novis

ProCair
User Guide

Static Mode Programming Option

pressure care and patient handling specialists

novis.com.au / **1300 738 885**

Important Notice

Before operating this medical equipment, it is important to read this User Guide and understand the operating instructions and safety precautions. Failure to do so could result in patient injury and/or damage to the product.

We recommend you keep the User Guide near the product.

Therapeutic devices and/or medical equipment should only be used in accordance with manufacturer's instructions and under the consent, supervision and management of a suitably qualified health professional.

If you have any questions, please contact Novis Healthcare on 1300 738 885.

Novis Healthcare has a policy of continuous product improvement and reserves the right to amend specifications presented in this guide. Information correct at time of production (September 2020) .

Definition of Symbols Used

The following symbols may appear in this User Guide, on the product, or on its accessories. Some of the symbols represent standards and compliances associated with the control unit and its use.

- Important information
- Caution
- Electrical hazard
- Infection control
- Do not...
- Class II Protection against Electric Shock
- Type BF Applied part
- Alternating Current
- Manufacturer
- Manufacturing Date
- SN Serial Number
- Refer to Manual
- Disposal: Do not dispose of this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.
- IP21 Protection against foreign object and vertically falling water drops.

Contents

SOFT GOODS
3 YEAR WARRANTY

CONTROL UNIT
3 YEAR WARRANTY

System Overview

The ProCair is an alternating mattress replacement system for the prevention and treatment of skin breakdown and pressure injuries in patients of high to very high risk. It is designed to replace your existing bed mattress on either a standard or profiling electric bed frame.

The system is constructed from transverse air cells that cyclically inflate and deflate in an alternating pattern, providing gentle and dynamic support. Cyclic alternation of pressure prevents arterial and venous capillary occlusion in the patient's surface tissue – maintaining and stimulating the flow of blood and lymphatic fluids through these tissues to provide essential oxygen and remove metabolic waste.

The system consists of the following components:

- ☐ Mattress replacement with umbilical air hoses and CPR release
- ☐ Control unit
- ☐ Power cord
- ☐ User Guide
- ☐ Carry bag

It is recommended that all packing materials and User Guides be kept in the carry bag provided, for ease of storage and/or transport.

Intended Use

Indications

The ProCair mattress replacement systems are indicated for:

- ☐ The prevention and treatment of skin breakdown and pressure injuries in patients of high to very high risk.

Contraindications

Patient conditions for which the application of pressure therapy on the ProCair mattress replacement systems contraindications include:

- ☐ Instable spinal cord injury
- ☐ Cervical traction

Intended Care Setting

Intended care settings for the ProCair mattress replacement systems are:

- ☐ Home healthcare
- ☐ Professional healthcare

Working Environment

- ☐ Temperature: 15°C to 35°C (59° F to 95° F)
- ☐ Humidity: 30% to 75% non-condensing

Shipping/ Storage Environment

- ☐ Temperature: 5°C to 60°C (41° F to 140° F)
- ☐ Humidity: 30% to 90% non-condensing

Connecting System to Other Devices

There no are other devices necessary for normal operation.

The ProCair mattress replacement can be fitted to most standard hospital or single bed bases.	The ProCair King Single mattress replacement can be fitted to most king single sized hospital or king single bed bases.

The ProCair control unit can be fitted to the foot board of most hospital or aged care beds.

Therapeutic devices should only be used in accordance with manufacturer's instructions and under the consent, supervision and management of a suitably qualified health professional.

Novis Healthcare accepts no liability for any use, change or assembly of the product other than that stated in this User Guide. Refer to our Warranty Statement for more details.

Safety Precautions

The purpose of the following safety precautions are to direct attention to possible dangers. The safety symbols and their explanations require careful attention and understanding.

The safety warnings by themselves do not eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measures.

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

General Safety Precautions

- **Read all instructions before using this medical device**
- This system must be used on top of an appropriate sized bed frame and the appropriate operating environment as stated in this User Guide.
- Before commencing set up or installation, ensure the power is switched off and disconnect the power cord from the control unit. Novis Healthcare recommends using the cord retention loops on the mattress base where possible and attaching it to an electrical outlet by the head of the bed.
- Minimise layers between patient and mattress and secure bed sheets loosely so as not to affect the alternating cell movement. As part of a sensible pressure injury prevention strategy, avoid wearing clothing that may cause areas of localised damage due to creases, seams, objects in pockets, etc.
- Never use sharp objects or electrically heated blankets on or under the system.
- Product top cover may present a suffocation risk. It is the responsibility of the caregiver to ensure that the patient can use this product safely.
- Avoid blocking the air intakes of the control unit, located on the right side of mattress base (when viewed from foot end).
- Bed frames used with the systems can vary greatly depending on the specific healthcare setting (ie hospitals, aged care, home care, etc). It is the responsibility of the caregiver to take the necessary precautions to ensure the safety of the patient. This includes, but is not limited to, the appropriate use of side rails to prevent falls.
- Only the control unit and mattress combination as indicated by Novis Healthcare should be used, otherwise the correct function of the product cannot be guaranteed.

User Capacity

- The maximum recommended safe working load for this system is 200 kilograms.
- The minimum recommended safe working load
  for this system is 30 kilograms.
- Do not exceed this safe working load or you risk injury to the patient or carer and damage to the product.

