

carilex®

SERVICE MANUAL

Envelop

Please read and understand Envelop Replacement System's "Operating Manual" prior to using this service manual. This service manual is for qualified technicians only! If you have any questions, please contact your local distributor or email us at info@carilexmedical.com for assistant.

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Chapter 1 General Information

1.1 Introduction

This Carilex Manual provides repair and maintenance instructions for the Envelop Anti-decubitus Mattress Replacement System.

The sections of the manual designated as Level 1 can be performed by any trained staff member.

The sections of the manual designated as Level 2 can only be performed by Factory Authorized service personnel. If you are not authorized to do repairs, please contact Carilex or your local distributor to receive a return authorization number and the details of where the unit can be sent for servicing.

ATTENTION!

Unqualified personnel attempting to work on this system are in risk of possible injury or electrocution to themselves or others.

DO NOT WORK, NOR ATTEMPT TO WORK ON THE POWER UNIT UNLESS YOU ARE PROPERLY QUALIFIED TO DO SO.

ATTENTION!

Thoroughly read through the service manual, especially **INDICATIONS, SAFETY PRECAUTIONS** and **WARNINGS**, before performing any maintenance and repairing of the system.

Chapter 1 General Information

1.2 Symbols Reference



Attention! Please read accompanying documents



Double Insulated (Class II Electric Appliances)



Functional Ground



Type BF Applied Part

IPX0

No special protection. Do not immerse power unit in liquid or spray liquids directly on power unit.



Declaration of Conformity to Medical Device Directive (93/42/EEC)

Chapter 1 General Information

1.3 Indications & Safety Precautions

1. This device is indicated to assist in the treatment and/or prevention of pressure ulcers as part of a holistic program of pressure ulcer management. Always consult a physician before using this device.
2. Certain patient conditions (e.g. unstable cervical fracture) are contraindicated for use with this device. Always consult the patient's physician prior to use.
3. The Carilex Products are always to be used in accordance with the Operation Manual.
4. The main electricity supply within the building where the power control unit is to be used must comply with IEC (International Electrotechnical Commission) regulations.
5. The Carilex Products are designed to comply with all relevant electrical safety, manufacturing, and performance standards published by IEC.
6. Materials used for cleaning, maintenance, and repair may be subject to your local regulations. Manufacturer's instructions for use must be applied for all times.
7. Use only Carilex spare parts. Substituting spare parts may result in malfunctioning or patient injury and voids the warranty.

1.4 Return Policy

1. Carilex's sole obligation and liability for defects in materials and workmanship are only warranted under the agreed warranty period. Products sent back either soiled, unsanitary, without a RA number, will be rejected without servicing. After 14 days of purchase, spare parts for product maintaining will be provided by Carilex upon request within warranty period.
2. Distributors can return and place a product replacement order with Carilex only if:
 - i. Damaged or ineffective products discovered within 3 days of purchase, and
 - ii. An authorized RA (Return Authorization) number is obtained from Carilex.
3. Under-Warranty Repairs: Distributors must have qualified technicians trained to do field repairs for Carilex products once spare parts are provided. Only products i). request by Carilex or ii). with an authorized RA number, can be send back to Carilex.
4. Out-Of-Warranty Repairs: If Carilex products need to be repaired beyond the warranty period, dealers can deliver products for repairing at their own cost after an authorized RA number obtained from Carilex. Spare parts' price list for replacement can be obtained upon request.

Chapter 1 General Information

1.5 Warnings

WARNING! – Open Flames

Do not expose this device to open flames, lighters, or cigarettes. This device draws room air continuously, therefore cigarette smoking is not recommended near this device. Cigarette smoke may damage internal components. Cigarettes may ignite bed linens.

CAUTION: DO NOT SMOKE CIGARETTES, PIPES, CIGARS, OR ANY OTHER RELATED PRODUCTS ON OR AROUND THIS SYSTEM. FLAMMABILITY HAZARD EXISTS.

WARNING! – Cross Contamination

This device should be decontaminated between patient installations. Refer to Power Unit and Mattress Maintenance Sections of this Manual for proper instructions. Failure to disinfect may result in cross contamination.

WARNING! – Oxygen Equipment

EXPLOSION RISK if used in the presence of flammable anesthetics.

WARNING! – Liquids

DO NOT immerse power unit in any liquids or spray any liquids directly on power unit.

WARNING! – Risk of Electric Shock

DO NOT open back cover. This device is **NOT** user serviceable. This device should only be opened by qualified personnel approved by Carilex. Refer all service to your local Carilex authorized dealer.

WARNING! – Fuse

DANGER! RISK OF FIRE. Replace fuses as marked: T0.5A/250V & T2A/250V.

Chapter 1 General Information

WARNING! – Electrical

DO NOT insert items into any opening of the power unit. This could short internal components, which could cause fire or electrical shock. This product is **NOT** AP/APG protected. **REFER SERVICING TO QUALIFIED PERSONNEL ONLY.**

WARNING! – Grounding

The Carilex Products are Class I products. Do not cut or remove the grounding prong for shock prevention from the plug used on any Carilex products if it presents. In the event that a non-compatible wall receptacle is found, it is customer's personal liability and obligation to contact a qualified electrician to replace it with a compatible wall receptacle in accordance with the National Electrical Code.

WARNING! – Extension Cord

If you must use an extension cord, **ONLY** use an appropriate extension cord that has the same or higher electrical rating as the device being connected.

Note: Grounding reliability can only be achieved when plug is connected to an equivalent receptacle marked "Hospital Grade" or "Hospital Only".

Chapter 2 Maintenance Level 1

2.1 Introduction

The procedures described in the Maintenance - Level 1 section of this manual can be done by trained staff carefully following the exact instructions.

The Carilex products should be on a schedule of maintenance for function testing to ensure the system is working properly. Testing should be conducted annually and results should be recorded and filed.

Field maintenance function testing can be completed with the field testing kit from Carilex (Model SR502) and an electric multi-meter or with the following equipment:

Manometer (20-300 mmHg)

Flow meter (0-25 liters/min)

Please use following inspection checklist and procedure to record test results.

ATTENTION!

Field maintenance function testing should only be performed by qualified technical personnel. Unqualified personnel attempting to work on this system are in risk of possible injury or electrocution to themselves or others.

DO NOT WORK, NOR ATTEMPT TO WORK ON THE POWER UNIT UNLESS YOU ARE PROPERLY QUALIFIED TO DO SO.

ATTENTION!

Thoroughly read through the service manual, especially **INDICATIONS, SAFETY PRECAUTIONS** and **WARNINGS**, before performing any maintenance and repairing of the system.

Chapter 2 Maintenance Level 1

2.2 Power Unit Inspection Procedure & Checklist


INSPECTION PROCEDURE

1. Turn on the power unit.
2. Connect the tube connector to the power unit. Tube connectors are located at the side of the bag of the field testing kit.
3. Connect the flow meter to the power unit, through the tube connector.
4. Measure the air flow.

ATTENTION!

There might only be one air outlet, from the power unit, that has air flowing. For accurate measurement, please measure the outlet with air flow.

CHECKLIST

	ARTICLE #:	_____
	SERIAL #:	_____
	AIR FLOW FROM POWER UNIT OUTLET :	_____
	TECHNICIAN:	_____
	INSPECTION DATE:	_____

Chapter 2 Maintenance Level 1

ATTENTION!

If air flow is lower than 6 liters/min., or air pressure is lower than 100mmHg, please replace compressor. Return unit to factory trained qualified personnel to repair the unit. **ONLY QUALIFIED PERSONNEL MAY PREFORM THE REPLACEMENT.**

Chapter 2 Maintenance Level 1

2.3 Mattress Failure Inspection Procedure

Mattress failure may cause low pressure alert failure and also the mattress cannot be fully inflated. Please use inspection procedures in this section for mattress failure inspection.

CHECKING IF CONNECTING TUBES ARE BENDED OR LEAKED:

1. Check if there is any bended tube by sight
2. Check if there is any leaked tube by:
 - i. Using your hand to move through all tubes to feel if there is an air leakage
 - ii. Using soapsuds spray on the surface of the tubes to see if there's any bubble appears showing the leakage location
 - iii. Note that most leakage happens at the joint

CHECKING FOR AIR CELLS LEAKAGE:

1. Fully inflate the air cells before inspection
2. Check if there's a leakage by squeezing on each individual air cells. If the air escapes the air cells quickly, and does not return to its original shape, then replace the air cell.

