novis®

enabling independence

ProCair Trio

User Guide

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 specifi cations 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 Trio 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
- ☐ Wheeled 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.

Part Numbers of this system are:

APMPC-R05

APMPC-R05K

Intended Use

Indications

The ProCair Trio 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

- This product should not be applied to patients suffering from polytrauma with fractures of spine, pelvis, extremities and skull. Patients with neurological impairments and missing body perception need their physician's prescription. Alternating pressure should not be applied to pain or pain-sensitive patients.
- People who suffer from allergies against any of the substances used for mattress or cells body should not be positioned on the mattress. This product is designed for users whose age is above 12 years.

Intended Care Setting

Intended care settings for the ProCair Trio mattress replacement systems are Home healthcare and Professional healthcare.

Working Environment

Control Unit:

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

Shipping/ Storage Environment

Control Unit:

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

Mattress:

- Temperature: -10°C ~ 40°C
- Humidity: 10% to 90%

Warning and Cautions

- Keep the control unit and mattress away from open flame.
- Keep the mattress away from sharp objects.
- Do not place a heating device close to the mattress system.
- Weight guides should be used for guidance only, professional judgement should be used at all times.

The Alternating System should always be used in accordance with your Institutions pressure care guidelines.

- Re-positioning of the patient is always recommended when using an Alternating Pressure Air Mattress (APAM).
- The Control unit can only be repaired by an authorised technician.
- The Pump should only be repaired by an authorised professional.
- No modification of this equipment is allowed.
- Do not drop the control unit or store it in direct sunlight or extreme cold conditions.

Intended Use

- Do not use the system in the presence of any flammable gases (such as Anesthetic Agents).
- Power cable & pump shall be placed at the foot-side of the patient to prevent any risk of strangulation due to cable.
- Battery is installed inside device. Battery can only be replaced by an authorised technician.
- This device should be not be used adjacent to or stacked with other equipment.
- The device should be positioned where it can be easily disconnected from main power outlet.

Do not obstruct the mains plug or position the equipment where the connection to the mains line can be accidentally disconnected.

If pain, irritation, numbness, swelling, or redness occurs discontinue use and contact a healthcare professional.

Close supervision is necessary when the product is used by, on, near children or physically challenged individuals.

This device can be used in home healthcare and professional healthcare environment.

Medical electrical equipment needs special precautions regarding EMC and needs to be installed according to the EMC information provided.

This device should not be used adjacent to or stacked with other equipment.

Connecting System to Other Devices

There are no other devices necessary for normal operation.

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

The ProCair Trio 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 quali fied 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 either side of the mattress replacement 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 at the rear of the unit. Do not place items such as blankets over the control unit.
- 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 patient weight for this system is 250 kilograms.
- The minimum recommended patient weight for this system is 40 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 openflame – airflowing 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

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 CompatibilityRequirements 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.

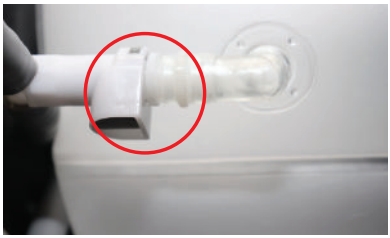
⚠ Ensure that straps do not interfere with the operation of the bed, and that the mattress is properly secured. Failure to do so could result in patient injury or equipment damage.

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

⚠ Indicator CLOSED indicator arrows should align with CPR indicator arrow.

System Preparation

4 Check that the foot cell 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 foot cell 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 con firmation the connector is locked in place.

⚠ Ensure the correct control unit is used. The mattress is not compatible with other control unit which looks similar.

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

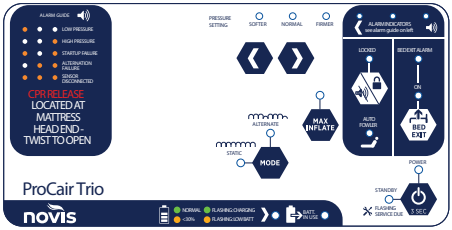
⚠ Ensure the umbilical cord is not trapped between the mattress and bed. Failure to do so could result in an under in flated mattress leading to patient injury.

System Preparation

7 Feed power cord through the cord retention flaps along either side of the mattress base. Ensure all press studs are fastened. Insert power cord plug into the side of the control unit, then connect to an appropriate electrical outlet and switch on mains power. The **Standby** indicator on the control unit 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 in flating. While inflating, the **Pressure Setting** indicators will flash blue and the **Max Inflate** indicator will flash green. Allow up to 20 minutes for complete in flation. Do not lie a person (or any weight) on the mattress during initial in flation.