Safety Precautions

Protection Against Hazards

Fluids

Avoid spilling fluids on any part of the control unit. If spills do occur:

- ☐ Turn off control unit power and disconnect the unit from mains electricity supply.
- ☐ Immediately clean fluids from the casing by wiping with a soft cloth.

Ensure there is no moisture in or near the power inlet, control handset and power cord before reconnecting the power supply.

Check the operation of controls and other components around the spill area.

Fluid or liquid remaining on the electronic controls can cause corrosion that may cause the electronic components to fail. Component failures may cause the unit to operate erratically, possibly producing potential hazards to patient and carers.

Explosion Hazard

Equipment is not suitable for use in the presence of a flammable anaesthetic mixture with air, oxygen or nitrous oxide.

- ☐ Do not use in the presence of smoking materials or open flame – air flowing through the mattress will support combustion.
- ☐ Do not open the control unit – risk of electrical shock. Refer servicing to qualified service personnel.

Disposal

Dispose of all components (control unit including batteries, air filter, air cells, mattress cover and base) according to local procedures and regulations or contact Novis Healthcare for advice.

Power Cord

Periodically inspect the power cord for damage. The system should never be operated with a worn or damaged power cord. Keep the cord away from heated surfaces. Should the power cord be found to be worn or damaged, contact Novis Healthcare for a replacement.

Interference

Although this equipment conforms to the intent of directive IEC 60601-1-2[1] in relation to Electromagnetic Compatibility, all electrical equipment may produce interference. If interference is suspected, move equipment away from sensitive devices or contact Novis Healthcare.

1 IEC 60601-1-2. Medical Electrical Equipment - Part 1: General Equipments for Safety, Amendment No. 2. Collateral Standard. Electromagnetic Compatibility Requirements and Test).

System Preparation

Carefully unpack the system and inspect each item for any damage that may have occurred during transit and handling. Any damage or missing components should be reported to Novis Healthcare as soon as possible.

⚠ Confirm there are no sharp objects in the immediate area which may risk damage to the mattress replacement.

1 Remove your existing mattress and place the mattress replacement on top of your bed – printed top cover facing upwards and umbilical cord towards the base of the bed.

2 Attach to the bed by securing the adjustable straps, located on the underside of the mattress base under each bed end. On a profiling bed, secure the straps around the moveable sections of the base. Ensure the buckles are securely fastened and straps are pulled tight.

⚠ Do not secure mattress straps to bed side rails – straps will tear.

⚠ Ensure that straps do not interfere with the operation of the bed, and that the mattress is properly secured. Failure to do so could result in patient injury or equipment damage.

3 Check CPR sealing valve is closed – the turning tab and the arrows must be aligned to 'CLOSED' position.

"Sealed Mattress Base CPR"

System Preparation

4 Check all internal quick release air hose connectors are securely connected. Open the top cover by unzipping the CPR-side of the mattress (zipper located at foot end), check each connector is secure by pushing the air hose connectors together (there should be no movement). If a connection is open, a click will be heard once connector is firmly closed.

5 Hang the control unit over the foot end of the bed, using the inbuilt spring loaded hanging hooks. Pull the hooks by the rubber tabs to prevent accidentally trapping your fingers. Ensure it is secure before use; failure to do so could result in equipment damage.

6 Connect the umbilical connectors to the sockets on side of the control unit. Listen for a click as confirmation the connector is locked in place.

⚠ Straighten any twists in the umbilical cord air hoses to ensure uninterrupted air flow between the control unit and mattress.

⚠ Ensure the umbilical cord is not trapped between the mattress and bed. Failure to do so could result in an under inflated mattress leading to patient injury.

System Preparation

7 Feed power cord through the cord retention loops along either side of the mattress base. Insert power cord plug into the side of the control unit, then connect to an appropriate electrical outlet and switch on mains power. The Power indicator will glow amber, confirming the control unit is connected to a power source.

⚠ Ensure the power cord is not under strain; is free from obstruction; and is secured safely so as not to be a trip hazard.

8 On the control unit, press and hold the Power button for a minimum of three seconds. The Power indicator will glow green to indicate the system is operational and automatically inflating.

While inflating, the five Pressure Setting indicators will flash green and the Max Inflate indicator will flash amber. Allow up to 45 minutes for complete inflation.

Note: Non-Sealed Mattress model shown in image.

⚠ Do not lie a person (or any weight) on the mattress during initial inflation.

9 When initial inflation is complete, the Pressure Setting and Max Inflate indicators will extinguish, to indicate the system is ready for use.

The system automatically activates Alternating Mode, with AutoCair (automatic weight detection) feature active as the default setting.This feature monitors patient weight every alternation cycle and automatically selects the appropriate pressure setting accordingly.

This feature can be deactivated for manual pressure setting (see page 13 for details).

Patient Set Up

1. Once the mattress is fully inflated, bedding can be replaced.
   Secure sheets loosely enough to ensure they do not interfere with cell alternation.

2. The system will automatically set an optimum pressure for the patient's weight (weight range from 40 to 200 kg) and will continuously alternate over a 12 minute cycle.

3. Perform a 'bottoming out' test (a test to ensure the patient is adequately suspended away from the base).

"Bottoming Out" Test

1. Check system is in alternation mode by ensuring the indicator above the ALT button is illuminated, and that one set of air cells is inflated while the other set is deflated.
   You may need to unzip the cover to feel the cells for inflation.

