ARJOHUNTLEIGH

Bari-Breeze

User Manual

Low Air Loss Turn Assist System

Contents

General Safety

Before you connect the system pump to a mains socket, read carefully all the installation instructions in Section 3 - Installation. The system has been designed to comply with regulatory safety standards including:

- EN60601-1:1990/A13:1996
- UL60601-1 1st Edition
- CAN/CSA C22.2 No 601.1-M90

Safety Warnings

- The cover of this product is vapour permeable but not air permeable and may present a suffocation risk. It is the responsibility of the care provider to ensure that the user can use this product safely.
- Electrical equipment may be hazardous if misused. The front and rear case of the pump unit should only be separated by authorised technical personnel.
- Do not use the pump in the presence of flammable gases such as anaesthetic agents.

Precautions

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

- Keep the pump away from sources of liquids and do not immerse in water.
- Do not expose the system, especially the mattress, to naked flames, such as cigarettes etc.
- Do not store the system in direct sunlight.
- Switch off the electrical supply to the pump by disconnecting the pump from the mains socket before cleaning and inspection.
- Ensure the system is clean and dry prior to storage.
- Never use sharp objects or electrically heated under blankets on or under the system.
- Store the pump and mattress in the protective bags supplied.
- Only the pump and mattress combination as indicated by ArjoHuntleigh should be used. The correct function of the product cannot be guaranteed if the incorrect pump or mattress combinations are used.

Caution

Electromagnetic compatibility (EMC). This product complies with the requirements of applicable EMC Standards. The use of accessories not specified by the manufacturer may result in increased emissions by, or decreased immunity of, the equipment, affecting its performance.

1. Introduction

About this Manual

This manual is your introduction to the **Bari-Breeze®** system. Use it to initially set up the low air loss system, keep it as a reference for day-to-day routines, and as a guide to maintenance.

About Bari-Breeze

The **Bari-Breeze** is designed to maintain a constant low pressure support surface.

Bolsters situated along each side of the mattress are designed to provide comfort and support for patients when the system is operating in **Turn** mode.

A single safety air pad provides protection from the effects of bottoming out.

By controlling the level of pressure in all of the cells, consistent levels of turn are achieved whilst maintaining the integrity of the support surface in contact with the patient.

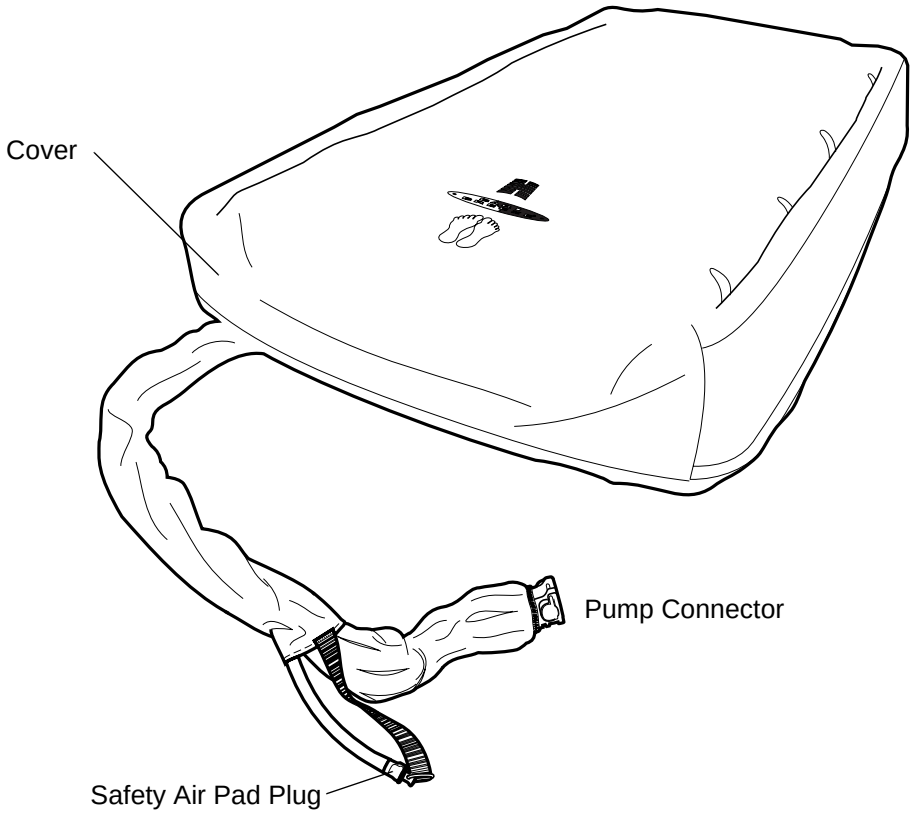
The **Bari-Breeze** pump is fully programmable and provides the following modes of operation:

