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TurnAir

Anti-Decubitus Air Alternating Pressure Mattress System
Instructions for Use

About This Document

Congratulations and thank you for purchasing this high quality anti-decubitus system.
Please read this Instructions for Use carefully before use and observe the safety instructions and requirements for the proper operation and maintenance of the device.

Device identification

This Instructions for Use are intended exclusively for devices with the following specification:
Device name: TurnAir System
The serial number is shown on the label on the rear of the control unit and on the tag sewn on the mattress.

Validity of the documentation

This manual describes the TurnAir System. It is part of the device documentation. Do not pass this device to a third party without this Instructions for Use.
The end page of this Instructions for Use shows the current document edition.

Subject to change

The contents of the Instructions for Use may be updated by the manufacturer at any time without prior notice.

Translations

The English version of the Instructions for Use is authentic. In the event of any clarification, question or dispute as to the content of any translation of the Instructions for Use, the English version shall prevail.

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About This Document

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If the user or/and patient occur any serious incident in relation to the device should be reported to Carilex and European Authorized Representative immediately.

For Support or Complaints

If you have any questions or concerns about the device or need accessories, please contact the distributor that delivered the device to you or your patients.

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1 Important Notes for Safe Use

1.1 Designation of the Groups of Individuals

The named groups of persons in this Instructions for Use are as follows.

1.1.1 Operators

An operator (surgical supplier, health insurance, clinic, etc.) is any legal person that owns and uses the TurnAir System, or on whose behalf the device is used. The operator is responsible for providing a safe device and to instruct users properly on the operation and safe use of the device.

1.1.2 Users

Users are caregivers or guardians who have undergone user education and operation training, have read the Instruction for Use , and are able to:

- Operate the TurnAir System
- Supervise patients using the device for therapy or care purposes.

Users are fully responsible for the safe and correct use of the device.

1.1.3 Professionals

These authorized persons are skilled personnel who may be employees of the operator and who:

- Have obtained knowledge through medical-technical training.
- Carry out their duties based on professional experience and in accordance with safety regulations.
- Are able to detect possible hazards during work.

In countries where activities in the medical-technical field require certification, classification of qualified personnel is subject to appropriate approvals.

1.1.4 Patients

Patients are persons in need of care and who use the TurnAir System for therapy or care purposes.

1.1.5 Lay Operator

A lay operator is a person without relevant specialized training. The lay operator should contact the manufacturer or manufacturer's representative under following conditions :

- For assistance in setting up, using or maintaining the ME Equipment System; or
- To report unexpected operation or events.

1 Important Notes for Safe Use

1.2 User Notes & Accident Prevention

1.2.1 Operation and Training

- The device must only be operated by qualified personnel.
- Users must follow the Instructions for Use.
- Initial start-up and handover must be performed by authorized personnel, with documentation confirming the user understands operation and therapeutic/care use.

1.2.2 User Responsibility and Handover

- After handover, the user is fully responsible for safe and dedicated use.
- Do not pass the device to third parties without the Instructions for Use.

1.2.3 Maintenance and Cleaning

- To ensure safety and that EMC performance is not affected, all maintenance, servicing, and replacement of detachable or interchangeable parts must be performed only by qualified service personnel or an authorized service agent.
- The battery is built-in and not user-removable or replaceable. For battery service or replacement, please contact an authorized service center.
- In clinical areas (hospitals, clinics, nursing/elderly homes), cleaning and disinfection must be carried out by qualified personnel familiar with hygiene regulations.
- In non-clinical areas, users or trained cleaning personnel may clean the device.

1.2.4 Device Check and Instructions Availability

- Before each use or transfer to a patient, the user must perform the checks in accordance with Section 4.1.
- The Instructions for Use is an integral part of the device and must be readily accessible at all times.
- If the Instructions for Use do not cover a specific issue, contact the distributor or operator for guidance.

1.2.5 Accident Prevention Reminders

- Hazards may arise if the device is operated by untrained personnel or not according to the Instructions for Use.
- Proper handover, operation, maintenance, and cleaning reduce the risk of injury or device damage.
- To protect the Patient safely during operating the device, please make sure to turn off the control unit before servicing or maintaining.

1.2.6 Reporting of serious adverse events

User should report the serious adverse events to Vigilance and post-market surveillance module at EUDAMED website https://health.ec.europa.eu/medical-devices-eudamed/overview_en and Carilex's contact window: eu@carilexmedical.com

WARNING

Do not short-circuit, crush, puncture, or dispose of the battery in fire, as this may cause explosion, fire, or personal injury.

1 Important Notes for Safe Use

1.3 Purpose of the Device

To ensure the safety of patients and users, the device must be used only for its intended purpose.

1.3.1 Intended Purpose

Anti-decubitus Air Alternating Pressure Mattresses System is designed for patients who endure pressure ulcer and potential patients who wish to reduce the likelihood of pressure ulcer. The device is intended to prevent and manage pressure ulcers by facilitating blood circulation and decreasing pressure of each tissue's contact area.