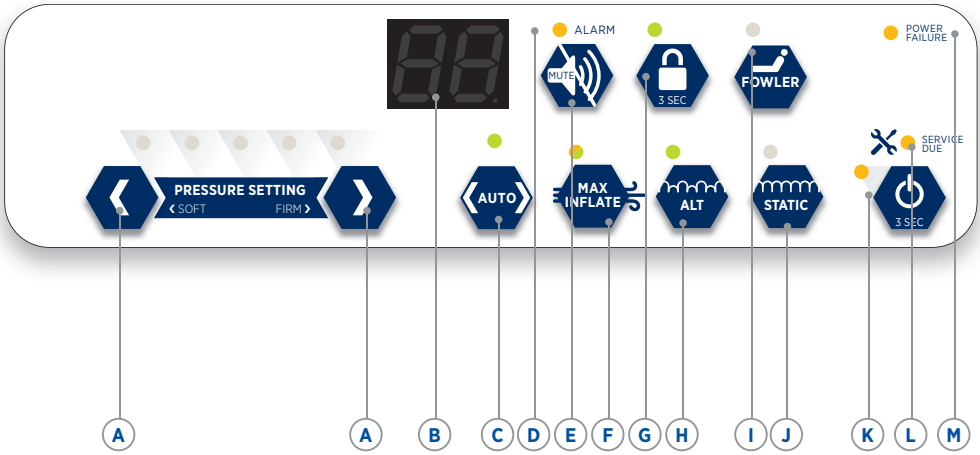
2. With the patient lying supine, unzip one side of the top cover just past sacral region (lower spine).

3. Slide your hand underneath the patient and feel for a deflated cell under the patient's lower spine (in Hybrid Mode, place hand underneath the foam sheet under the patient's lower spine) your hand should easily slide between patient and base.

4. If your hand can pass under the patient, then patient is adequately suspended. If not, manually adjust pressure to 'firmer' and wait at least one cycle (12 minutes) for pressure to increase before repeating step 3.
   If manual pressure adjustment fails, press Max Inflate to force mattress to full inflation. Wait at least one cycle (12 minutes) for pressure to reach maximum pressure, then press Alt to return to an alternation cycle. Wait at least one more cycle (12 minutes) for pressure to increase before repeating step 3.

5. We recommend repeating the Bottoming Out test at least 12 minutes after any manual pressure readjustment.

Operation - Control Panel



A Pressure Setting

Allows for manual pressure setting (softer or firmer)after the AutoCair feature is deactivated.

To set a manual pressure setting, press the Auto button (**C**) to deactivate the automatic weight sensing function. The green indicator above the Auto button will extinguish to confirm the function is no longer active.

Press the left arrow (Softer) to decrease pressure	Press the right arrow (Firmer) to increase pressure

Select a higher or lower pressure setting one step at a time, to ensure correct pressure is maintained.

⚠ It is recommended that Auto remain active whenever possible. Always perform a Bottoming Out test after the pressure setting has been changed (refer page 11).

B Alarm Code Display

Displays visual alarm code. Refer to Alarm Codes (on page 20 and on control unit) for details.

C Auto

Activates and deactivates the AutoCair feature (automatic weight sensing). The system automatically defaults to this feature at start up.

Manual pressure settings (**A**) cannot be selected while this feature is active.

To return to Auto mode after making a manual pressure setting adjustment, press the Auto button – the green indicator above the button illuminates to confirm this feature is active.

D Alarm Indicator

Flashing amber light illuminates whenever an alarm is triggered. Refer to the corresponding Alarm Code (pages 14 and 20) for detail.

E Alarm Mute

Operation - Control Panel

Turns audible alarm off temporarily. Press to mute the alarm.

Alarm will resound in 20 minutes if the issues has not been resolved, or immediately if new fault detected.

F Max Inflate

Rapidly inflates mattress to maximum pressure in Static mode. All pressure setting indicators will illuminate. No other pressure setting can be selected when the system is in Max Inflate mode. System will automatically return to Alternating mode after 20 minutes.

G Lock/Unlock

Lock and unlock the control unit panel to prevent unwanted interference.

Press and hold the button for a minimum of three seconds – a beep sounds and the light illuminates to indicate system is locked. When locked, only the Alarm Mute and Lock/Unlock button remain operational.

Press again for at least three seconds to unlock (beep sounds and light turns off).

H Alternate

Press to set Alternating mode (alternate cells cyclically inflating and deflating). Light illuminates to indicate Alternating mode is active.

I Fowler Boost

Press to activate Fowler Boost mode , which is recommended when the mattress is inclined to 30° or more, to increase mattress pressure to accommodate extra load in the sacral region. This feature helps to prevent the risk of bottoming out. A green light illuminates above the button to indicate that Fowler Mode is active.

J Static

Press to set Indefinite Static mode (all cells inflated with no dynamic alternation).

The pressure level will be the level selected in previous mode and LED of selection level will be on.

User to manually adjust the comfort level and LED for AUTO light turns off.

Indefinite Static mode does not revert automatically to Alternating mode.

K Power

Green light
power on

Amber light
standby power, power source connected

Press and hold the Power button for at least 3 seconds to turn the system power on and off.

L Service Due

When illuminated, indicates system is due for periodical service and maintenance procedures. Please contact Novis Healthcare for support. Equipment must only be serviced by qualified personnel.Refer to the next page on details of the above modes of operation.