- **Static Mode (Default) -** When **Turn** therapy settings are set to , the system remains flat, providing a continuous low pressure surface.
- **Turn (Rotation) Mode** - Provides an angled support surface to assist with nursing procedures.
- **Firm Mode (Maxflow)** - Provides a firm support surface (for 15 minutes) to facilitate nursing procedures and/or patient handling.

The **Bari-Breeze** cover is water resistant and vapour permeable to enhance patient comfort whilst protecting the cells from ingress of contaminants. The cover is simple to clean in situ, but may easily be removed for laundering, preventing cross contamination.

In the event of cardiac arrest the mattress replacement can be easily deflated to allow cardiac resuscitation procedure (CPR) to be performed.

Bari-Breeze Mattress



A self contained mattress replacement system with easily detachable components for cleaning.

Cells 21 polyurethane cells approximately 200mm (8”) high providing support to the patient.

Tubeset Manufactured from material to reduce accidental kinking.

Tubeset Connector/CPR Located at the pump end of the tubeset is a specially designed twin snap lock connector. This design helps prevent accidental disconnection of the mattress from the pump. Releasing the connector allows the air to escape from the cells in approximately 10 seconds to facilitate CPR.

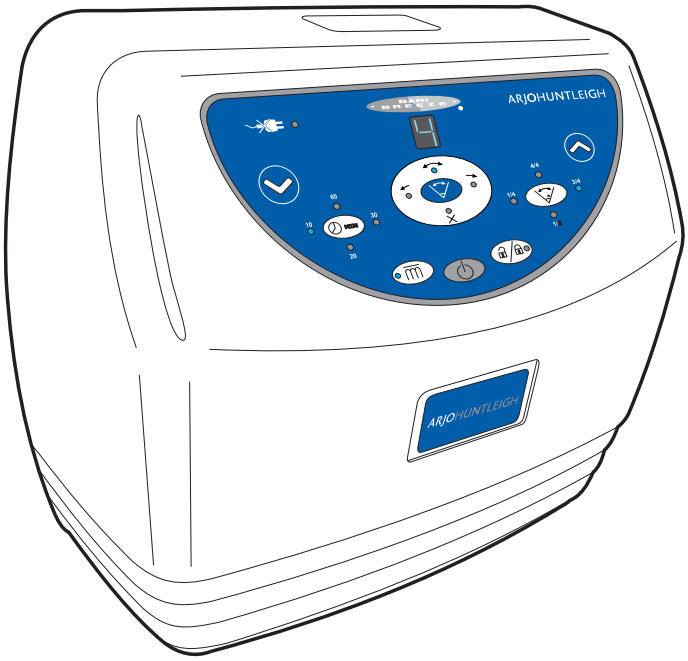
Cover The mattress is totally enclosed in a double zipped cover. The top and sides of the cover are constructed from a two-way stretch and water resistant material, which is vapour permeable for maximum patient comfort. The base of the cover is constructed from a tough abrasion resistant material and is fitted with bed attachment straps.

Safety Air Pad A 50 mm (2”) thick sub-mattress made of a single air-filled cell enclosed in the base to support the patient in the event of loss of air pressure in the mattress.

Bolsters Two safety side air bolsters provide comfort and support during **Turn** mode.

Safety Air Plug The safety air plug is used to deflate both the side bolsters and safety air pad. It is located close to the tubeset/pump connector.

Bari-Breeze Pump



Mounting Hooks Integrated mounting hooks fitted to the rear casing allow easy positioning of the pump from the bed foot rail.

Keypad The keypad is angled to provide the user with a clear visual display. An LED display and individually illuminated control buttons give precise indications of the status of the system at any point in time.