1.3.2 Intended patient populations

- Patients who endure of all categories of pressure ulcer and potential patients who wish to reduce the likelihood of pressure ulcer.
- Patient minimum weight: 30kg.
- Patient maximum weight: 180kg.

1.3.3 Use environment

The support system is intended for use in the Home Healthcare Environment and Professional Healthcare Facility Environment.

1.3.4 Indication

The therapeutic support surface system is indicated for the prevention and/or management of all categories of pressure ulcer. The use of this system allows combined with the regular repositioning, monitoring, and nursing of the patient.

1.3.5 Contraindications

Certain patient conditions are not suitable for using this type of device such as fracture of instable vertebrae and illness of instable vertebrae (include Spinal cord injury, Cervical traction).

WARNING

The use of this system is still required the regular repositioning, monitoring, and nursing of the patient. In accordance with the NPUAP/EPUAP directives, Carilex recommends that repositioning the patient every two hours. However, the determination of individualized repositioning schedule should be made based upon the patient's condition.

1.3.6 Limitations:

Patients with unstable fractures, burns, intolerance to motion, or other conditions that may be complicated by a soft or moving surface must be assessed by a treating physician before device placement and use.

1 Important Notes for Safe Use

1.3.7 Clinical benefit

The device is intended to prevent and manage pressure ulcers by facilitating blood circulation and decreasing pressure of each tissue's contact area.

⚠ WARNING

- Always consult a physician or health professional before using the AVA Cure System. Any and all applications outside of the conditions specified above are regarded as unapproved. The user and the operator respectively are exclusively liable for any damage resulting from the unapproved use.
- If existing wounds do not improve or the patient's condition changes the overall therapy regimen should be reviewed by the consult physicians.

1.4 Safety Statement

To ensure continued compliance with specifications, maintain safety, and ensure proper device operation, please follow these guidelines:

- Operate the device in accordance with this Instruction for Use to avoid electromagnetic interference or abnormal performance.
- Use only genuine accessories, parts, and materials as described in this manual. In particular, use the specified power cord.
- Avoid placing the device adjacent to or closer than 30 cm to RF communications equipment (including antennas and manufacturer-specified cables).
- If abnormal display or interruptions occur in a strong electromagnetic field, move the device away from the interference source and restart it.
- Do not operate the device under the following conditions, as they may compromise EMC performance:
  a. Component failures or error of display numerical value.
  b. Change or failure in programmable parameters if any.
  c. Initiation of any unintended operation or false audible indicator.
  d. Cessation, change or interruption of any intended operating mode.

⚠ CAUTION

- The system is not AP/APG protected.
- AVOID ELECTRIC SHOCK, DO NOT OPEN AIR PUMP!

1 Important Notes for Safe Use

1.5 Safety Information and Symbols of These Instructions for Use

The safety instructions in this Instructions for Use are marked with symbols and key words. Signal words like WARNING, CAUTION or ATTENTION designate the classification of the risk.

1.5.1 Identification of Risks of Injury

WARNING

Means a hazardous situation, which may lead to death or severe injury if it is not avoided.

CAUTION

Means a hazardous situation, which may lead to minor or severe injury if it is not avoided.

1.5.2 Identification of Material Damage

ATTENTION!

Describes a situation that could lead to property damage if it is not avoided.

1.5.3 Identification of Additional Information

NOTE!

Means application tips and useful information.

1 Important Notes for Safe Use

1.5.4 Additional Symbols to the Safety Information

Additional symbols to the safety information are those listed below

	Manufacturer		Country and date of manufacture
EC REP	Authorized Representative in the European Community	UDI	Unique Device Identifier
REF	Catalogue Number	#	Model Number
SN	Serial Number	MD	Medical Device
	Follow Instructions for Use		Caution (ISO 7000-0434A)
	Consult Instructions for Use		Type BF Applied Part
CE	The CE mark indicates compliance with European harmonized legislation		Waste Electrical and Electronic Equipment (WEEE Logo)
	Double Insulated, Class II Equipment		Importer
IP21	Protected against ingress of solid foreign objects ≥12.5mm diameter. Protected against vertically falling water drops.	71°C	Machine Wash Warm : Max. 71°C
			Do Not Iron
	Do Not Bleach		Tumble Dry Medium - Gentle Cycle
	Do Not Dry Clean		Hang Dry
	Do Not Wash		Temperature Low and High Limit
%	Humidity Low and High Limits		Fragile, Handle with Care
UP	This Way Up		Keep Away from Rain
	Use No Hooks		

2 Delivery and Environment

2.1 Delivery Inspection

Upon delivery of the device, please check the following immediately

- Completeness of the delivery
- Condition of the device and packaging
- Use caution when opening the box to avoid damaging the contents

TurnAir System is delivered with the following components

- Control unit
  Including: Control unit x 1
  Power cord set x 1
  Instruction for Use x 1
- Mattress
  Including: Mattress x 1
  Coverlet x 1

If the delivery is incomplete or the device and/or the packaging are damaged, in particular in the case of damage caused by moisture or water, you should promptly inform the carrier, as well as the supplier.