M Power Failure

When illuminated, indicates no power supply to the control unit.

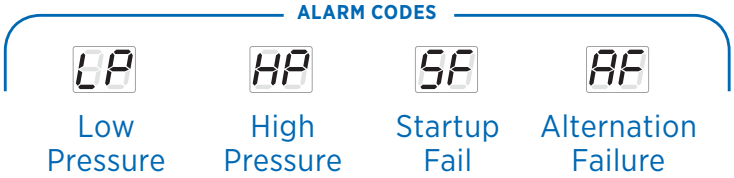
Operation - Control Panel

Alarm Codes

The system has four different alarm codes, each with a unique identifier that displays in the window. Details of each code are listed below, and displayed on a label on the front of the control unit.

Press the Alarm Mute button to silence the audible alarm (for a maximum of 20 minutes unless the issue has been resolved or a new issue has been identified), which will override the mute function.

Refer to Troubleshooting on page 20 for further support.



⚠ If the problem persists, contact Novis Healthcare for further advice about repair.

⚠ Do not try to open the control unit unless qualified. Doing so will void warranty and could cause personal injury or equipment damage.

Mode

In Alternating Mode, alternate mattress cells inflate and deflate following a fixed cycle time of 12 minutes, with the exception of static head cells.

Alternating mode is used for normal therapeutic function.

In Indefinite Static Mode, all mattress cells remain inflated, with adjustable pressure allowing for constant low pressure therapy benefits.

The system will operate in Indefinite Static Mode until manually changed to Alternating Mode.

⚠ The system will not automatically revert to Alternating mode from Indefinite Static mode.

Fowler Boost

Fowler Boost mode increases air pressure to the cells, to compensate for the additional load of a seated patient. This safety measure allows patients to remain in a seated position while minimising the risk of bottoming out.

Whenever the head of the mattress is inclined to a 30° or greater angle, press the Fowler Boost button to activate this safety mode (indicator glows green).

Once the head of the mattress is brought back to a reclined position (or below a 5° angle), press the Fowler Boost button again to deactivate.

Operation

Quick Twist CPR

Rapid deflation of the mattress may be required for emergency treatment (or to decommission the unit).

The Quick Twist CPR valve is located at the top of the mattress, to the right of the patient's head.

If emergency treatment is required, turn the CPR valve to the 'OPEN' position. This will rapidly deflate the entire system, including static head cells.

Sealed Mattress
Base CPR "OPEN"

To reinflate the system after the Quick Twist CPR valve has been released, turn the tab and align the arrows with the the 'CLOSED' position markers, ensure control unit is switched on and wait for the system to regain optimal pressure.

Sealed Mattress
Base CPR "CLOSED"

⚠ CLOSED indicator arrows should align with CPR indicator arrow.

Transport Function

STATIC To prepare for patient transport, press the Max Inflate button and wait 12 minutes to ensure all cells are fully inflated.

Remove the umbilical air connector from the control unit and connect the air hose with the male connector to the air hose with the female connector.

Air will remain in the system for up to 24 hours, depending on patient and environmental circumstances.

Operation

Deflation and Storage

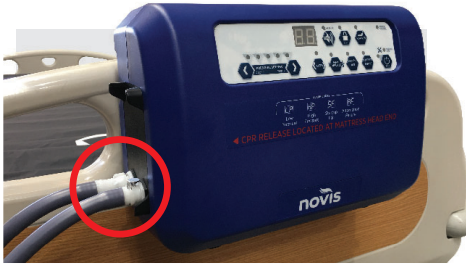
1 Press the power button for a minimum of three seconds to switch off the control unit.

2 Switch off mains power and unplug the power cord from the mains outlet.

3 Turn the Quick Twist CPR to OPEN to release air and deflate all cells.

Note: Non-Sealed Mattress model shown in image.

4 Press the release buttons on the sides the on the umbilical cord connectors to release the air hoses.



5 Once air has been released from the system, detach the mattress from the bed by unfastening the straps, then fold and roll the mattress from head end to foot end for storage.

6 Return all items to the custom carry bag for safe keeping.

Care and Cleaning

To prevent cross contamination, the mattress should be examined and disinfected between patient use.

Clean the mattress in accordance with local infection control policy and government regulations. Failure to do so could cause patient or personal injury.

The mattress is not protected against excessive amounts of fluid. Do not immerse the control unit in fluid.

Switch off and disconnect the control unit from mains power supply before cleaning. Failure to do so couldresult in equipment damage or electric shock.

Do not use high temperature autoclave steam cleaning devices or phenolic based products for cleaning. This could result in damage to the equipment and may result in damage to the polyurethane coating, or negate the biocompatibility properties of the fabric.

Cleaning and Infection Control

It is recommended that the ProCair system is cleaned every two weeks if in constant use.

Top Cover Cleaning

Unzip and remove the top cover from the base before washing (refer page 19 for instructions).

For basic care and cleaning, wipe down with warm water containing PH neutral detergent. The top cover can also be machine washed at a maximum of 95° C (203° F) using neutral detergents.

Refer to the top cover wash tag for detailed cleaning instructions.

Do not use system without top cover.

Base Cleaning

Swab the mattress base, air cells and the foam sheet with a solution of sodium hypochlorite or similar (up to 10,000 ppm available chlorine). Dry thoroughly before reassembly.