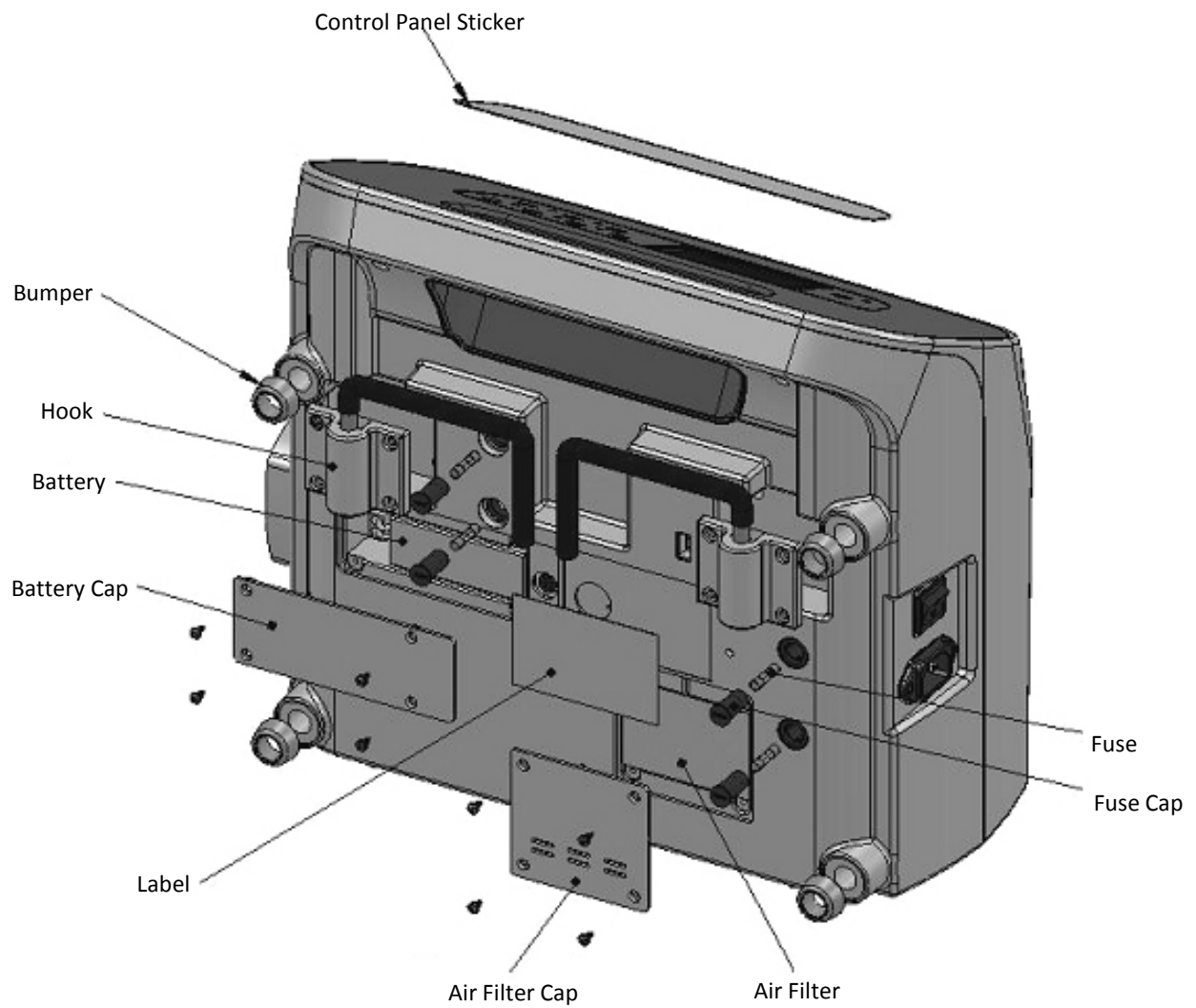
ATTENTION!

Ventilated air cells do have small air vents on them which do not cause low pressure alert failure. Please replace air cells if any visible holes or crevices are observed.

3. Using your hand to move through all air cells to feel if there is an air leakage
4. Using soapsuds spray on the surface of the air cells to see if there's any bubble appears showing the leakage location
5. Note that most leakage happens at the joint of the air cells and tubes

Chapter 3 Testing – Level 1 –Power Unit

3.1 Part Identification Overview



Chapter 3 Testing – Level 1 –Power Unit

3.2 General Cleaning Instructions

ROUTINE CLEANING WHILE IN USE BY A SINGLE PATIENT:

Power unit can be cleaned by wiping down with damp cloth using soap and water or mild neutral detergent. Never spray cleaners or liquids directly on power unit.

LAUNDRY/DECONTAMINATION BETWEEN PATIENTS:

1. Turn power off and unplug power unit to avoid shock hazard.
2. Dampen clean cloth with soap and water or mild detergent then wipe power unit.
3. Disinfect power unit with hospital grade registered disinfectant. Let stand for appropriate contact time according to manufacturer's instructions.
4. Dry using a clean dry cloth or disposable paper towels.
5. Wrap in plastic and store in a cool, dry place.

ATTENTION!

Always unplug power unit before cleaning.

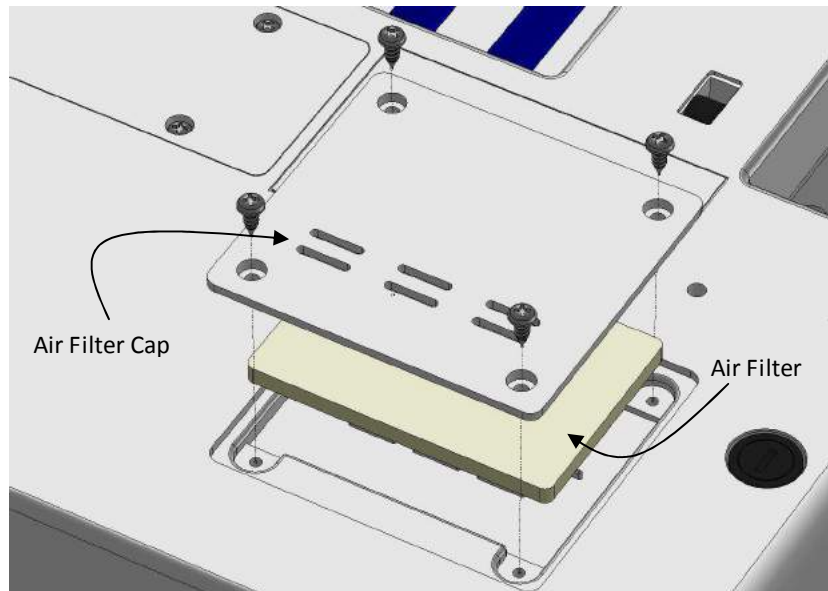
Chapter 3 Testing – Level 1 –Power Unit

3.3 Cleaning / Replacing Air Filters

The Carilex products require very little preventative maintenance. The air filter should be checked once a year. However, if used in a difficult environment (e.g. smoke and dust), then it is recommended to check more often.

STEPS TO CLEAN AND EXCHANGE AIR FILTER:

1. To access the air filter, locate the air filter cap on the back of the power unit.
2. Remove air filter cap by removing the 4 screws that is holding it in place.
3. Remove filter from filter cap.
4. Check for excess dirt or dust. The filter should be cleaned with mild soap and water or, if necessary, replaced with a genuine replacement filter. Spare filters may be purchased from Carilex.
5. Thoroughly air dry before reinserting.
6. To reinsert, place the air filter snugly in the air filter cap.
7. Tighten the screws to secure the air filter cap and air filter back in to the original place.

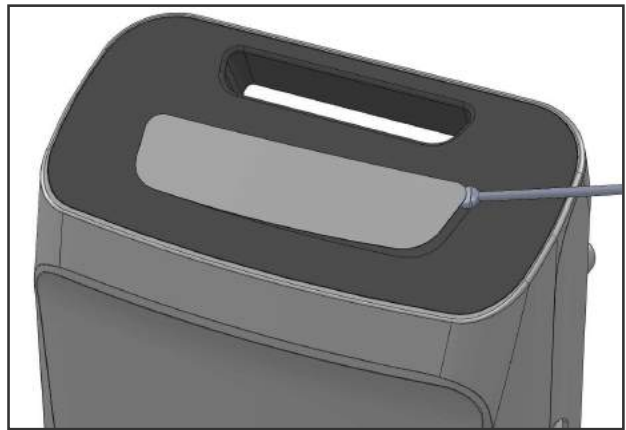


Chapter 3 Testing – Level 1 –Power Unit

3.4 Control Panel Sticker Replacement

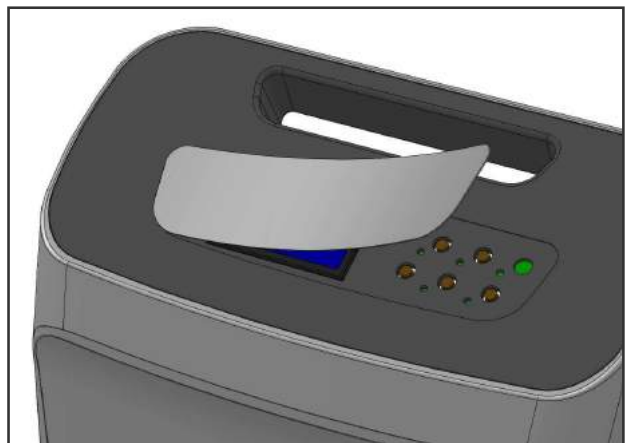
TO REMOVE CONTROL PANEL STICKER:

The panel is held in place by a self-adhesive backing. Use a small, thin, flat bladed screwdriver to pry up an edge and gently remove label.

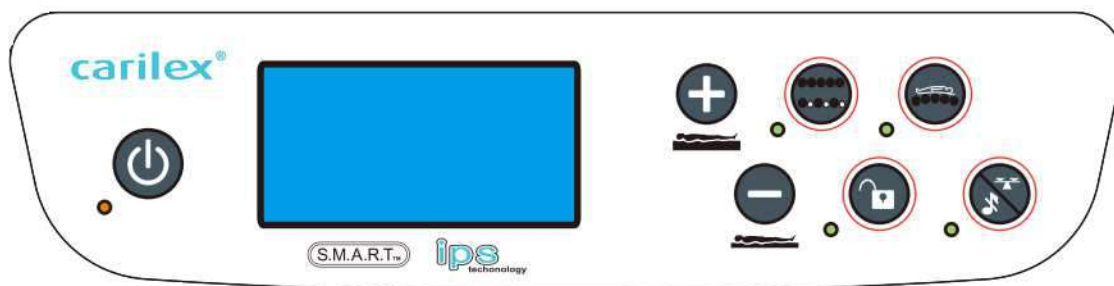


TO REPLACE CONTROL PANEL STICKER:

Clean surface thoroughly to remove any excess adhesive that may have been left behind. Then apply the new panel sticker by removing the backing material and position sticker as shown. Slowly roll down the panel, pressing firmly on the entire surface to ensure adhesion.