2.2 Environmental Conditions

2.2.1 Operating Conditions

- Temperature: 5°C to 40°C
- Humidity: 15% to 90%
- Atmospheric pressure: 700 hPa to 1060 hPa

2.2.2 Storage and Transport

- Ambient temperature: -25°C to 70°C
- Relative humidity: 0% to 90%
- After storage or transport, allow the device to sit at room temperature for at least 3 hours before powering on.

ATTENTION

Storage of the mattress

- Always roll the mattress, do not fold or bend.
- Do not put or store with any sharp instruments or tool with sharp tips.
- Place in plastic bag of storage.
- DO NOT expose the TurnAir System to the sunlight or the dusty environment. For long-term storage the control unit should be covered with a dust protector.

3 Device Overview, Inspection, and Warranty

3.1 Device Description

3.1.1 Principle of operation

The control unit generates air by compressor then the the solenoid valve delivers the air into the mattress through air tube inside the control unit.The mattress will perform the operation status base on the selected operation mode by control panel.The air tube from mattress connects to the air outlet to receive the air then distribute the air to air cell by manifold.

3.1.2 Control unit

The control unit controls components such as the compressor, solenoid valve, and pressure sensor through the control panel, allowing for precise regulation of the air system.

3.1.3 Mattress

The mattress consists of multiple set of air cells which work in dynamic or static mode to relief and redistribute pressure.

3.2 Inspection

Prior to each use or at the initial start-up of the control unit, the operator must verify the following to ensure the safe use of the TurnAir System.

- Verify that there are no obvious cracks or signs of damage on the control unit exterior.
- Verify that there is no moisture or water stains on the control unit surface.
- Slightly shake the equipment to determine if there are any abnormal sounds coming from control unit inside.
- Verify that there are no obstructions in the control unit air vent.

NOTE

If any component of the device or the bed is damaged, please contact the distributor.

3.3 Warranty

The supplier can ensure the safety and proper functioning of the TurnAir System only under the following conditions:

- The device is used as intended and maintained in accordance with the Instructions for Use.
- Only original spare parts or accessories approved by the manufacturer are used.
- No structural modifications are made to the device.
- Inspections and maintenance work are carried out by certified personnel according to specified time intervals.
- The expected service life of the equipment is 10 years under normal use and maintenance conditions.

4 Features

4.1 Control Panel

Power On
Press the power button to activate the system. The power key's backlight will turn on with a green LED.

Power Off
Press the power key once, and the backlight of the power key will turn off, indicating that the system is powered off.

Weight of Patient (kg)
Press − or + to adjust the patient weight setting from 30 kg to 180 kg. The weight scale is for reference only. If the mattress feels too soft or too firm, adjust the weight setting according to the individual patient's requirements.

Function and Mode Keys
Each key is equipped with a white LED backlight. The backlight will light up when entering the mode or activating the function. Conversely, the backlight will turn off when leaving the mode or deactivating the function.

Static Mode
Static Mode is a therapy in which all air cells maintain constant pressure support and maximize patient's contact area to redistribute pressure.

Dynamic Mode
Dynamic Mode is a therapy in which air cells continuously alternate in an A-B-A-B (odd and even number of air cell sets) pattern to relief pressure and increase blood flow of the patient tissue. The 3 cells at the head are always excluded from the alternating. Dynamic mode will take 10 minutes to finish a complete cycle.

4 Features

Max. Inflate
By pressing the Max. Inflate button, the system will rapidly bring the mattress to maximum steady pressure, which allows caregiver to perform the daily nursing procedures. Press this button again to stop this function or the system will automatically return to previous setting after 20 minutes.

Trun Mode function
To activate the turning mode, press the Turn Key and choose your preferred turning option. The turning mode offers three distinct mode: turn full, turn left, and turn right based on the view from the foot of the bed. (In this mode, the entire mattress is at a constant pressure.)

Turn Right
By pressing the Turn Right button, the system will gradually inflate the air cells on the right side of the mattress, gently turning the patient toward the right.

Turn Left
By pressing the Turn Left button, the system will gradually inflate the air cells on the left side of the mattress, gently turning the patient toward the left.

Turn Full
By pressing the Turn Full button, the system alternates the mattress between Left Turn and Right Turn modes in a programmed cycle.

Turn Time
Press − or + to select desired turning time. The available times are 5, 10, 20, 30, 45, 60, 75, and 90 minutes .

Big Angle
To achieve a wider turning angle, press the Big Angle button. To stop this function, press the button again and the system will return to the previous angle setting.