Do not machine wash or tumble dry the air cells or mattress base.

If cleaning or disinfection is required, do not allow fluid to enter air cells and air hoses.

Control Unit/Handset Cleaning

Disconnect control unit from mains power before cleaning. Gently wipe down the external case with a soft cloth.

Soak the cloth in warm water containing mild PH neutral detergent, and wring any excess water before gently wiping all external controls. Repeat the process with a dry cloth to remove excess moisture. A soft bristled nylon brush can be used to gently clean crevices.

Ensure the control unit is disconnected from mains power before cleaning.

Do not spray disinfectant directly on to the control unit, or immerse the unit in water or other fluid.

Disinfection

The mattress, top cover and control unit may be decontaminated by a solution of sodium hypochlorite or similar (up to 10,000 ppm available chlorine). Dry thoroughly before use.

Care and Cleaning

For infection control, swab with a solution of sodium hypochlorite or similar (up to 10,000 ppm available chlorine). Dry thoroughly before reattaching and use.

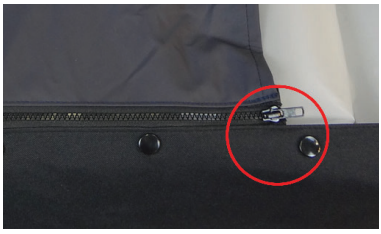
Top Cover Removal

1. Raise the waterfall skirt and locate the zippers at the foot end of the mattress.
2. Starting with either zipper, run the zipper along the side of the mattress towards the centre of the head end.
3. Repeat with other zipper. The top cover can now be detached from the mattress base. To reattach the top cover to the mattress base, first reattach the zipper running in the opposite direction to the CPR. Second reattach the zipper running towards the CPR. Then close both zippers by zipping towards the foot end of the mattress.

Air Cell Disconnection

1. Disconnect air from the cell by disconnecting all quick release connectors from the air cell. The static head cells have one connector, while all other cells have two connectors.
2. From one side of the mattress base, locate the cell retaining strap and undo the press stud to release. Feed the strap back through the mattress base to detach the air cell for from the base. Repeat this process on the other side of the mattress base to detach the air cell completely.
3. Reverse the above instructions to reconnect an air cell.

⚠ Refer to the relevant Technical Services User Guide for detailed maintenance support.



Note: Non-Sealed Mattress model shown in image.

Note: Non-Sealed Mattress model shown in image.

Troubleshooting

Alarm Codes

An amber light flashes accompanied by an audible alarm and accompanying Alarm Code display, to indicate the control unit or mattress is experiencing a fault. The light will continue to flash until the fault is cleared. The audible alarm can be silenced for 20 minutes by pressing the Alarm Mute button. It will reactivate if the fault is not rectified or if a new fault is detected.

ALARM CODE	TRIGGER	SOLUTION
 Low Pressure	Air cells have failed to reach the pre-set pressure	Ensure the main power is turned on and power cord is connected to mains and control unit. Check control unit/mattress air connections are fitted securely, and reconnect umbilical cord if loose. Ensure control unit is turned on. Ensure CPR valve is set to CLOSE position. Replace CPR valve if air leak is found. Check air intake from filter is not blocked by linen/dust. Replace with new filter if needed.
For faster mattress reinflation once the air leak has been closed, press **Max Inflate** *and wait until the LP alarm code stops flashing. Press the* **Alt** *button to resume alternation.*		
 High Pressure	Air cell pressure exceeds the pre-set pressure	Check the air hoses for kinks, obstructions or damage. Undo any kinks and obstructions.
 Startup Fail	Air cells have failed to reach operating pressure after turning on.	Turn off control unit and disconnect from power. Reconnect to power after 1 minute and restart initiation process. Check any leaks on control unit/mattress air connections, CPR valve and air cells.
 Alternation Failure	Air cells have failed to alternate	Remove patient from mattress. Turn off control unit and disconnect from power. Reconnect to power after 1 minute and restart initiation process, return patient to mattress once initiated and alternation has resumed. If issue persists, contact Novis Healthcare – a service may be required.

Troubleshooting

General Troubleshooting

FAULT	TRIGGER	SOLUTION
	Power Failure	Check control unit is connected to the mains power supply. Check for loose connection on plug and main power is switched on. Check the fuses in control unit. Replace if necessary. Check condition of power cord and plug. Check if mains socket is faulty.
	Reminder that periodic service is due.	Please contact Novis Healthcare for system maintenance. This equipment must only be serviced by a qualified service agent.
Control unit does not operate; no display lights		Check control unit is connected to the mains power supply. Check for loose power cord connection and ensure main power is switched on. Check the fuses in control unit. Replace if necessary. Check condition of power cord and plug. Check if mains socket is faulty.
Patient is sinking or 'bottoming out' whilst lying flat on the mattress		The pressure may be set too low for the patient's weight – increase the pressure setting by pressing the firmer pressure arrow (right). Check for air leaks in the mattress and air hoses.
Control unit controls lock up, 'freeze'.		Turn off and unplug the control unit Rest the control unit for one minute before reconnecting the control unit to mains power and switching on.

If the problem persists, move patient to an alternate product and contact Novis Healthcare.