⚠ Do not place a person (or any item) on the mattress during initial in flation.

9 When initial in flation is complete, the **Pressure Setting** and **Max Inflate** indicators will extinguish, to indicate the system is ready for use. The system automatically defaults to **Alternating Mode** at start up, with AutoCair feature (automatic weight detection) always in operation to select an appropriate pressure for patient support according to mattress load, unless overridden manually.

Patient Set Up

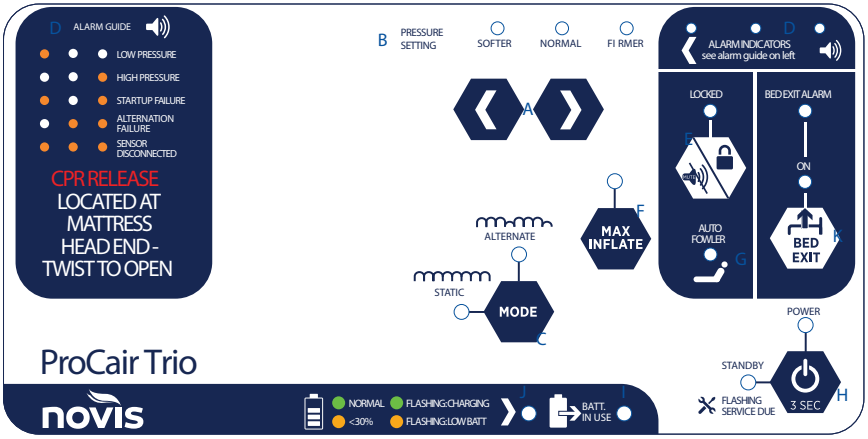
Once initial in flation is complete, a patient may be placed on the system.

1. Once the mattress is fully in flated, bedding can be replaced.
   Secure sheets loosely enough to ensure they do not interfere with cell alternation.
2. Place the patient on to the ProCair Trio mattress.
   The system will automatically set an optimum pressure for the patient's weight (weight range from 40 to 250 kg) and will continuously alternate over a 15 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 ALTERNATE indicator is illuminated ,and that three out of every four air cells is in flated while the fourth cell is deflated.
   You may need to unzip the cover to feel the cells for in flation.
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 de flated cell under the patient's lower spine. The inner static cell will remain inflated, however 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 (15 minutes) for pressure to increase before repeating step 3.
   If manual pressure adjustment fails, press Max In flate to force mattress to full in flation. Wait at least one cycle (15 minutes) for pressure to reach maximum pressure, then press Alt to return to an alternation cycle. Wait at least one more cycle (15 minutes) for pressure to increase before repeating step 3.
5. We recommend repeating the Bottoming Out test at least 15 minutes after any manual pressure readjustment and regularly every 2 hours during the system in operation.

Operation - Control Panel



A Pressure Setting - Fine Tuning

The control unit constantly monitors mattress loading to automatically adjust to the optimal pressure setting.
For individual comfort or therapy needs, slight adjustments to the automatic pressure setting can be made. These arrows allow optimal pressure setting to befine tuned softer or firmer.

"Normal" light illuminates to indicate standard weight detection is functioning.

⚠ The control unit would not allow the pressure setting to go below the safe lower limit for the patient according to mattress load

Press the left arrow to select a softer pressure pressure range

Press the right arrow to select a firmer pressure pressure range

B Pressure Setting Display

Displays pressure setting range selected.

C Mode

Pressing the Mode button toggles between Alternate mode and Indefinite Static mode (all cells inflated with no dynamic alternation) Indefinite Static mode allows for constant low pressure therapy and user adjustable pressure settings.

The selected mode is indicated by an LED indicator.

D Alarm Indicator

The three amber LEDs light up in 5 different patterns to indicate different faults the system may be experiencing, this is accompanied by an audible beeping signal. Refer to the alarm guide on the left side on the control panel to look up the fault indicated, also refer to the corresponding troubleshooting guide (page 21) for detail, alarms include:

LOW PRESSURE - possible loss of pressure

Operation - Control Panel

HIGH PRESSURE - mattress pressure too high

STARTUP FAILURE - system has failed to reach optimal working pressure from startup

ALTERNATION FAILURE - mattress has failed to alternate

SENSOR DISCONNECTED - umbilical connector not plugged in properly or not detected

E Alarm Mute/Panel Lock

Pressing the button brie fly turns audible alarm off

temporarily. Alarm will reactivate in 20 minutes if the issues has not been resolved, or immediately if new fault detected.
Long-press the button for a minimum of 3 seconds locks or unlocks the control unit panel to prevent unintended interference (e.g. by unauthorised personnel).