Envelop Power Unit Control Panel Diagram



Chapter 3 Testing – Level 1 –Power Unit

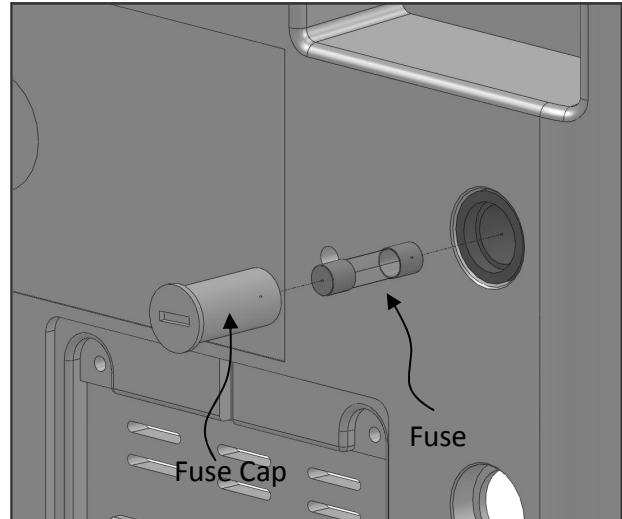
3.5 Fuse and Fuse Cap Replacement

TO REMOVE FUSE

Push in and turn counter clockwise one quarter turn and fuse will pop out so it can be removed. There are 4 fuse holder located on the back of the power unit.

TO REPLACE FUSE

Insert fuse in fuse cap, push in and turn one quarter clockwise to re-set.



ATTENTION!

Note the different fuse values, and **ONLY** use the correct values. Replace fuses as marked: T0.5A/250V.

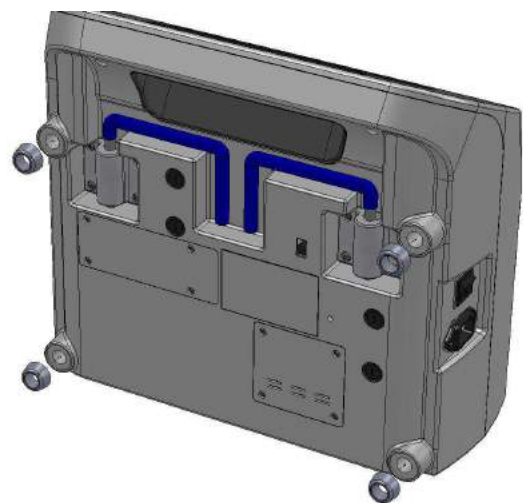
3.6 Bumpers Replacement

TO REMOVE BUMPERS

The bumpers are self-adhesive backing. Use a small, tiny, flat bladed screwdriver to pry up edge and gently remove bumpers.

TO REPLACE BUMPERS

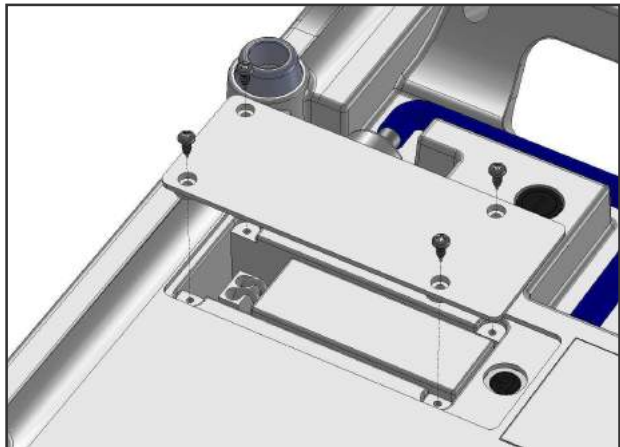
Clean up surface thoroughly to remove any excess adhesive that may have been left behind. Then apply the new bumpers by removing the backing material and position bumpers as shown. Slowly put down the bumper and make sure the bumper is in the right position. To ensure adhesion, pressing firmly on the entire surface.



Chapter 3 Testing – Level 1 –Power Unit

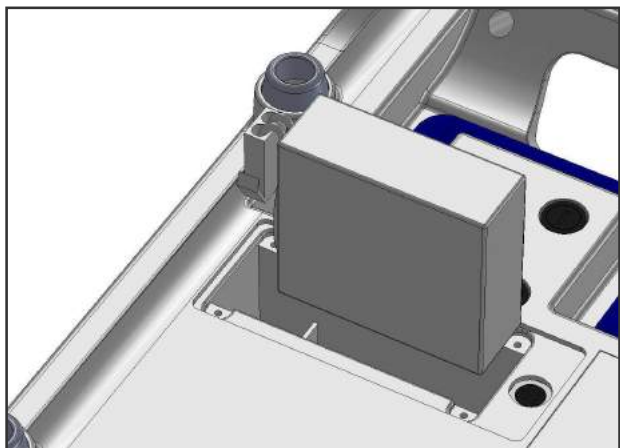
3.7 Backup Battery Replacement

1. To Access the battery, unscrew the battery cover on the back of the power unit.
2. Remove the battery and disconnect the wire connector.
3. Replace a new battery (battery part no. 59H-0000-001) and make sure the connector is refitted.
4. Relocate the battery cover back and screw it firmly.



ATTENTION!

Always use Genuine battery. Contact your local dealer. Do not place battery in the trash directly. Please follow your local regulation to dispose the battery.