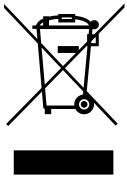
Technical Specifications

SYSTEM	MODEL		ProCair	ProCair Sealed Base
	SYSTEM CODE		APMPC-R01	APMPC-R01S
	CAPACITY		40 - 200 kg	
	NO OF CELLS		18, including 3 static head cells, All cells include a static lower chamber (cell-in-cell)	
	COMPLIANCE		IEC60601-1, IEC60601-1-2 and IEC60601-1-11	
	ARTG		289458	
CONTROL UNIT	PART NO.		APMPC-CU01	
	CONTROL SYSTEM		Digital micro controller	
	CYCLE TIME		12 minutes (fixed)	
	SUPPLY VOLTAGE		AC100 - 240V / 50Hz-60Hz	
	MAXIMUM CURRENT		0.3 - 0.2 A	
	FUSE RATING		T2AL 250V	
	MIN / MAX PRESSURE		20 ~ 60 mmHg +/- 6 mmHg	
	PROTECTION TYPE		Class II Type BF	
	INGRESS PROTECTION RATING		IP21	
MATTRESS DIMENSIONS	LENGTH		2000 mm	
	WIDTH		880 mm	
	HEIGHT		200 mm	
	WEIGHT		8 kg	8.5 kg
	MATERIAL	TOP COVER	PU laminated nylon	
		BASE COVER	PVC laminated polyester (non-sealed base) TPU laminated PU (sealed base)	
		AIR CELL	TPU-laminated nylon	
CONTROL UNIT DIMENSIONS	HEIGHT	224 mm		
	WIDTH	350 mm		
	DEPTH	135 mm		
	WEIGHT	3.1 kg		
OPERATING ENVIRONMENT	AIR HUMIDITY	OPERATION	30% to 75% non-condensing	
		STORAGE	30% to 90% non-condensing	
	AMBIENT TEMPERATURE	OPERATION	15° C to 35° C	
		STORAGE	5° C to 60° C	
	ATMOSPHERIC PRESSURE RANGE		700 hPa to 1060 hPa	
	ALTITUDE		-310 metres to 3000 metres	

Technical Specifications

ProCair King Single	ProCair King Single Sealed Base
APMPC-R01K	APMPC-R01SK
40 - 200 kg	
18, including 3 static head cells, All cells include a static lower chamber (cell-in-cell)	
IEC60601-1, IEC60601-1-2 and IEC60601-1-11	
289458	
APMPC-CU01	
Digital micro controller	
12 minutes (fixed)	
AC100 - 240V / 50Hz-60Hz	
0.3 - 0.2 A	
T2AL 250V	
20 ~ 60 mmHg +/- 6 mmHg	
Class II Type BF	
IP21	
2000 mm	
880 mm	
200 mm	
8 kg	8.5 kg
TOP COVER	PU laminated nylon
BASE COVER	PVC laminated polyester (non-sealed base)
AIR CELL	TPU-laminated nylon
224 mm	
350 mm	
135 mm	
3.1 kg	
OPERATION	30% to 75% non-condensing
STORAGE	30% to 90% non-condensing
OPERATION	15° C to 35° C
STORAGE	5° C to 60° C
700 hPa to 1060 hPa	
-310 metres to 3000 metres	

Waste Disposal



This product has been supplied from an environmentally aware manufacturer that complies with the European Community's Waste Electrical and Electronic Equipment Directive (WEEE).

This product may contain substances that could be harmful to the environment if disposed of in places (landfills) that are not appropriate according the legislation. Please be environmentally responsible and contact your local authority on available options to recycle this product at its end of life.

Service Life

The expected service life of a control unit and a mattress is highly dependent on frequency of use, servicing, care and maintenance.

To maintain the condition of the alternating mattress system, service the system regularly according to the schedule recommended by Novis.

Do NOT use unapproved accessories or attempt to modify, disassemble or otherwise misuse the ProCair system or any of its components.

Technical Specifications

⚠ Medical electrical equipment needs special precautions regarding EMC and needs to be installed according to the EMC information provided. Careful consideration of this information is essential when stacking or collocating equipment and when routing cables and accessories.

⚠ RF mobile communications equipment can effect medical electrical equipment.

Recommended separation distances between portable and mobile RF communications equipment and the ProCair control unit

The ProCair control unit is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the ProCair control unit can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the ProCair control unit 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 = 1.2 √P	80 MHZ TO 800 MHZ d = 1.2 √P	800 MHZ TO 2,5 GHZ d = 2.3 √P
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance **d** in metres (**m**) can be estimated using the equation applicable to the frequency of the transmitter, where p is the maximum output power rating of the transmitter in watts (**W**) according to the transmitter manufacturer.

NOTE1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Technical Specifications

Guidance and Manufacturer's declaration-electromagnetic emissions

The ProCair control unit is intended for use in the electromagnetic environment specified below. The customer or the user of the ProCair control unit should ensure that it is used in such an environment.