LED Display Highly visible and bright 7 segment blue LED digital display panel.

2. Clinical Applications

Indications The **Bari-Breeze** system is indicated for patients weighing between 22-455Kgs (50-1000 lbs), including those assessed to be at high risk of developing pressure ulcers and for all grades of pressure ulcer up to and including grade 4 (EPUAP, 1998)[1] for Europe, (NPUAP, 1989)[2] for USA.

Contraindications Patients with unstable spinal fractures should not be placed on the **Bari-Breeze** system.

Precautions for Use In the case of patients with unstable fractures advice should be obtained from the appropriate physician before using the **Bari-Breeze** system.

☞ *A risk assessment tool combined with clinical judgement should be used when determining a patient's level of risk of developing pressure ulcers. Patient risk assessment should be an ongoing process as changes in the patient's condition may increase or decrease their risk level.*

☞ *The above are guidelines only and should not replace clinical judgement or experience.*

1. *European Pressure Ulcer Advisory Panel (1998). Pressure Ulcer Treatment Guidelines, British Journal of Nursing 7(r5):888-9.*
2. *National Pressure Ulcer Advisory Panel (1989), Clinical Practice Guideline, Number 3, AHCPR, US Department of Health & Human Services, 1992.*

3. Installation and Setup

Warnings The following warnings should be taken note of before installing the **Bari-Breeze** system.

WARNING

The Bari-Breeze system must be installed on bed frames that are equipped with Safety Sides. Please raise safety sides on the bed and lock them in position after the patient is on the mattress.

NEVER LEAVE A PATIENT UNATTENDED ON THE MATTRESS SYSTEM WITH THE SAFETY SIDES IN THE DOWN POSITION.

WARNING

Never use sharp objects or electrically heated underblankets on or under the mattress.

WARNING

Make sure that the mains power cable is positioned to avoid causing a hazard and is clear of moving bed mechanisms or other possible entrapment areas.

Installation The following components should be found within your **Bari-Breeze** packaging:

- **Bari-Breeze** Mattress Replacement
- Pump
- User Manual
- Power Cord

1. Before using the **Bari-Breeze** mattress replacement system, please remove all other mattress systems from the bed.
2. When installing the **Bari-Breeze** mattress, care should be taken such that the mattress is placed directly on the bed frame.

☞ *Make sure that the tubeset end of the mattress is towards the foot end of the bed.*

3. There are ten nylon black straps with buckles, on the base of the mattress. Loop each strap around the bed frame and fasten it securely to the bed frame using the buckle.

☞ *If the bed can be profiled to any position (i.e. raised or lowered), attach the mattress to the movable parts of the bed only.*

4. Open the hooks on the back of the pump and suspend the pump from the bed foot rail. If the bed you are using does not have a foot rail, place the pump on its base (not on its back where the filter is located) on a flat surface underneath the bed near the foot of the bed frame.

☞ *Care should be taken such that the air inlet vent on the pump is not covered, and the pump is not placed on the floor in such a manner that it is a hazard.*

5. Plug the power cord into the pump and press it in place. Uncoil the power cord and plug the cord into a properly grounded AC power source.
6. Securely attach the pump connector onto the pump until it clicks, and make sure the side bolster and safety air pad plug is secure.

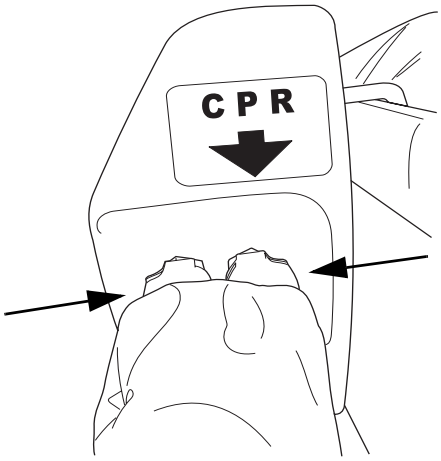
☞ *Care should be taken such that the mattress hose is freely suspended without being pinched or kinked.*