Panel Unlock
When there is no operation after 2 minutes, system will automatically lock the control panel. Press the Panel Unlock key 3 seconds to unlock the panel.

Audio Off
In section 4.2 Alarm Indicators, three situations that can trigger an alarm are listed. At this point, the Audio Off key can be used to silence the auditory alarm, and it will not start beeping again to avoid acoustic pollution.

4 Features

4.2 Alarm Indicators

The TurnAir System is equipped with an alarm system that helps users distinguish between three different alarm conditions: Low Pressure, High Pressure and Power Failure.

If the system detects any of these issues, the alarm indicator will flash a yellow light, and an alarm will sound. The seven-segment display will also show the corresponding message. Users can identify the current alarm status by referring to the seven-segment display. They can press the Audio Off key to silence the alarm; however, the alarm indicator will continue flashing until the issue is resolved. (For related troubleshooting methods, please refer to Section 8 on page 22-23.)

Power Failure

When the system experiences an unexpected power outage, an alarm will activate, and the power key will flash with a yellow backlight.

Low Pressure

Indicates that the internal pressure of mattress is too low.

High Pressure

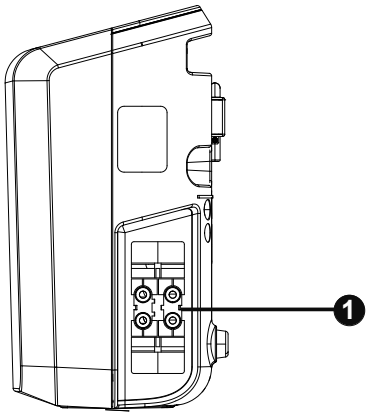
Indicates that the internal pressure of mattress is too high.

4 Features

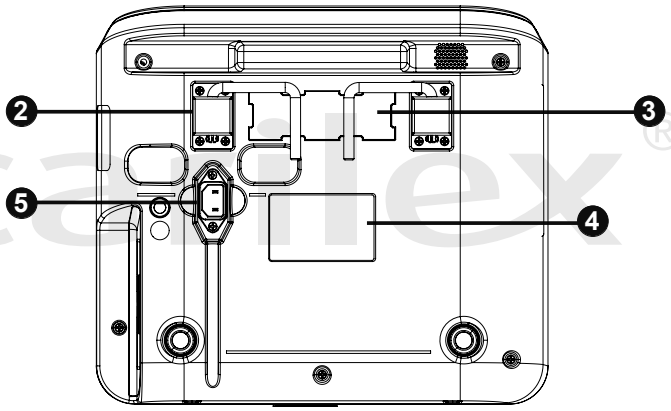
4.3 Side Panel

Air Outlet (1)

Quick couplings enable a rapid and firm connection between the mattress and the control unit.



4.4 Rear Panel



Hanger Hooks (2)

The hooks are designed to fit with multiple footboard widths. They are spring-loaded and fold away on the back panel when not in use.

Air Filter (3)

Monthly inspection and cleaning of this filter are recommended. Inadequate maintenance may lead to equipment failure or reduced service life.
Always use the standard filter supplied by Carilex when replacing the filter.
It is recommended to inspect and clean the air filter regularly. For cleaning instructions, refer to Section 7.4.

Label (4)

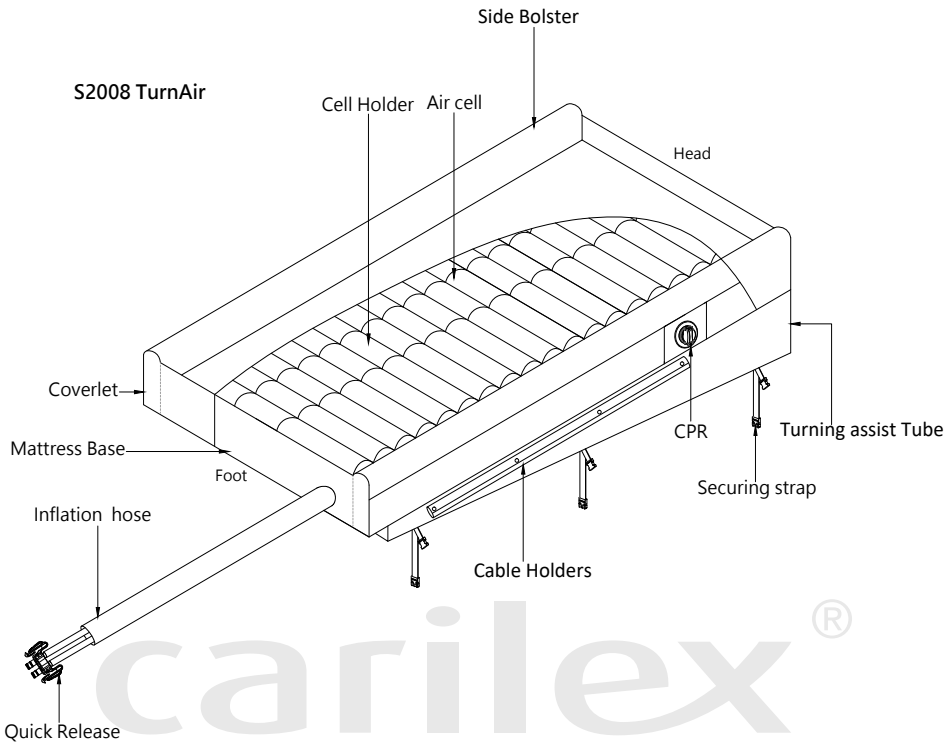
This label includes all the information for medical device and safety requirements.