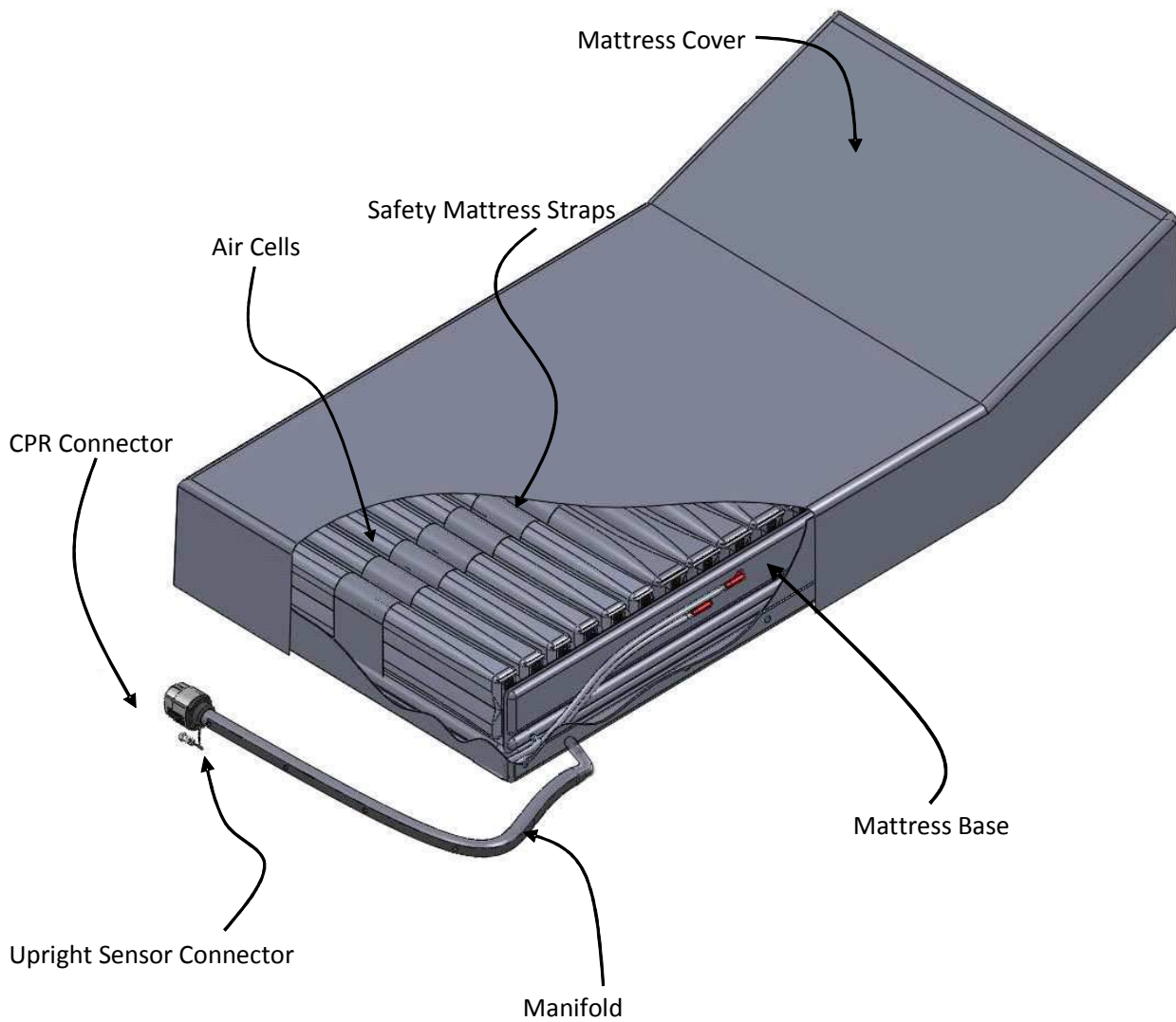
3.8 Hook Replacement

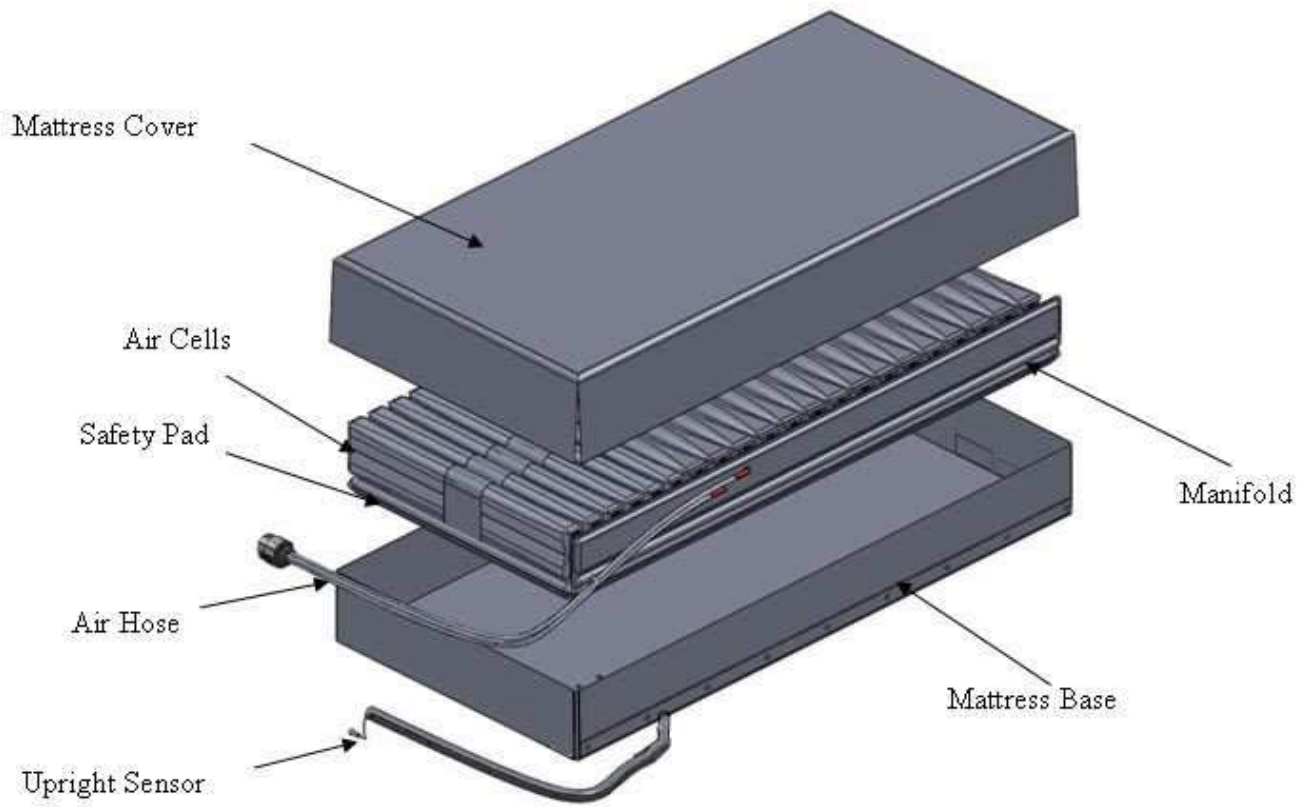
1. Remove the four screws holding each Hanger Hook in place.
2. Tighten the screws to secure the new Hooks to the unit.



Chapter 4 Testing – Level 1 –Mattress

4.1 Part Identification Overview





4.2 General Cleaning Instructions

ROUTINE CLEANING WHILE IN USE BY A SINGLE PATIENT:

Routine cleaning of the air mattress can be done at bedside by cleaning with mild detergent or soap and water followed by drying with a clean dry cloth. If the air mattress cover becomes heavily soiled, replace it with a Genuine cover or follow the Laundry/Decontamination instructions below. Soiled covers should be disposed of following hospital procedures or local environmental laws. Always ensure air mattress and cover are completely dry before allowing patient back on surface.

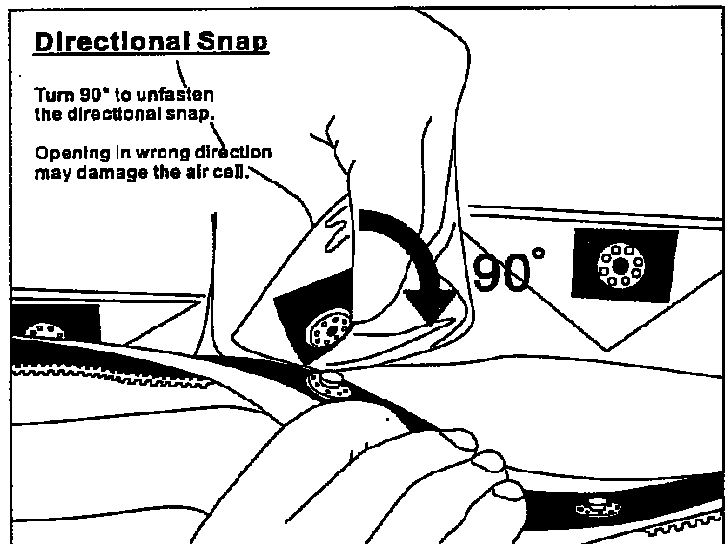
LAUNDRY/DECONTAMINATION BETWEEN PATIENTS:

Air mattresses/covers must be thoroughly cleaned between patients to avoid cross infection. The following instructions are a good guideline, but local infection control policies should be followed.

1. Wear rubber gloves, eye protection, waterproof /gown and mask if necessary.
2. Turn power unit off and remove plug from outlet to avoid electric shock.
3. Any contaminants should be removed with disposable paper towels prior to disinfection.
4. Spray entire cover and mattress replacement with hospital grade registered disinfectant. Let stand for appropriate contact time according to manufacturer's instructions.
5. Cover can be easily removed and laundered in warm water (113°F/45°C) with mild detergent. Tumble dry on lowest setting or hang dry when possible.
6. With mattress air cells deflated, wipe down both sides thoroughly with medical disinfectant. Allow to air dry.
7. Thoroughly wipe down entire mattress base and tubing. If dust or contaminant has accumulated, remove using swabs moistened with detergent/disinfectant. Allow all components to air dry. If storing mattress replacement, wrap mattress in plastic bag.

4.3 Air Cell Replacement

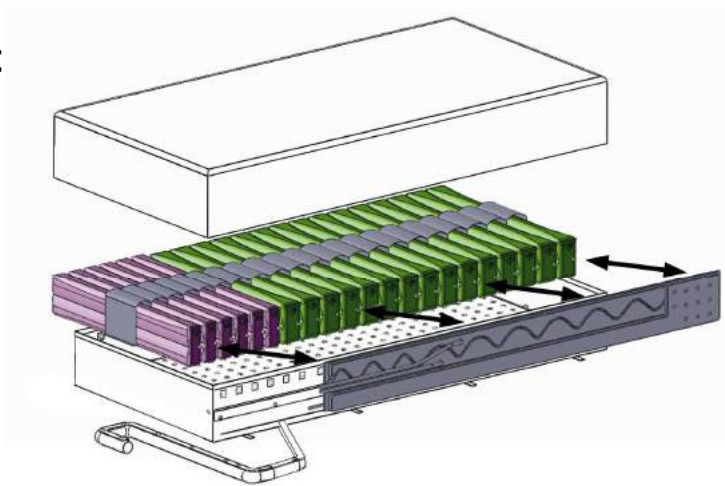
1. Remove the cover to access the air cells.
2. Disconnect the two directional snaps that hold the air cell in place.
3. Slid the air cell out of the safety mattress straps.
4. Reverse the procedure to install a new air cell and test for air leaks before adding the cover.



4.4 Manifold Replacement

TO REMOVE MANIFOLD:

Remove Cover. Then un-snap air cells from Base on the Manifold side of mattress. Continue to disconnect all air inlets from Manifold. Remove Manifold.



TO REPLACE MANIFOLD:

Reverse procedure to re-assemble the new Manifold.