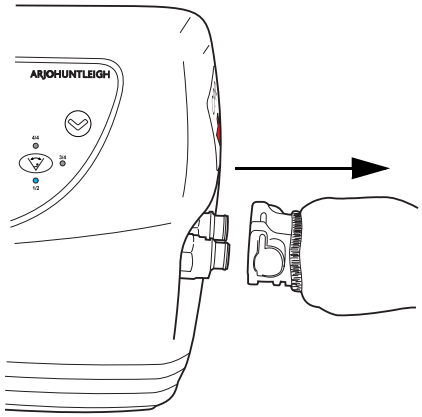
7. If not already fitted, place the protective cover over the mattress and secure in position. Make sure the **ArjoHuntleigh** logo is uppermost and at the foot end of the mattress.
8. Push the Power/Standby button to turn the pump on and enter the required therapy settings, see “Controls, Alarms and Indicators” on page 9.
9. Unzip the cover and ensure the cells, side bolsters, and the base pad are all fully inflated. Refit cover.
10. Place a bed sheet loosely over the mattress before use.

4. CPR Facility

IMPORTANT

In the event of cardiac arrest, depress the two release catches on the tubeset/pump connector, and at the same time pull the tubeset out and away from the pump.





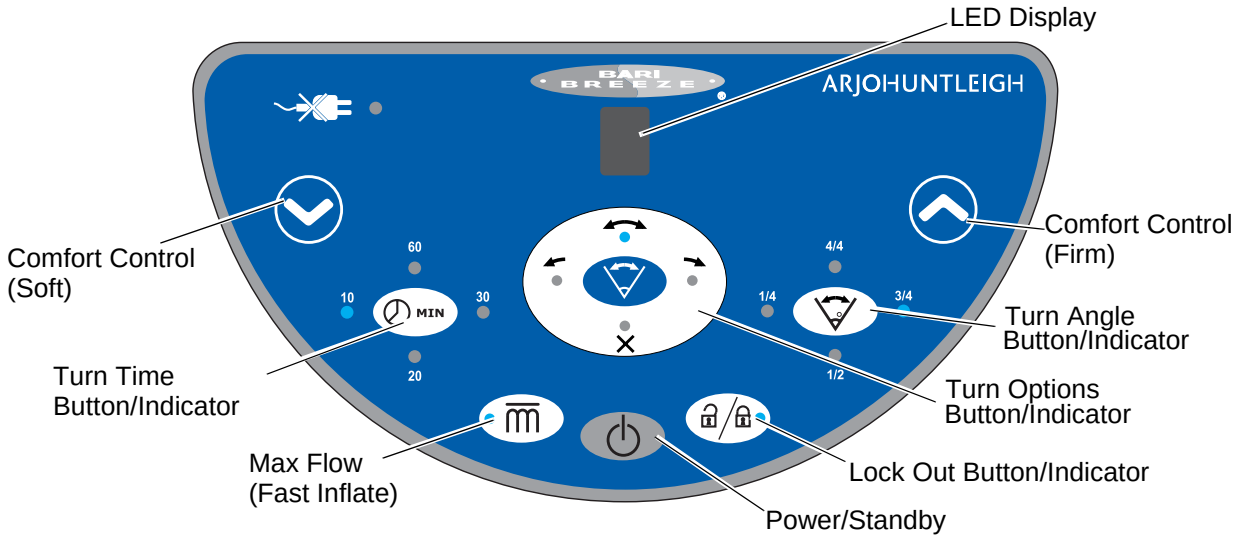
Located on the right hand side of the pump is a CPR device marked with an arrow. In the event of cardiac arrest, press the two quick release catches on the tubeset/pump connector, and simultaneously pull the hose away from the pump.

To reinflate the mattress

1. Switch the pump into standby mode and reconnect the tubeset and safety air pad plug if removed. Switch the pump on and reset the therapy settings.

5. Controls, Alarms and Indicators

Controls and Indicators



Standby

When the pump has power but is in Standby mode, the 7 segment LED display will show a single bar.

Power/Standby

Press the Power/Standby button to turn the pump on.

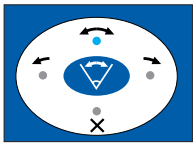
Max Flow

Press  to enable maximum air flow from the pump. A blue LED on the button will indicate that **Max Flow** is active. When used during mattress installation, the mattress will inflate to its normal size within 60 seconds.