The "LOCKED" light will be lit when the control panel is locked.

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 In flate mode. System will automatically return to Alternating mode after 20 minutes.

G Automatic Fowler Boost Indicator

Automatic Fowler Boost mode is activated when the mattress backrest detected to be inclined by 30° or more, to increase mattress pressure to accommodate extra loading in the sacral region. This feature helps to prevent the risk of bottoming out.

A green "AUTO FOWLER" light illuminates when this function is active. It is automatically deactivated when the mattress backrest is pro filed below 5°.

H Power/Standby and Service Indicator

Press and hold the Power button for at least 3 seconds to turn the system power on and off. A green light above the button is lit when the control unit is switched on and running.

The "Standby" light is lit to indicate unit is connected to mains electricity but not switched on. When periodical servicing is required, the amber Standby light will flash. Please contact Novis Healthcare for system maintenance.

I Battery In Use Indicator

When mains power is disconnected either intentionally or unintentionally (e.g. during a power outage), the control unit will automatically switch to backup battery power to provide up to three hours of continued operation.
The BATT. IN USE light will flash, accompanied by an audible beeping alarm to indicate the control unit has switched to battery power, in case the user needs to take corrective action.
Once the audible alarm has been silenced by pressing the MUTE button, it will not sound again until mains power is restored and disconnected again.

When the " Battery In Use" Indicator is illuminated, please check if mains power is disconnected unintentionally.

J Battery Charge Indicator

Lights up in green or amber in the following patterns to indicate battery charging status:

Operation - Control Panel

- CONTINUOUS GREEN - normal
- FLASHING GREEN - charging
- CONTINUOUS AMBER - 30% remaining power or less
- FLASHING AMBER (with audible alarm) - 10% remaining power or less
- When the light is flashing in amber, immediate connect control unit to mains power to avoid interruption to therapy due to power failure

Note: It will take 16-20 hours to fully charge the battery.

K Bed Exit Alarm

Pressing the button turns Bed Exit Alarm on and off. The ON light above button illuminates to indicate the function is active.

When Bed Exit Alarm is active, as soon as the sensor in the sacral area of the mattress detects patient egress, it will sound an audible beeping alarm and the BED EXIT ALARM light will flash.

The alarm may be silenced by pressing the mute button, when sensor pad detects patient presence or when the alarm is turned off.

Operation - Mode

Mode

In Alternating Mode, alternate mattress cells in flate and de flate following a fixed cycle time of 15 minutes, with the exception of static head cells.

Alternating mode is used for normal therapeutic function.

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

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

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

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

Auto Fowler Boost

Fowler Boost mode will automatically become active whenever the head of the mattress is inclined to a 30° or greater angle.

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

Once the head of the mattress is brought back to a reclined position (or below a 5° angle), Fowler Boost mode will automatically disengage.

Backup Battery

The lithium-ion backup battery is designed to provide temporary uninterrupted therapy when mains power is unavailable eg during patient transfer or in a power outage.

The control unit automatically switches to battery power when mains power is disconnected during operation (when system is switched on and running).

An alarm will sound to alert users that the control unit has switched to battery operation in case the change was unintended, so that mains power can be reconnected if necessary. Press MUTE to disable the audible alarm, which will not sound again until mains power has been restored and disconnected again.

Up to 3 hours of continuous operation can be expected from a new, fully charged battery, however battery capacity will decrease with use as it ages.

The backup battery automatically recharges when mains power is connected. The control unit does not need to be switched on to recharge the battery.

Recharge Time:

Control Unit OFF - up to 6 hours

Control Unit RUNNING - up to 24 hours the BATTERY CHARGE INDICATOR light will flash in green during charging.

When the system is not in use for extended periods, it is recommended that the battery be charged every 6 months to maintain its condition.

The battery unit is a consumable part and has a usable life of up to 3 years and should be replaced by an authorised Novis repair agent.

Operation - Pull Cap CPR Release

CPR Release

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

The Rapid 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 in 10 seconds.