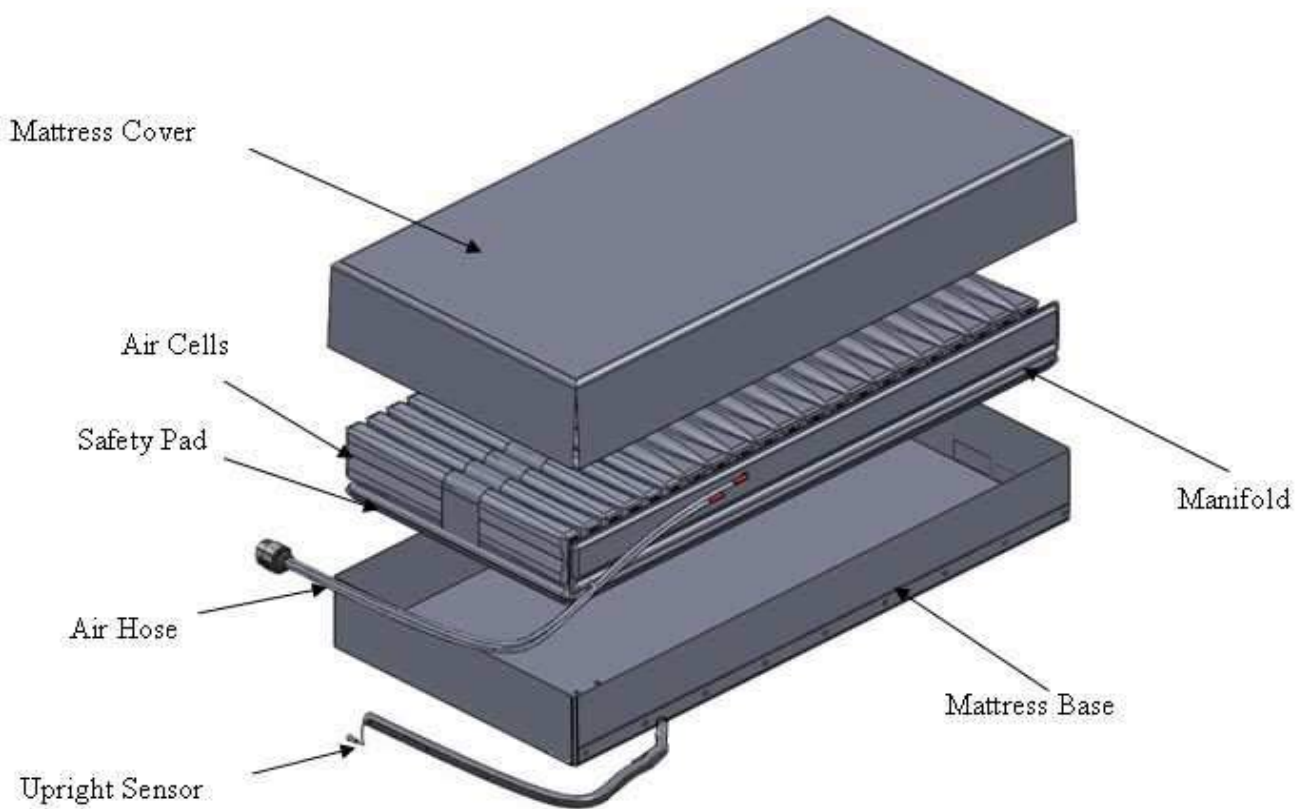
4.5 Safety Pad Replacement

1. Remove mattress cover unzipping the zip completely.
2. Remove Air Cells by un-snapping them from the Base on the opposite side of Manifold. (See Section C. Air Cell Replacement)
3. Unsnap air insert from base and remove.
4. Reverse procedure to install new unit.



4.6 Base Replacement

1. Remove mattress cover unzipping the zip completely.
2. Detach Safety Pad from the base. (See Section 4.5 Safety Pad Replacement)
3. Pull hoses through hole in Base.
4. Detach the base from manifold.
5. Replace a new base and reverse procedure to re-assemble.



Chapter 5 Troubleshooting

5.1 Introduction

5.1.1 Level 2 Troubleshooting

The procedures described in the Troubleshooting - Level 2 section of this manual can only be performed by Factory Authorized service personnel carefully following the exact instructions.

ATTENTION!

Unqualified personnel attempting to work on this system are in risk of possible injury or electrocution to themselves or others.

DO NOT WORK, NOR ATTEMPT TO WORK ON THE POWER UNIT UNLESS YOU ARE PROPERLY QUALIFIED TO DO SO.

WARNING

ONLY FACTORY AUTHORIZED SERVICE PERSONNEL

Factory authorized service personnel are the only people allowed to perform Level 2 Troubleshooting and Repair. If you are not authorized to do repairs, please contact Carilex or your local distributor to receive a return authorization number and the details of where you can send the unit for servicing.

Chapter 5 Troubleshooting

5.2 Troubleshooting Guide

The following sections outline troubleshooting procedures for the Envelop Anti-decubitus Mattress Replacement System. The flowcharts point to corresponding sections in the associated tables, which provide details on possible causes and remedial actions.

Chapter 5 Troubleshooting

5.2.1 No Power

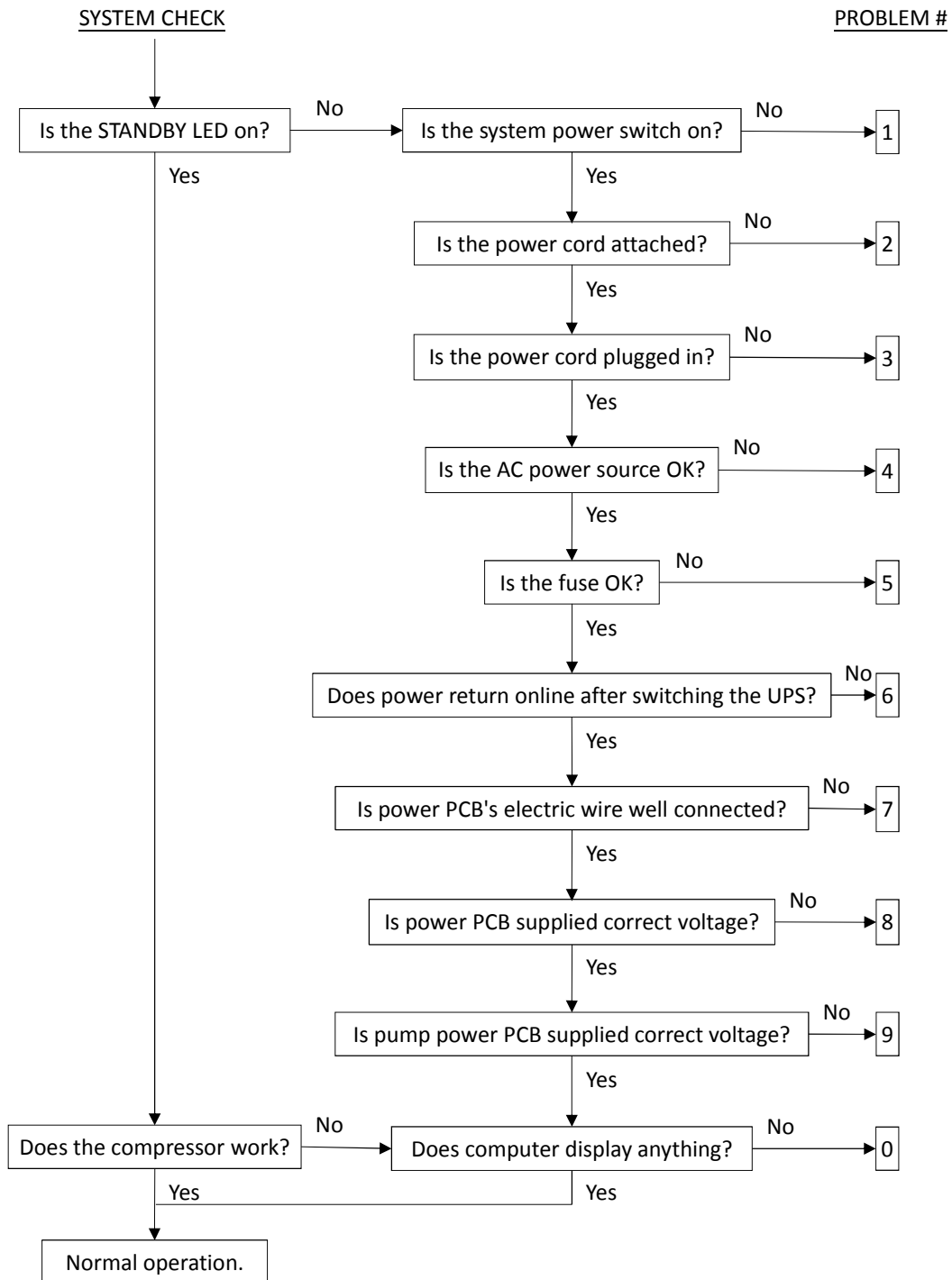


Chart 5.1 No Power.

Chapter 5 Troubleshooting

Table 5.1 No Power.

PROBLEM	CAUSE	SOLUTION
1 No power to the unit.	1. Unit power switch is not on. 2. Rocker switch and the power inlet are damaged.	1. Push the switch to the "On" position. 2. Replace bottom case set.
2 No power to the unit.	Power cord is not connected to unit's socket.	Secure power cord into power unit.
3 No power to the unit.	Power cord is not connected to a wall receptacle.	Secure power cord into wall outlet.
4 No power to the unit.	The AC power source is insufficient.	Plug power cord into an approved receptacle. (230V AC, 1A)
5 No power to the unit.	The fuse is burned out.	Replace fuse. Refer to Section 3.5 Fuse and Fuse Cap Replacement for more information.
6 No power to the unit. (UPS module is not working properly.)	The power returns after switching the UPS from online to bypass.	Replace UPS PCB.
7 No power to the unit.	Power PCB's electric wire is not connected to control PCB.	Secure the connections of the wires.
8 No power to the unit.	AC port on the Power PCB doesn't have the correct voltage 200-240 VAC.	Check with a multi-meter. Replace transformer.
9 No power to the unit.	AC2 port on the Pump Power PCB doesn't have the correct voltage.	Check with a multi-meter. Replace transformer.
0 No display on LCD screen.	1. No power to LCD screen. The cable or connector bringing power to the LCD screen is defective. 2. Control PCB is defective.	1. Replace LCD screen. Replace control PCB.