If **Max Flow** '**F**' is selected when the system is operating in **Turn** mode then **Turn** mode will be deselected and the indicator will show  .

☞ *Unless deactivated, Max Flow will remain active for 15 minutes. After this, the comfort level will revert to the previous setting, and remain in Static mode.*

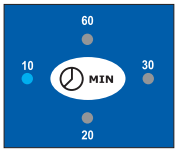
Turn Options



The  button selects the turn settings of the mattress. Each press of the button selects the next setting. For instance, to change the mattress from **Bi-lateral Turn** () to **Static** () position, press the button twice until is selected.

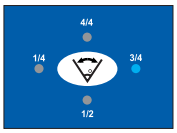
In **Left Turn** () mode the right air cushions in the mattress will be held at a constant high pressure, and the left air cushions will be held at a constant low pressure. This process is reversed for the **Right Turn** () mode. When  is selected, the system will alternate between left and right turn, stopping in the central (dwell) position. During this time the display will show '**d**'.

Turn Times



The time selected for the turn is the amount of time (in minutes) the mattress will remain in each position during the selected turn sequence.

Turn Angle



Four settings are available to select the amount of turn given to the patient. These are selected using the turn angle button , where 4/4 is equal to approximately 40 degrees.

Comfort Control Level

These controls adjust the firmness of the mattress. Using the button reduces the pressure setting, and the button increases it.

The current comfort level (1-9) will be displayed in the LED display.

Lock Out

Pump functions (including power/standby switch) can can be locked out to prevent unintentional change of modality / cell pressures. To activate, press the lock button for approximately 2-3 seconds until the blue LED illuminates. To deactivate, press and hold the lock out button until the LED turns off.

Alarms

Power Fail

In the event of a power fail situation, the pump will alert the carer by flashing the amber **Power Fail** LED and sounding the buzzer. Once the power is restored to the pump the alarm will cease and the pump will return to its previous operating settings.

Low Pressure

In the event of hose disconnection, an '**L**' and '**P**' will alternate on the LED display (representing "Low Pressure") while the buzzer sounds to alert the carer to the alarm condition. Once the hose is reconnected, the alarm will cease and the pump resume its previous therapy settings.

6. Operation

Before using the **Bari-Breeze** mattress system, make sure it has been installed correctly in accordance with “Installation and Setup” on page 6, and ensure that the side bolster and base plug is secure in the connector at the foot end of the mattress.

Initial Power Up

Press the power/standby button to turn the pump on. An audible beep will sound and the current comfort level, turn time, turn mode, and turn angle will be displayed.

☞ *These may reflect the therapy settings that were applied last time the system was in use.*

Comfort Controls

Once the mattress is fully inflated and with the patient in position, adjust the comfort controls to the desired level.

Perform a four finger check as follows:

Place four fingers between the air cushions directly underneath the sacral region of the patient's body.

☞ *There should be a minimum of 4 finger width clearance between the bottom of the patient and the safety air pad.*

Recommended Pressure Settings

For extra firm support during patient handling or nursing procedures, it is recommended to set the mattress pressure to maximum by pressing **MAX FLOW (** ).

When the patient is to be placed in the gatched position, it is also recommended to press the  button to ensure the patient does not bottom out.

In the case of a patient who has an above average weight to height ratio, it is recommended to *increase* the pressure/comfort level accordingly.

Static Mode

Max Flow

Pressing the  button sets the blower to maximum flow, fully inflating the mattress overriding the comfort control. This feature is only available in static mode. If pressed during **Turn** mode, it will revert the system to **Static** mode and return the patient to a central position. Comfort settings however, are retained.

Max Flow inflates the mattress to maximum pressure for 15 minutes, and this will be indicated by a blue LED and an ‘**F**’ being shown in the LED display.

To cancel **Max Flow** and to enter **Turn** mode settings, press the button once. To continue **Max Flow** for more than 15 minutes, press once to cancel, and quickly again to enter **Max Flow** for a further 15 minutes. After 15 minutes, **Max Flow** is automatically cancelled.

☞ *For extra firm support during patient addition/removal, wound care, patient turning, or patient hygiene procedures, it is recommended to set the mattress pressure to max by pressing button.*

Turn Options

Uni-Lateral Turn To enter uni-lateral **Turn** mode, press the button to cycle through until or is indicated, this is confirmed by the illuminated blue LED.