Emission test	Compliance	Electromagnetic environment-guidance
RF emissions CISPR 11	Group 1	The ProCair control unit 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 ProCair control unit 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	Compliance	

Guidance and Manufacturer's declaration-electromagnetic immunity

The ProCair control unit is intended for use in the electromagnetic environment specified below.
The customer or the user of the ProCair control unit should ensure 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	Contact ±8 kV	Contact ±8 kV	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%
	Air ±2, ±4, ±8, ±15 kV	Air ±2, ±4, ±8, ±15 kV	
Electrical fast transient/burst IEC 61000-4-4	± 2kV for power supply lines	± 2kV for power supply lines	Mains power quality should be that of a typical home healthcare and professional healthcare environment.
	± 1kV for input/ output lines	Not applicable	
Surge IEC 61000-4-5	± 0.5, ±1 kV line(s) to line(s)	± 0.5, ±1 kV line(s) to line(s)	Mains power quality should be that of a typical home healthcare and professional healthcare environment.
	± 0.5, ±1, ± 2kV line(s) to earth	Not applicable	

Technical Specifications

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Voltage Dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	Voltage dips: 0 % U_T; 0.5 cycle 0 % U_T; 0.1 cycle 70 % U_T; 25/30 cycles	Voltage dips 0 % U_T; 0.5 cycle 0 % U_T 0.1 cycle 70 % U_T; 25/30 cycles	Mains power quality should be that of a typical home healthcare and professional healthcare environment. If the user of the ProCair control unit requires continued operation during power main interruptions, it is recommended that the ProCair control unit be powered from an uninterruptible power supply or a battery.
	Voltage interruptions: 0 % U_T; 250/300 cycle	Voltage interruptions: 0 % U_T; 250/300 cycle	
Power frequency (50, 60 Hz) magnetic field IEC 61000-4-8	30 A/m 50 Hz or 60 Hz	30 A/m 50 Hz	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical home healthcare and professional healthcare environment.
Conducted RF IEC 61000-4-6	3 Vrms: 0.15 MHz – 80 MHz	3 Vrms: 0.15 MHz – 80 MHz	Portable and mobile RF communications equipment should be used no closer to any part of the ProCair control unit, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance: d = 1,2 d = 1,2 √P 80 MHz to 800 MHz d = 2,3 √P 800 MHz to 2.5 GHz Where **P** is the maximum output power rating of the transmitter in watts **(W)** according to the transmitter manufacturer and d is the recommended separation distance in metres **(m)**. Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, [A] should be less than the compliance level in each frequency range.[B] Interference may occur in the vicinity of equipment marked with the following symbol:
	6 Vrms: in ISM and amateur radio bands between 0.15 MHz and 80 MHz	6 Vrms: in ISM and amateur radio bands between 0.15 MHz and 80 MHz	
	80% AM at 1 kHz	80% AM at 1 kHz	
Radiated RF IEC 61000-4-3	10 V/m 80 MHz – 2.7 GHz 80 % AM at 1 kHz	10 V/m 80 MHz – 2.7 GHz 80 % AM at 1 kHz	

⚠ UT is the A.C. mains voltage prior to application of the test level.

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

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

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

B Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Technical Specifications

Manufacturer's declaration-electromagnetic immunity Test specifications for Enclosure Port Immunity to RF wireless communications equipment

The control unit is intended for use in the electromagnetic environment (for home healthcare and professional healthcare) specified below. The customer or the user of the control unit should assure that it is used in such an environment.

Test frequency (MHz)	Band [A] (MHz)	Service [A]	Modulation [B]	Maximum power (**W**)	Distance (**m**)	Immunity test level (V/m)	Compliance level (V/m) (for home healthcare)
385	380 –390	TETRA 400	Pulse modulation [B] 18 Hz	1.8	0.3	27	27
450	430-470	GMRS 460, FRS 460	FM [C] ±5 kHz deviation 1 kHz sine	2	0.3	28	28
710	704-787	LTE Band 13, 17	Pulse modulation [B] 217 Hz	0.2	0.3	9	9
745							
780							
810	800-960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation [B] 18 Hz	2	0.3	28	28
870							
930							
1,720	1700-1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation [B] 217 Hz	2	0.3	28	28
1,845							
1,970							
2,450	2 400-2 570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation [B] 217 Hz	2	0.3	28	28
5,240	5 100-5 800	WLAN 802.11a/n	Pulse modulation [B] 217 Hz	0.2	0.3	9	9
5,500							
5,785							

NOTE If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the ME EQUIPMENT or ME SYSTEM may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.

A For some services, only the uplink frequencies are included.

B The carrier shall be modulated using a 50 % duty cycle square wave signal.

C As an alternative to FM modulation, 50 % pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.

Warranty Statement

Limited Warranty

This warranty is provided by Novis Healthcare (ABN 45 102 735 491) of Unit 12/12 Mars Road Lane Cove West New South Wales 2066.

Novis Healthcare (Novis) products are manufactured to the highest quality standards and are thoroughly tested and inspected before leaving our factory. In addition to any statutory rights and remedies you may have, Novis warrants all of its products sold directly or via an Authorised Novis Australia Dealer against defective workmanship and faulty materials from the date of purchase by the end user for a period of twelve months unless otherwise specified for that product and its components.

Warranty Claims

To claim under this warranty, please contact Novis Healthcare and have your receipt or proof of purchase available. Novis Healthcare may need to assess the defect before determining any claim, and additional information may be requested to process your claim. Claims without proof of purchase may not be able to be processed.

Novis Healthcare may at its option inspect the goods on site or require them to be returned to its premises or one of its Authorised Service Agents in person or freight prepaid by you.