Power Receptacle (5)

Three pin IEC 60320 C18 AC inlet to accept power cord set with C17 connector.

4 Features

4.5 Mattress Diagram



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5 System Installation, Operation

5.1 System installation

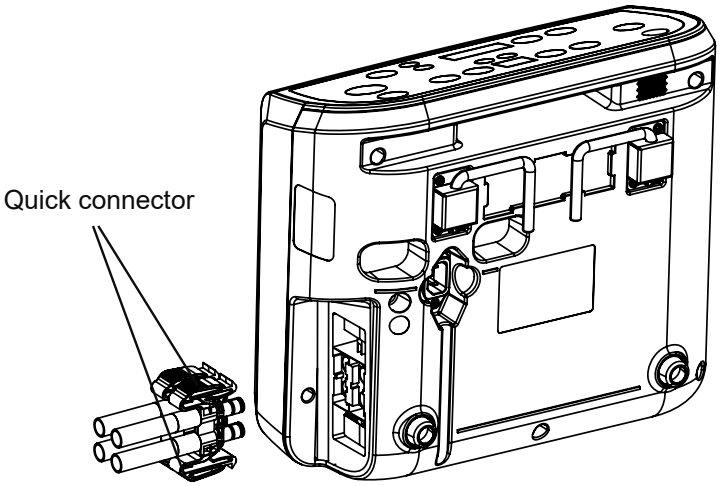
(1) Select the proper bedframe size:
- Ensure that the mattress size matches the bedframe to avoid improper fitting.

(2) Prepare the bedframe:
- Remove the existing mattress.
- Place the bedframe in the supine (flat) position.

(3) Install the mattress:
- Place the mattress on the bedframe with the logo at the foot of the mattress.
- Fasten the mattress using the straps, ensuring:
  - The mattress is securely attached to prevent sliding or shifting.
  - The bedframe's functions and movements are not impeded.
- Check that the mattress does not interfere with the adjustment mechanism of the bedframe.
- Lay an additional bed sheet between the coverlet and the patient to avoid the patient indirectly contacting the coverlet.
- Ensure that the straps between the coverlet and the mattress base are properly fixed to minimize wrinkles that could increase friction and shear forces during patient movement.
- Ensure no points, springs protruding from mattress which may pierce the air cells.

(4) Connect the control unit:
- Confirm that the power cable, control unit plug, and power supply housing are undamaged, then insert the power cord into a wall outlet.
- Hang the control unit at the foot of the bedframe using the hanger hooks, ensuring it is securely fixed.
- Secure the power cord inside the cable holders to prevent it from obstructing operators, hindering the movement of the bedframe, or getting caught between the side rails.

(5) Connect the mattress to the control unit:
- Connect the quick coupling of the mattress to the air outlet of the control unit.
- Ensure the air hoses are routed without bends, kinks, or pressure points.



5 System Installation, Operation

(6) Final check:

- Follow the user manual to ensure all installation steps are correctly completed.
- Perform all checks to guarantee the safety and functionality of the system.

CAUTION

- During the use of the TurnAir System, medical and nursing staff, as well as caregivers, must regularly check the patient's skin to prevent irritation from prolonged contact with the mattress or other accessories, and the system does not replace the need for patient repositioning and changes of posture whenever possible.
- Installation mistake with mattress that will lead loss of functionality, to increase the risk associated with pressure ulcers. Please install the system properly.

5 System Installation, Operation

5.2 Operation

(1) Turn the control unit on and allow the mattress to fully inflate. After initial inflation is complete, position the patient on the mattress according to local patient care guidelines.Ascertain that the patient's weight does not exceed the weight allowed on the bedframe.Ensure the patient is centered on the mattress, with equal distance from both the left and right edges. The patient’s head should be properly positioned so that it rests fully on the head air cells.

(2) Select the appropriate weight setting on the control panel. If the mattress seems too soft or too rigid, please adjust the weight setting to conform to each patient's requirements. Please adjust the setting one click at a time, and allow time for the mattress to stabilize at each setting before adjusting again.