Bi-lateral Turn To enter bi-lateral **Turn** mode, press the button until is indicated, this is confirmed by the illuminated blue LED.

☞ *Selecting **Max Flow** will cancel any **Turn** options set, resulting in the system returning to the* **Static** *( ) setting.*

Turn Times To set therapy turn times, press the MIN button until the desired time is indicated, this is confirmed by the illuminated blue LED.

☞ *Turn times are only considered when the pump is operating in **Turn** mode.*

To Deflate and Store the Bari-Breeze Mattress

To deflate the* Bari-Breeze *mattress:

1. Activate the CPR control to deflate the mattress.
2. Remove the side bolster and safety air pad plug from the connector on the mattress hose assembly.

To store the mattress Following deflation:

Roll the mattress from the head end toward the foot end, ensuring the tubeset lies safely within the mattress.

7. Decontamination

The following processes are recommended, but should be adapted to comply with the local or national guidelines (Decontamination of Medical Devices) which may apply within the Healthcare Facility or the country of use. If you are uncertain, you should seek advice from your local Infection Control Specialist.

The **Bari-Breeze** system should be routinely decontaminated between patients and at regular intervals while in use; as is good practice for all reusable medical devices.

WARNING

Remove the power cord from the mains supply before cleaning and decontamination.

Caution

Do not use Phenol-based solutions or abrasive compounds or pads during the decontamination process as these will damage the surface coating. Do not boil or autoclave the cover.
Avoid immersing electrical parts in water during the cleaning process.

During Use ***It is recommended that were practical, all parts of the system (including mattress, top cover, pump, and tubeset) should be cleaned weekly whilst in use.***

To clean Wipe all exposed surfaces with a cloth which has been moistened in simple detergent and water. Ensure to remove any organic debris that may be adherent to the surfaces. Dry.

To disinfect Wipe all ***cleaned*** surfaces with a solution which contains a chlorine-releasing agent diluted up to a strength of 10,000 parts per million (depending on local policy): an example is *sodium hypochlorite*. Dry.

Alternatively use a cloth moistened with alcohol (70%) and allow to air dry.

Laundering The mattress cover can be easily unzipped for complete removal to allow laundering at 65°C for 10 minutes or 80°C for 3 minutes to achieve thermal disinfection. This complies with HSG (95) 18 Hospital Laundry arrangements for used and infected linen (UK) 1995.

DO NOT TUMBLE DRY COVERS ABOVE 30°C.

8. Troubleshooting Guide

The following table contains fault symptoms, their possible causes and suggests steps to rectify the problem. These may occur during initial installation and power up.

Symptom	Possible Cause	Check	Action
Pump keyboard does not respond.	**Lock out is on preventing set up.**	Lock out button LED illuminated.	Press and hold the lock button until the LED extinguishes.
Mattress does not inflate when the system is switched on.	**Pump is left in standby mode, indicated by a single dash on the LED display.**	If the pump is plugged into a power socket, a dash will be visible on the LED display to indicate standby mode. Check status of LED display.	Turn on the pump unit. If the LED display is blank, check integrity of power supply at the wall socket.
	Blower failure within pump unit.	Check to ensure blower is generating airflow through the manifold connector.	If blower has failed call a Service Engineer to replace the blower/pump unit.
Mattress inflates but appears to be noisy as if a leak has appeared in the tube-set connection with the pump.	**Hose-set connection not correctly fitted.**	Check to ensure the hose connector clicks into place.	Re-connect hose connection to pump, ensuring firm fitment.
	Bolster/Sub-Mattress plug not fitted correctly or failing.	Check plug is fitted correctly in hose manifold. Check integrity of plug.	Ensure plug is firmly located. Replace if neccesary.
Mattress inflates but doesn't appear to turn.	**No turn angle set.**	Therapy Settings.	Set **Turn** angles.
	Firm inflate activated.	**Maxflow** LED illuminated.	Press the  button to deactivate, and enter required therapy settings.
	Dwelling in centre (check turn time).	Check status of LED display.	If LED display is illuminated with '**d**' mattress is dwelling.
Mattress inflates but only appears to turn to one side.	**Therapy is set for left or right turn only.**	Ensure bilateral therapy setting has been set.	Enter **Bi-lateral** therapy settings.
	Both setting may not be illuminated.	For bilateral turn ensure  is activated (LED illuminated).	If not, press  to select  and ensure the LED illuminates.
Mattress turns but then suddenly stops mid cycle.	**Maxflow activated.**	LED display showing '**F**'.	Press the  button to deactivate, and set turn angles.
	Dwelling in centre (check turn time).	Check status of LED display.	If LED display is illuminated with '**d**' mattress is dwelling.