Chapter 5 Troubleshooting

5.2.2 No Function

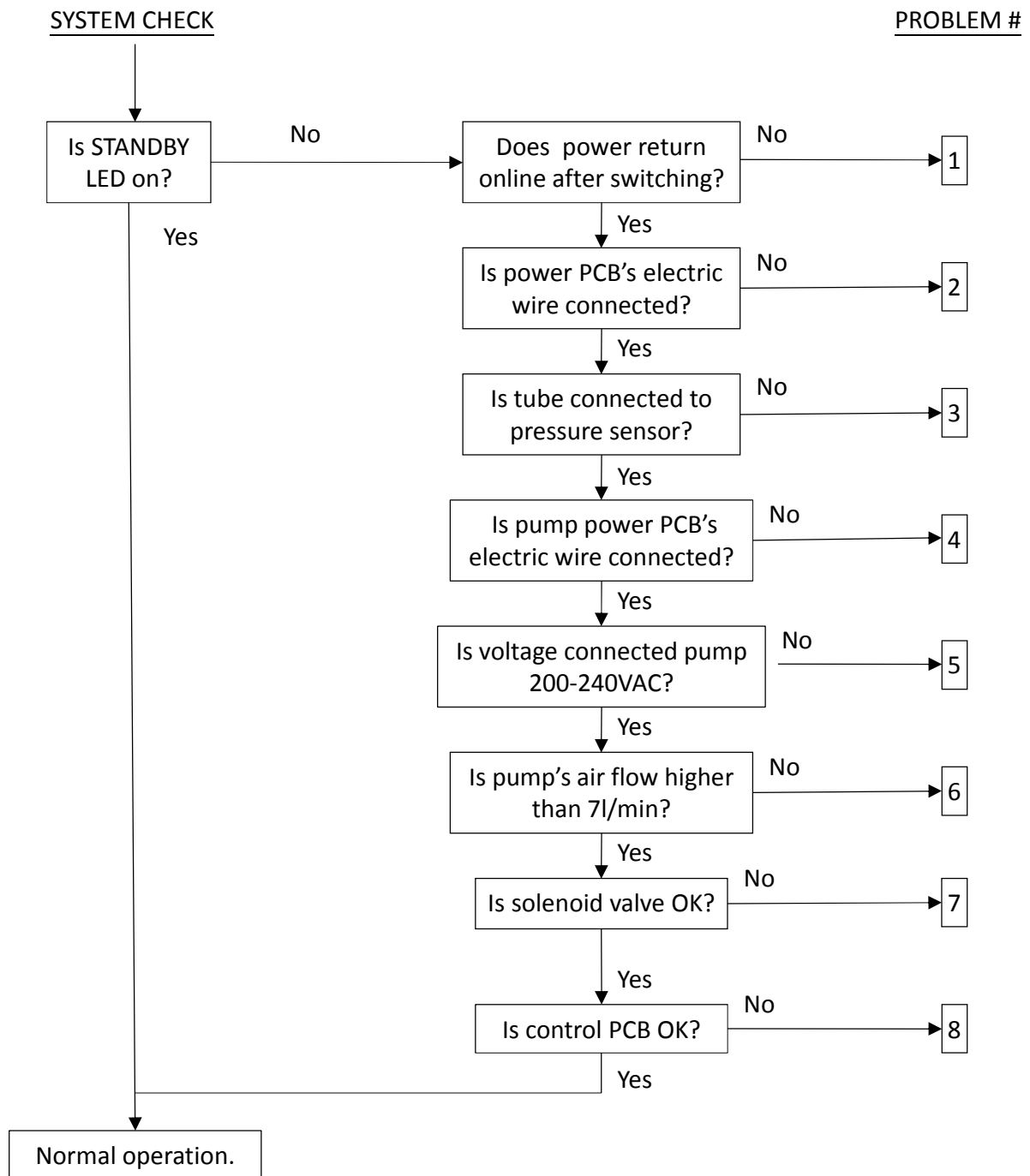


Chart 5.2 No function.

Chapter 5 Troubleshooting

Table 5.2 No function.

PROBLEM	CAUSE	SOLUTION
1 No power to the unit.	The power returns after switching the UPS from online to bypass.	Replace UPS PCB.
2 No power to the unit.	Power PCB's electric wire is not connected to control PCB.	Secure the connections of the wires.
3 Low or no pressure.	The tube connected to pressure sensor is not connected.	Secure the tube into pressure sensor. Replace the tube if necessary.
4 No power to the unit.	The Pump Power PCB's electric wire is not connected.	Secure the connections of the wires.
5 Incorrect voltage supply of the compressor.	The compressor is not receiving the correct voltage (200-240V AC) from pump power PCB.	Replace the pump Power PCB if necessary.
6 Low air output.	Compressor's air output is lower than 6 liters/min.	Replace Compressor
7 No alternating function.	The Solenoid Valve is not functioning correctly.	Replace Solenoid Valve if necessary.
8 No function.	Control PCB is defective.	Replace Control PCB.

Chapter 5 Troubleshooting

5.2.3 Buzzer without Sound

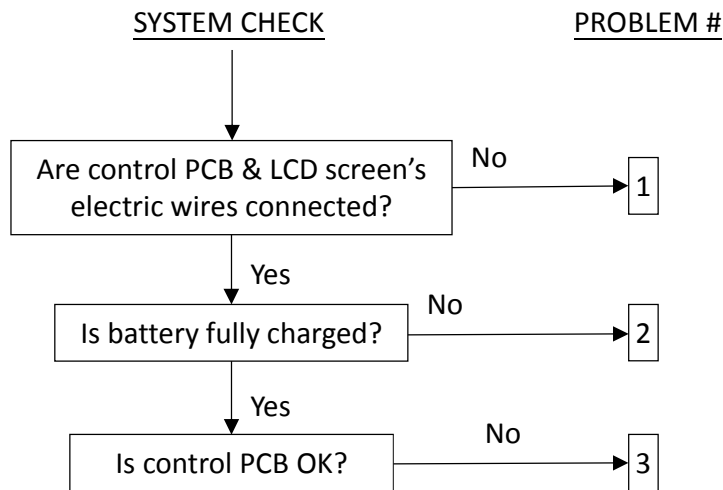


Chart 5.3 Buzzer without sound.

Table 5.3 Buzzer without sound.

PROBLEM	CAUSE	SOLUTION
1 No power to LCD.	The wires connecting to the Control PCB, and LCD Screen, inside the power unit, are not securely connected.	Securely connect the wires.
2 Low power on Battery Set.	The Battery Set (located on the divider inside the power unit) is not fully charged.	Replace Battery Set if necessary.
3 Buzzer without sound.	Control PCB is defective.	Replace Control PCB.

Chapter 5 Troubleshooting

5.2.4 Abnormal Sound from System

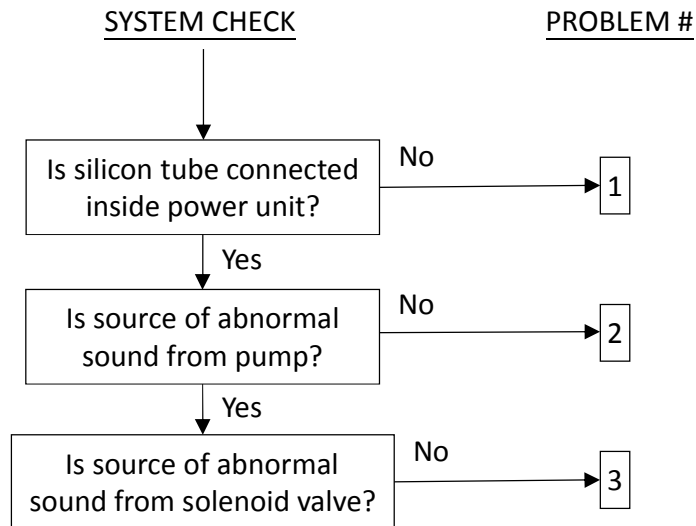


Chart 5.4 Abnormal sound from system.

Table 5.4 Abnormal sound from system.

PROBLEM	CAUSE	SOLUTION
1 An air leakage.	The silicon tubes connecting inside the power unit are not well connected.	Securely connect the silicon tubes.
2 Compressor is defective.	The source of the abnormal sound is from the Compressor.	Replace Compressor.
3 Solenoid valve is defective..	The source of the abnormal sound is from the Solenoid Valve.	Replace Solenoid Valve.

Chapter 5 Troubleshooting

5.2.5 CPR Alarm Sound Problem

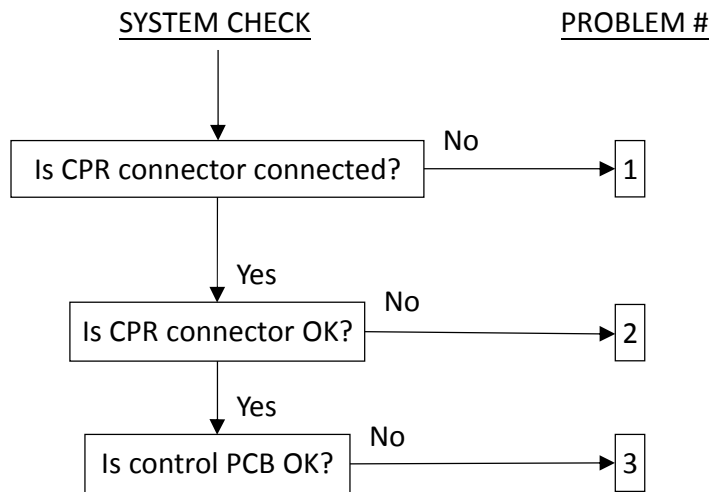


Chart 5.5 CPR alarm sound problem.

Table 5.5 CPR alarm sound problem.

PROBLEM	CAUSE	SOLUTION
1 CPR alarm problem.	The CPR connector is not connected.	Securely connect the CPR connector.
2 CPR alarm problem.	The CPR connector is broken.	Replace Side Panel Set.
3 CPR alarm problem.	Control PCB is defective.	Replace Control PCB.