(3) Ensure to select the appropriate therapy mode and cycle time, according to the physician’s decision.

(4) IMPORTANT:
Regardless of the type of coverlet supplied, ensure that it is securely fastened to the bottom of the mattress.

5.3 CPR

The CPR function is activated via a circular valve located on the right side of the mattress (torso area). To initiate the Cardiac Pulmonary Resuscitation procedure, rotate the valve to deflate the mattress rapidly. For faster deflation, also turn off the control unit by pressing the Power button. This well-marked, integrated valve prevents accidental activation while allowing for single-handed, quick-rotation operation in emergencies.
To resume normal operation, ensure the CPR valve is fully closed, then press the Power button on the control unit.

⚠ CAUTION

- Improperly routed power cords, wires, or tubing may cause tripping, strangulation, or asphyxiation, leading to serious injury. Always use proper cable management and keep children away from extra-long cords or tubing.
- Do not use the system near open flames or heat sources, as smoke may damage internal components, and keep the TurnAir System out of reach of children.

⚠ WARNING!

- Always raise and secure the safety side rails when leaving a patient. Ensure no gaps exist between the bed frame, side rails, and mattress that could trap the patient or cause injury.

6 Transfer and Transport of Patient

6.1 Transfer

To ensure patient safety and facilitate movement during transfer (moving the patient on or off the bed), please follow these steps:

(1) Prepare the Mattress:
- Activate Max Inflate: We recommend using the Max Inflate mode to firm the mattress to maximum pressure. This provides a stable surface for the patient.

(2) Manage Side Bolsters:
- Deflation for Transfer: To clear the path for movement, deflate the side bolster tubes on the exit side according to the instructions on the label.
- Inflation for Safety: Once the patient is safely back on the bed, immediately re-inflate the side bolsters according to the label instructions. These bolsters are essential to prevent accidental falls.

CAUTION: Always verify that the side bolsters are fully inflated and the mattress is returned to the appropriate therapy mode after the transfer is complete.

6.2 Transport

Activate Max Inflate mode to firm the mattress to its maximum pressure. Once fully inflated, power off the control unit and disconnect the quick coupling from the air outlets. Immediately secure the quick connector cover to the mattress connector to seal the air; this will maintain inflation for up to 15 hours.

Once the transportation phase is complete, reconnect the mattress to the control unit and follow Section 5.2 to resume normal operation. It is not necessary to move the patient from mattress during the reinflating maneuver.

7 Cleaning and Disinfection

7.1 General Guidelines

- Always unplug the power cord before cleaning or disinfecting to avoid electric shock.
- Do not immerse the control unit in water or any liquid.
- Use a soft cloth dampened with mild detergent or approved disinfectant.
- Avoid strong solvents, abrasive cleaners, or high-pressure water sprays.
- Always wear gloves and protective equipment during cleaning.

7.2 Control Unit

7.2.1 Cleaning

(1) Wipe the exterior with a soft cloth dampened with a mild, neutral detergent and water.
(2) Remove any dust or dirt around air filters and vents.
(3) Dry all surfaces completely with a clean soft cloth.

7.2.2 Disinfection

(1) Wipe with 75% alcohol or 1000 ppm sodium hypochlorite using a clean cloth.
(2) Allow the surface to air dry completely before reuse.

7.3 Mattress

7.3.1 Cleaning

(1) Wipe off dirt with a soft cloth dampened with a mild, neutral detergent and water.
(2) Wipe cleaned areas with soft dry cloth.
(3) If heavily soiled, the coverlet may be machine-washed using a commercially available detergent.
(4) Always follow the treatment on the washing instruction label.
(5) Thoroughly dry the coverlet after washing, ensuring that no moisture remains in folds or creases.

7.3.2 Disinfection

(1) Wipe with 75% alcohol or 1000 ppm sodium hypochlorite using a clean cloth. (This method is not applicable to Aeotex coverlet.)
(2) Ensure full coverage, especially at seams and high-contact areas.
(3) Allow to air dry fully before reuse.

7.4 Air Filter – Cleaning

To maintain peak performance, clean the air filter regularly or replace it when dirty.

(1) Wipe cleaned areas with soft dry cloth.
(2) Remove the air filter from the rear panel.
(3) Clean the dust off with an air duster (or a soft brush) or install a new filter.
(4) Ensure the filter is completely dry and clear before reinserting.

CAUTION!

- To prevent cross-contamination, the System must be cleaned and disinfected between patients. Any contaminants should be disposed of according to local or facility biohazard waste guidelines.
- Do not mix disinfectant (e.g., alcohol and chlorine).
- The coverlet must be replaced if its water-resistant properties are lost.