Symptom	Possible Cause	Check	Action
Mattress appears to be bottoming out.	**Comfort Control Settings too soft.**	Assess comfort control settings.	Adjust as necessary.
	Patient Weight.	Check patient weight is within limit for system.	Refer to User Manual. Page 4 Indications.
Blower Unit Sounds noisier than usual.	**Air leak from manifold.**	Check connections.	Remove connection, and reconnect.
	Loose hose connector.	Check connections in tubeset connector.	Reconnect if possible, otherwise call Service Engineer.
	Torn or damaged cell.	Check.	Call service engineer to replace damaged cell.
Blower motor inside pump sounds excessively noisy during continuous use.	**The blower inside the pump unit may be approaching the end of its life.**	Check to ensure the mattress is fully inflated.	Call service engineer to request a replacement pump unit (if rental system).
Mattress appears to ignore therapy settings	**Pump is not responding to therapy settings.**	Check.	Reset Pump and re-enter therapy settings.

9. Spare Parts

To order spare items, please contact your distributor quoting the appropriate codes as shown below:

Pump	
Order Code	Description
647301	UK Bari-Breeze Pump
647303	USA Bari-Breeze Pump
647304	Euro Bari-Breeze Pump
647309	ROW Bari-Breeze Pump

Mattresses	
Order Code	Description
647311	Bari-Breeze Mattress (84” x 42”)

Mattress Covers	
Order Code	Description
647321	Bari-Breeze Mattress Cover (84” x 42”)

10. Warranty and Service

ArjoHuntleigh's standard terms and conditions apply to all sales. A copy is available on request. These contain full details of warranty terms and do not limit the statutory right of the consumer.

For service, maintenance and any questions regarding this, or any other **ArjoHuntleigh** product, please contact:

For the UK:

Huntleigh Healthcare Ltd
310-312 Dallow Road
Luton
Bedfordshire, LU1 1TD

Tel : +44 (0) 1582 413104
Fax : +44 (0) 1582 459100

For the USA:

Huntleigh Healthcare L.L.C.
40 Christopher Way
Eatontown
New Jersey 07724-3327

Tel:(800) 223-1218
Fax:1-732-578-9889

11. Technical Data

Pump		**647301 - UK Bari-Breeze Pump**
Supply Voltage:		100-240V
Electrical Rating:		50/60 Hz
Size:	Width:	33.5cm (13”)
	Height:	28.5cm (11”)
	Depth:	14cm (5.5”)
Weight:		4.5kg (10lb)

Mattress		**647311 - Bari-Breeze Mattress**
Size (Inflated):		
	Width:	106cm (42”)
	Height:	29cm (11”)
	Length:	213cm (84”)
Weight:		9kg (20lb)

Electrical Safety Standards

Complies with:	EN 60601-1:1990/A13:1996
2003311	UL60601-1 1st Edition, CAN/CSA C22.2 No 601.1-M90
	Medical Equipment
Degree of protection against electric shock:	Class I,Type BF
Degree of protection of ingress of fluids:	Ordinary IPx0 (not protected)
Mode of operation:	Continuous

Pump Symbols

 Dangerous Voltage

 Refer to User Manual

 Type BF

S/N: Serial Number

 Do not dipose of in a dustbin

 Alternating Current

Environmental Conditions

Operating

Temperature range:	+10°C to +40°C
Relative humidity:	30% to 75% (non-condensing)
Atmospheric pressure	700 hPa to 1060 hPa

Storage

Temperature range:	-40°C to +70°C
Relative humidity:	10% to 100%
Atmospheric pressure:	500 hPa to 1060 hPa
Environmental Protection:	Please dispose of this pump in accordance with local regulations.

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W: www.huntleigh-healthcare.com

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