Chapter 5 Troubleshooting

5.2.6 Low Pressure Alarm Sound Problem

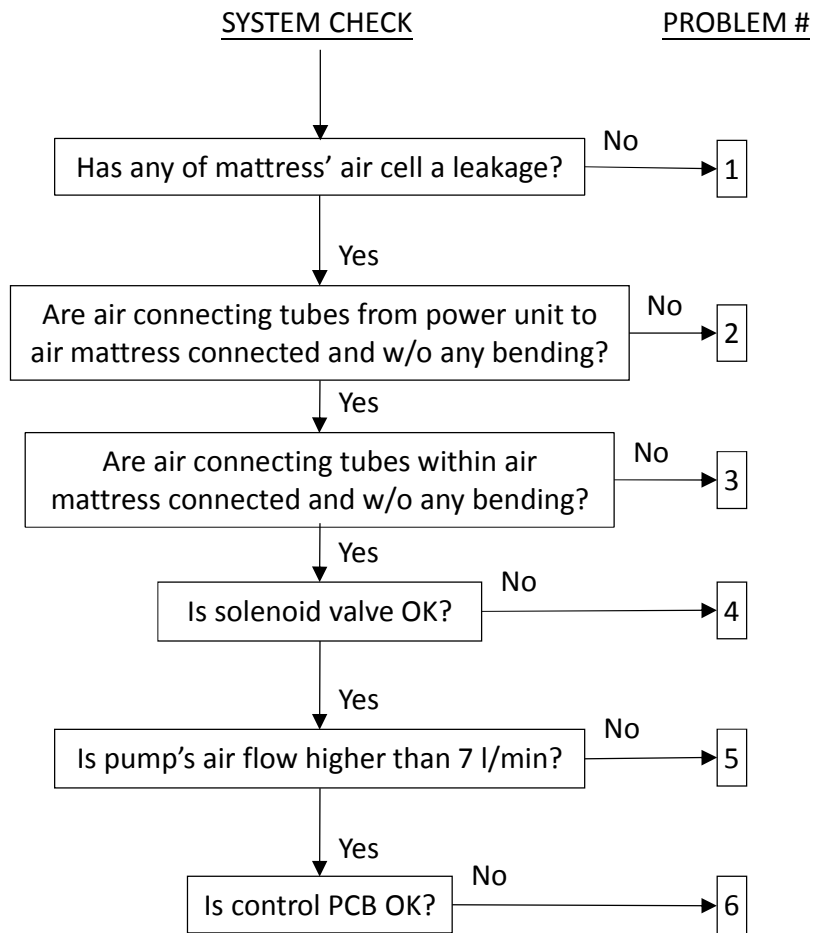


Chart 5.7 Low pressure alarm sound problem.

Chapter 5 Troubleshooting

Table 5.6 Low pressure alarm sound problem.

PROBLEM	CAUSE	SOLUTION
1 Mattress' leakage.	Any of mattress' air cell has a leakage.	Refer to Section 2.3 Mattress Failure Inspection Procedure for more information.
2 Tube's problem.	Any of all air connecting tubes from power unit to air mattress is not connected or bended.	Secure the connections of the tubes. Replace manifold if necessary, refer to Section 4.4 Manifold Replacement for more information.
3 Tube's problem.	Any of all air connecting tubes within air mattress is not connected or bended.	Secure the connections of the tubes. Replace manifold if necessary, refer to Section 4.4 Manifold Replacement for more information.
4 No alternating function.	The Solenoid Valve is not functioning correctly.	Replace Solenoid Valve if necessary.
5 Low air output.	Compressor's air output is lower than 6 liters/min.	Replace Compressor
6 Upright sensor problem.	Control PCB is defective.	Replace Control PCB.

Chapter 5 Troubleshooting

5.2.7 No or Low Air Flow

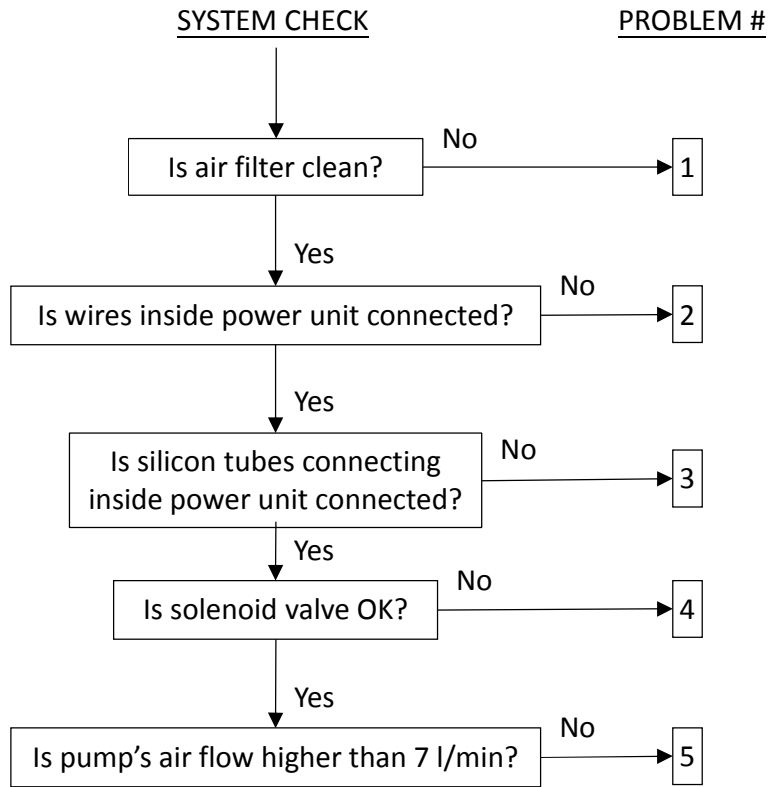


Chart 5.8 No or low air flow.

Chapter 5 Troubleshooting

Table 5.7 No or low air flow.

PROBLEM	CAUSE	SOLUTION
1 Air filter broken.	The air filter is not clean.	Refer to Section 3.3 Cleaning / Replacing Air Filters for more information.
2 No power to the unit.	The wires connecting from the power inlet, rocker switch, UPS PCB, Power PCB, Pump Power PCB, Control PCB, and Transformer, inside the power unit, are not connected.	Securely connect the wires.
3 An air leakage.	The silicon tubes connecting inside the power unit are not well connected.	Securely connect the silicon tubes.
4 No alternating function.	The Solenoid Valve is not functioning correctly.	Replace Solenoid Valve if necessary.
5 Low air output.	Compressor's air output is lower than 6 liters/min.	Replace Compressor

Chapter 5 Troubleshooting

5.2.8 Mattress Can't Be Fully Inflated

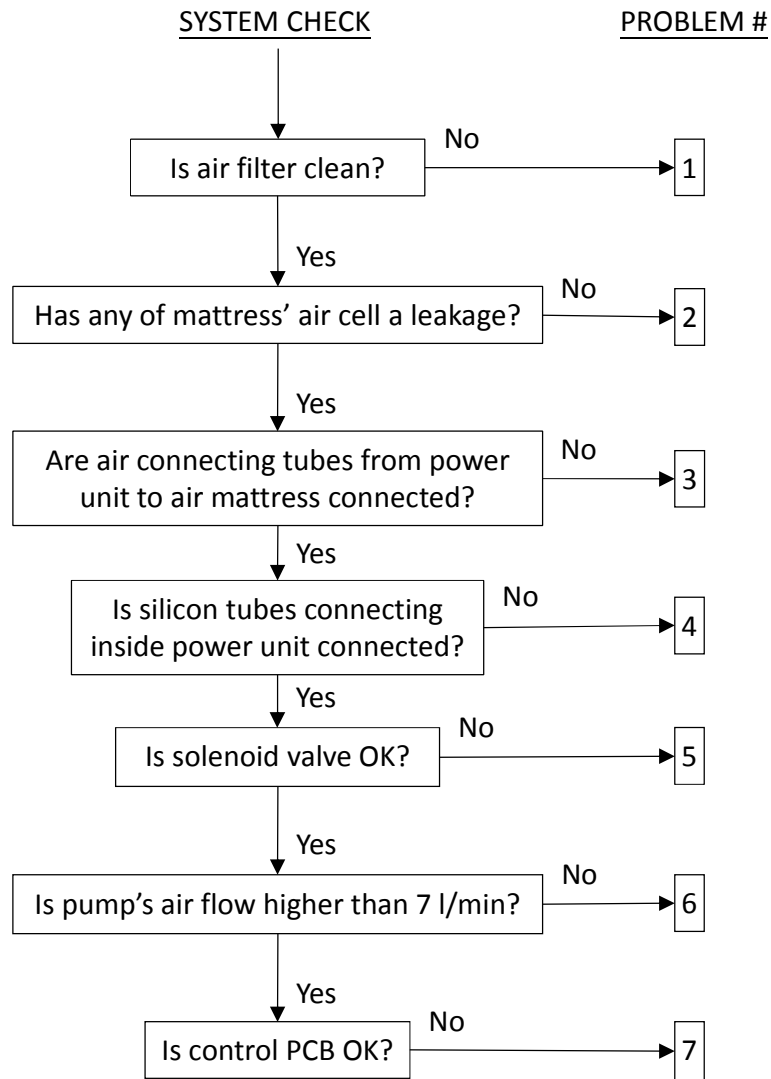


Chart 5.9 Mattress can't be fully inflated.

Chapter 5 Troubleshooting

Table 5.8 Mattress can't be fully inflated.

PROBLEM	CAUSE	SOLUTION
1 Air filter broken.	The air filter is not clean.	Refer to Section 3.3 Cleaning / Replacing Air Filters for more information.
2 Mattress' leakage.	Any of mattress' air cell has a leakage.	Refer to Section 2.3 Mattress Failure Inspection Procedure for more information.
3 An air leakage.	Air connecting tubes from power unit to air mattress are not well connected.	Secure the connections of the tubes. Replace manifold if necessary, refer to Section 4.4 Manifold Replacement for more information.
4 An air leakage.	The silicon tubes connecting inside the power unit are not well connected.	Securely connect the silicon tubes.
5 No alternating function.	The Solenoid Valve is not functioning correctly.	Replace Solenoid Valve if necessary.
6 Low air output.	Compressor's air output is lower than 6 liters/min.	Replace Compressor
7 No function.	Control PCB is defective.	Replace Control PCB.