8 Troubleshooting

Problem	Control Procedure	Possible Solution
1.) Low pressure alarm The unit will indicate the specific air cell that triggered the low-pressure alarm, allowing for quick inspection.	1.1) Verify that the quick coupling is correctly connected to the air outlets of control unit.	1.1) Firmly connect the quick coupling.
	1.2) Verify that the CPR latch/valve is correctly closed.	1.2) Firmly close the CPR latch/ valve.
	1.3) Verify that air flows freely through the tubes and the mattress manifold. Check for any cuts, blockages, breakages, or abnormal air loss from the mattress.	1.3) If the tubes or the manifold are kinked or twisted, reposition them. In case of cuts or rips, replace the air cells or hoses. Replace any components with abnormal air loss using authentic replacement parts.
2.) The patient sinks into the mattress.	2.1) Check the weight setting on the control unit.	2.1) Increase the patient's weight setting until the correct support pressure is achieved.
	2.2) Check the air filter.	2.2) Clean or replace the air filter.
3.) High pressure alarm The unit will indicate the specific air cell that triggered the high-pressure alarm, allowing for quick inspection.	3.1)The internal components may be malfunctioning.	3.1) Restart the system after shutting it down to verify normal operation. 3.2) If the high pressure alarm reoccurs, immediately shut down the system. 3.3) Contact the authorized distributor for technical service.
4.) Power failure alarm	4.1) Verify that the power cord set is plug into the proper socket.	4.1) Insert the power cord set of control unit into an appropriate socket and turn the power on.
	4.2) Verify that the power cord set is properly connected to the control unit.	4.2) Insert the power cord set into the control unit and turn the power on.
	4.3) Verify that the power cord set is not damaged.	4.3) Replace with a functioning power cord set.
	4.4) The control unit is not responding to the control procedures listed above.	4.4) Contact the authorized distributor for technical service.

8 Troubleshooting

Problem	Control Procedure	Possible Solution
5.) The control unit cannot power on.	5.1) Verify 4.1~4.4	5.1) Contact the authorized distributor for technical service.

If the troubleshooting procedures do not return the system to normal performance, stop using the system immediately and contact the authorized distributor for technical service.

NOTE

- The above alarm scenarios are categorized as medium priority according to IEC 60601-1-8.
- Low pressure and high pressure alarm will be triggered 1 minutes after the alarm condition occurs, and power failure alarm will be triggered without delay.
- The Sound Pressure Level ranges from 60 – 69 dBA, measured at a distance of 1 meter from the alarm speaker.

CAUTION

- Using different alarm presets for the same or similar equipment in any independent area poses potential hazards.
  If the power supply fails unexpectedly while an alarm is active, the alarm state will be reset upon power restoration.

9 Technical Data

The TurnAir System is suitable for continuous operation.

Control unit

Model SR377
Dimensions(W x H x D).....35.4 x 31.2 x 17.2cm
Weight.....5.3Kg
Electrical Rating.....100-240Vac 50/60Hz 1.5-0.8A
Power Consumption.....Max.40W (normal operation)
Fuse Rating.....T2.5A 250V
Electrical Class .....Class II
EMI Class by CISPR 11.....Class B
Applied Part.....Type BF mattress
IP Code IP22
Replaceable Battery Type..... NiMH Battery Type AAA600, rated 3.6Vdc, 600mAh
Compliant with Regulation (EU) 2023/1542 — Portable Batteries

This system is not AP / APG protected.

EMC & Safety Certified Standard
Safety: IEC/EN 60601-1_v3.2
AS/NZS IEC 60601.1: 2015/A1:2022
EMC: IEC/EN 60601-1-2_v4.1
HomeCare: IEC/EN 60601-1-11_v2.1
Alarm: IEC 60601-1-8_v2.0

Mattress

Min. Patient Weight 30Kg
Max. Patient Weight 180Kg

Material of Air Cells .....Nylon with TPU lamination material

The TurnAir System must be decontaminated before disposal.
Disposal of old electrical and electronic equipment - valid in the European Union: WEEE Directive 2012/19/EU.

This symbol indicates that the product and its battery must not be disposed of with household waste. Please take them to appropriate collection points for recycling in accordance with local regulations.

9 Technical Data

Mattress	
Device Item	S2008 TurnAir
Article number	S2008-2010 S2008-2020
Mattress size& Coverlet size	S2008-2010/90x200cm S2008-2020/107x200cm
Coverlet material	VTX: 100% Polyester Jersey
Coverlet MVTR	500g/24H/M^2
Coverlet Wash Condition	Coverlet need to be water repellent- 3000mm/ H_2O after 1.5Hrs*40 wash
Base material	100%PVC with Webnet base
Air cell material	Nylon+PU
Air cell height/number	5" / 18 cell
Protection unit	6mm PE Foam
CPR Time	≤ 19 seconds (in normal) ≤ 48 seconds (in turn mode with BA)
Max Weight Capacity	180 kg
Weight of Mattress Set	S2008-2010/10kg±2 S2008-2020/11kg±2

10 EMC Declaration

Declaration of Conformity

For EN 60601-1-2 (4.1th Ed.)

