="list-style-type: none"> <li>Make sure the power is correctly connected and the voltage is normal.</li> <li>Await re-connection of power / look at generator.</li> <li>Check the fuse, replace if broken.</li> <li>Call the local distributor for repair or replacement.</li> </ul>
2	Air mattress leakage / Alarm Sounding	<ul style="list-style-type: none"> <li>The mattress is not connected to the pump correctly.</li> <li>Air tube is disconnected or damaged.</li> <li>CPR not attached properly</li> </ul>	<ul style="list-style-type: none"> <li>Check the tube connectors.</li> <li>Repair the air tubes or call for replacement.</li> <li>Re-attach CPR plug</li> </ul>
3	Mattress is too hard or too soft	<ul style="list-style-type: none"> <li>The air pressure is not adjusting to required level.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the pump pressure according to the user weight until suitable and comfortable.</li> </ul>
4	No full inflation after long inflating	<ul style="list-style-type: none"> <li>Air hoses are loose or not connect properly.</li> <li>CPR is loose or not connected.</li> <li>Air pump has not enough air pressure.</li> </ul>	<ul style="list-style-type: none"> <li>Check all the air hoses and connectors.</li> <li>Connect the CPR tightly.</li> <li>Adjust the pressure on the pump. If it is showing maximum pressure full inflation has not been achieved, the pump has a problem. Ask for repair or replacement.</li> </ul>
5	Pump has strong vibration	<ul style="list-style-type: none"> <li>The pump is not located on a flat area or not hooked properly on the bedframe.</li> </ul>	<ul style="list-style-type: none"> <li>Put the pump on flat area or hook it in a suitable position on the bedframe.</li> </ul>

## COMPANY INFORMATION

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Herida Healthcare Ltd.  
Herida House  
Unit 2, Leeds 27 Industrial Estate  
Bruntcliffe Avenue, Morley  
Leeds, LS27 0LL

Freephone: +44 800 193 6030  
Email: [sales@heridahealthcare.co.uk](mailto:sales@heridahealthcare.co.uk)

Company Number: 9918019  
VAT Registration Number: 233587691



### Disclaimer

Please be aware that all products should be disposed of in an environmentally friendly & infection control manner in compliance with any local or national requirements. Contact Herida Healthcare Ltd. for responsible WEEE disposal methods.