Chapter 5 Troubleshooting

5.2.9 Continued to Inflate Max Internal Pressure

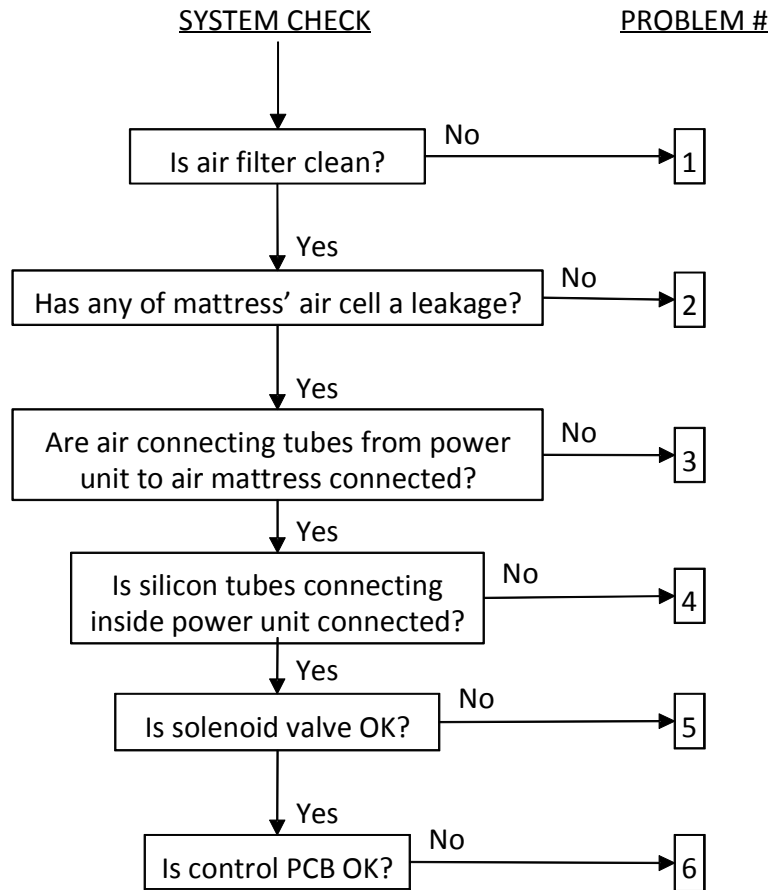


Chart 5.10 Continued to inflate max internal pressure.

Chapter 5 Troubleshooting

Table 5.9 Continued to inflate max internal pressure.

PROBLEM	CAUSE	SOLUTION
1 Air filter broken.	The air filter is not clean.	Refer to Section 3.3 Cleaning / Replacing Air Filters for more information.
2 Mattress' leakage.	Any of mattress' air cell has a leakage.	Refer to Section 2.3 Mattress Failure Inspection Procedure for more information.
3 An air leakage.	Air connecting tubes from power unit to air mattress are not well connected.	Secure the connections of the tubes. Replace manifold if necessary, refer to Section 4.4 Manifold Replacement for more information.
4 An air leakage.	The silicon tubes connecting inside the power unit are not well connected.	Securely connect the silicon tubes.
5 No alternating function.	The Solenoid Valve is not functioning correctly.	Replace Solenoid Valve if necessary.
6 No function.	Control PCB is defective.	Replace Control PCB.

Chapter 5 Troubleshooting

5.2.10 No Alternating/ Static/ Firm/ Auto-setting Function

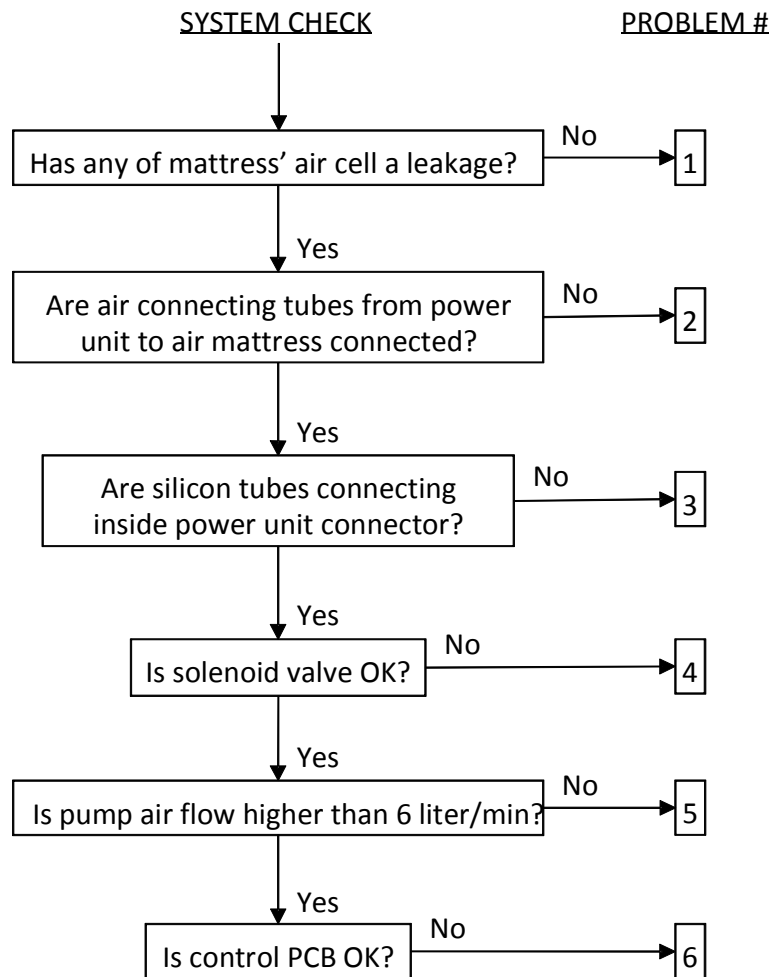


Chart 5.11 No alternating/ static/ firm/ auto-setting function.

Chapter 5 Troubleshooting

Table 5.10 No alternating/ static/ firm/ auto-setting function.

PROBLEM	CAUSE	SOLUTION
1 Mattress' leakage.	Any of mattress' air cells has a leakage.	Refer to Section 2.3 Mattress Failure Inspection Procedure for more information.
2 An air leakage.	Air connecting tubes from power unit to air mattress are not well connected.	Secure the connections of the tubes. Replace manifold if necessary, refer to Section 4.4 Manifold Replacement for more information.
3 An air leakage.	The silicon tubes connecting inside the power unit are not well connected.	Securely connect the silicon tubes.
4 No alternating function.	The Solenoid Valve is not functioning correctly.	Replace Solenoid Valve if necessary.
5 Low air output.	Compressor's air output is lower than 6 liters/min.	Replace Compressor
6 No function.	Control PCB is defective.	Replace Control PCB.

Chapter 5 Troubleshooting

5.2.11 No Memory Recall Function

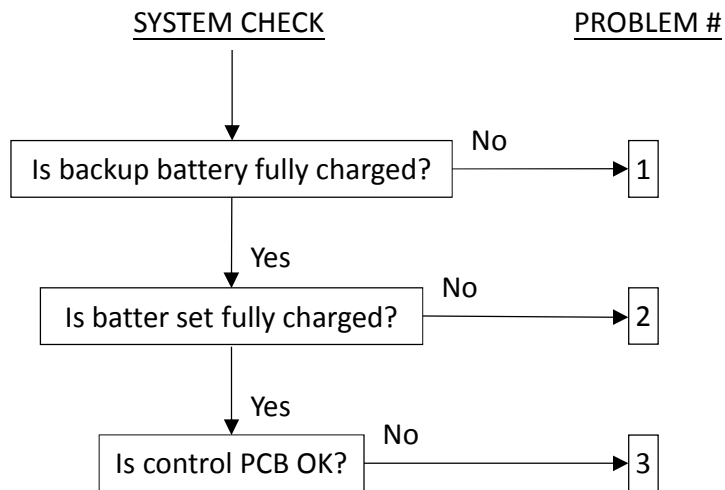


Chart 5.12 No memory recall function.

Table 5.11 No memory recall function.

PROBLEM	CAUSE	SOLUTION
1 No memory recall function.	Backup battery is empty or defective.	Charge the backup battery, or replace the battery. Refer to Section 3.7 Backup Battery Replacement for more information.
2 No memory recall function.	Battery set (located on the divider inside the unit) is defective.	Replace the battery set if necessary.
3 No memory recall function.	Control PCB is defective.	Replace Control PCB.

Chapter 5 Troubleshooting

ATTENTION!

PLEASE ONLY FOLLOW THE TROUBLESHOOTING AND REPAIRING INSTRUCTIONS ABOVE. ATTEMPTING TO PERFORM OTHER ACTS AND TAMPERING OF THE SYSTEM IS STRICTLY PROHIBITED. FAILURE TO FOLLOW THE INSTRUCTION MAY CAUSE SEVERE DAMAGE TO THE SYSTEM AND RISK OF INJURY TO THEMSELVES OR OTHERS.

Appendix A: Product Service Record

Please fill up the product service record (F101.03) when perform product service every time.

Product Service Record

General Information		
Date:		
Service Technician:		
Company:		
Location:		
Product Serviced:		
Serial Number:		
Device Article Number:		
Invoice Number:		
In Warranty	Yes / No	
General Problems Description:		
Parts Replaced or Repaired	Problems Identified	Serial Number (Record if applicable)
		Old:
		New:
		Old:
		New:
		Old:
		New:
		Old:
		New:
		Old:
		New:

For Carilex QA Division use only: 類別： A: 硬體設計類 B:軟體設計類 C:機構設計類 D:製造品質
E:檢驗品質 F: 供應商品質 G:其他

是否建議開立 ECR No. Yes, ECR/ECN# _____

For Carilex Sales Div. use only: (已經超過保固期之維修費用請打 D/N 收款, 請在此記錄 D/N#)

Device sent back to customer on _____ via _____
(表格與 D.C.C 發行之最新版本相符)