Novis will undertake at its option, to repair or replace, free of charge, each product or part thereof on the condition that:

- ☐ The product found on examination, to be suffering from a manufacturing defect;
- ☐ The product or relevant part has been serviced regularly by Novis or one of its Authorised Service Agents and has not been subjected to misuse, neglect or been involved in an accident;
- ☐ The repairs are not required as part of normal wear and tear.

At our option

- ☐ Goods repaired may be replaced by refurbished good of the same type rather than being repaired.
- ☐ Refurbished parts may be used to repair goods.

Novis Healthcare will not be held responsible for any repair other than those carried out by it or one of its Authorised Service Agents.

Warranty repairs do not extend the length of the warranty period.

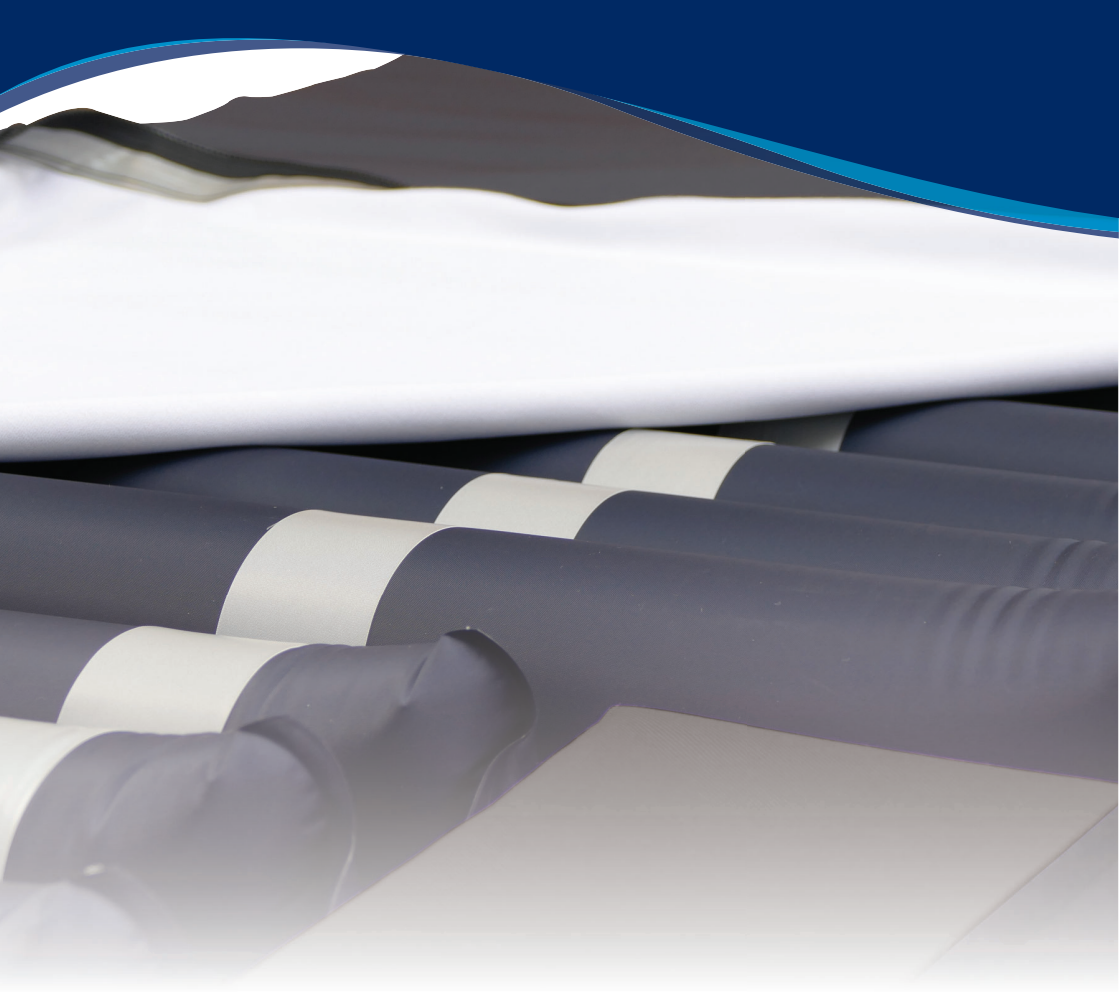
Limited Liabilities

Our liability under this manufacturer's warranty is subject to us being satisfied that a defect was caused by faulty parts, manufacture or workmanship, and was not caused or substantially contributed to by other factors or circumstances beyond our control, including (but not limited to) defective installation, maintenance or repair, product modification or alteration, any neglect, misuse, or excessive use, normal wear and tear or failure to follow manufacturer's instructions.

IMPORTANT NOTICE FOR AUSTRALIAN CONSUMERS:

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. To obtain compensation, you will need to provided documentary evidence of the loss or damage suffered and documentary evidence that such loss or damage was a reasonable foreseeable consequence of a failure Novis Healthcare to comply with a consumer guarantee under the Australian Consumer Law. Subject to the provisions of the Australian Consumer Law, Novis Healthcare excludes, to the fullest extent permitted by law, all liability in respect of loss of profit or other economic loss, direct to indirect or consequential, special, general or other damages or other expenses or costs which may include negligence.

For further information relating to any specific product, please refer to the User Guide.



novis

Pressure care and patient handling specialists

1300 738 885

12/12 Mars Rd,
Lane Cove West, NSW 2066

novis@novis.com.au

061020202F