Company Name:	**Carilex Medical, Inc.**
Company Address:	**No. 77, Keji 1st Road, Guishan District, Taoyuan City 33383, Taiwan, R.O.C.**
Product Name:	**Carilex TurnAir Pump**
Model No.:	**SR377**
Series Model:	**--**
Report Number:	**ETC 25-11-RBO-053**
Power Supply:	**100-240Vac 50/60Hz 1.5-0.8A**

Recommended separation distances between portable and mobile RF communications equipment and the ME equipment

The Carilex TurnAir Pump is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Carilex TurnAir Pump can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Carilex TurnAir Pump as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d=\left[\frac{3,5}{V_1}\right]\sqrt{P}$	80 MHz to 800 MHz $d=\left[\frac{3,5}{E_1}\right]\sqrt{P}$	800 MHz to 2.5 GHz $d=\left[\frac{7}{E_1}\right]\sqrt{P}$
0.01	0.1	0.1	0.2
0.1	0.4	0.4	0.7
1	1.2	1.2	2.3
10	3.7	3.7	7.4
100	11.7	11.7	23.3

Declaration – electromagnetic emissions

The Carilex TurnAir Pump is intended for use in the electromagnetic environment specified below. The customer or the user of the Carilex TurnAir Pump should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The Carilex TurnAir Pump 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.
RF emissions CISPR 11	Class B	The Carilex TurnAir Pump is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ Flicker emissions IEC 61000-3-3	Complies	

10 EMC Declaration

Declaration – electromagnetic emissions and immunity – for EQUIPMENT and SYSTEMS that are use in the professional healthcare facility environment or in the home healthcare environment

The Carilex TurnAir Pump declaration – electromagnetic immunity

The Carilex TurnAir Pump system is intended for use in the electromagnetic environment specified below.
The customer or the user of the Carilex TurnAir Pump system should assure that it is used in such an environment.

Immunity test	IEC 60601 test level		Compliance level		Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms ; 6 Vrms 150 kHz to 80 MHz		3 Vrms ; 6 Vrms 150 kHz to 80 MHz		Portable and mobile RF communications equipment should be used no closer to any part of the EQUIPMENT or SYSTEM including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Interference may occur in the vicinity of equipment marked with the following symbol.
Radiated RF IEC 61000-4-3	3 V/m ; 10V/m 80 MHz – 2.7 GHz 80%		10V/m 80 MHz – 2.7 GHz 80%		
Proximity fields from RF wireless Communications equipment IEC 61000-4-3	27 V/m	385 MHz	27 V/m	385 MHz	
	28 V/m	450 MHz	28 V/m	450 MHz	
	9 V/m	710 MHz	9 V/m	710 MHz	
		745 MHz		745 MHz	
		780 MHz		780 MHz	
	28 V/m	810 MHz	28 V/m	810 MHz	
		870 MHz		870 MHz	
		930 MHz		930 MHz	
	28 V/m	1720 MHz	28 V/m	1720 MHz	
		1845 MHz		1845 MHz	
		1970 MHz		1970 MHz	
	28 V/m	2450 MHz	28 V/m	2450 MHz	
	9 V/m	5240 MHz	9 V/m	5240 MHz	
		5500 MHz		5500 MHz	
		5785 MHz		5785 MHz	

Declaration – electromagnetic immunity

The Carilex TurnAir Pump system is intended for use in the electromagnetic environment specified below.
The customer or the user of the Carilex TurnAir Pump system should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV , ±4 kV , ±8 kV , ±15 kV air	±8 kV contact ±2 kV , ±4 kV , ±8 kV , ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines	Mains power quality should be that of professional healthcare facility or home healthcare environment.
Surge IEC 61000-4-5	±0.5 kV ±1 kV differential mode ±2 kV common mode	±0.5 kV ±1 kV differential mode ±2 kV common mode	Mains power quality should be that of professional healthcare facility or home healthcare environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0 % U_T ; 0 , 5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T ; 1 cycle and 70 % U_T ; 25/30 cycle Single phase: at 0°	0 % U_T ; 0 , 5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T ; 1 cycle and 70 % U_T ; 25/30 cycle Single phase: at 0°	Mains power quality should be that of professional healthcare facility or home healthcare environment. If the user of the EQUIPMENT or SYSTEM requires continued operation during power mains interruptions, it is recommended that the EQUIPMENT or SYSTEM be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in professional healthcare facility or home healthcare environment.
Proximity Magnetic Field IEC 61000-4-39	30 kHz (8 A/m) 134.2 kHz (65 A/m) 13.56 MHz (7.5 A/m)	30 kHz (8 A/m) 134.2 kHz (65 A/m) 13.56 MHz (7.5 A/m)	Proximity magnetic fields quality should be that of professional healthcare facility or home healthcare environment.

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