To reinflate the system after the Rapid CPR valve

has been released, remove patient from mattress, turn the cap in either direction by one notch to the 'CLOSED' position. Ensure control unit is switched on, press MAX INFLATE and wait for the system to regain pressure.

Return patient to mattress, then select Alternation mode to continue therapy.

Transport Function

MAX INFLATE

To prepare for patient transport, press the Max Inflate button and wait 15 minutes to ensure all cells are fully inflated.

Remove the umbilical air connector from the control unit and firmly place cap over connector until two clicks are heard. Air will remain in the system for up to 24 hours, depending on patient and environmental circumstances.

Specialised Heel Therapy

The specialised HeelCair zone enables the seven narrow alternating air cells in the heel zone to be disconnected, to remove all pressure on a patient's heels without interruption to mattress alternation.

To disconnect each of the seven heel zone cells, unzip the top cover and locate the top air hose connector of each heel cell. Press the grey tab and remove the male connector from the air supply line. A one-way air valve will protect the rest of the system from deflation and the heel cell will immediate deflate.

Bed Exit Alarm

When activated this feature constantly monitors for patient presence and signals to indicate the patient has left the mattress.

To activate the CairAlert function, lay patient on the mattress and press Bed Exit – the ON indicator glows green to confirm function is active.

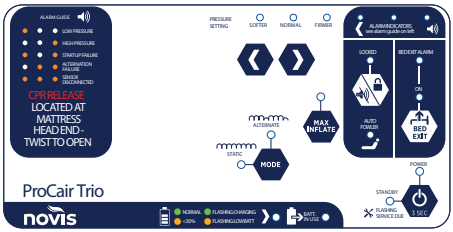
If the patient leaves the mattress, an audible alarm sounds and the BED EXIT ALARM light will flash.

To reset, press Alarm Mute and return patient to the mattress, the alarm will reset once patient weight is detected.

To deactivate the alarm, press BED EXIT button again, the ON light will extinguish to indicate the alarm is off.

Operation - Deflation / Storage

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 Open CPR release to release air and deflate all cells.

4 Press the two locking tabs on the umbilical cord connector to detach the connector from the control unit.

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 could result 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 Trio 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 18 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 and Cells Cleaning

Swab the mattress base and cells 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 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.

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.

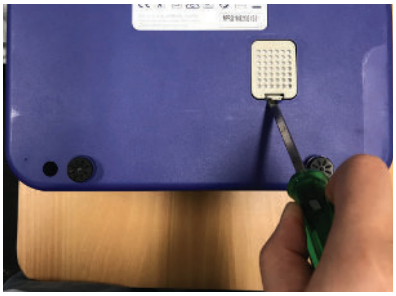
Care and Cleaning

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.

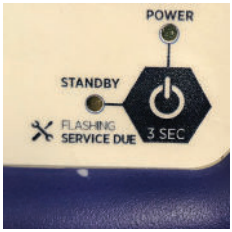
Air Cell Disconnection

1. Switch off power supply to the control unit and disconnect the air hoses and power cord.
2. Place the control unit face down on a soft,flat surface with back panel uppermost (use a soft cloth to prevent scratches).
3. Use a small screwdriver to carefully remove the air filter cover. Clean the dust from the filter or discard and replace with a new filter.
4. Refit the airfilter cover to the control unit before use. It is recommended that the aifilter be replaced each year. Replacement aifilters are available.



Service Due

To ensure optimum performance and minimise potential safety risk, Novis or its authorised service agent should perform Preventative Maintenance Service check annually for the mattress system.



Note: This does not indicate any component of sub-assembly is defective.

The Service Due amber light will be lit when the mattress is running for approx. 12 months (8760 hrs).reactivate if the fault is not rectified or if a new fault is detected.

Refer to Novis full instructions.

Troubleshooting

Alarm Codes

A set of 3 amber lights will be lit in 5 different patterns, accompanied by an audible alarm and accompanying Alarm Code display, to indicate the control unit or mattress is experiencing a fault. There are also additional warning lights, accompanied by audible beeping alarm, to alert the user immediate rectification is needed.

The lights 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 recti fied , or if a new fault is detected.

CODE AND TRIGGER	SOLUTION
 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 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.
 Air cell pressure exceeds the pre-set pressure	Check the air hoses for kinks, obstructions or damage. Undo any kinks and obstructions.
 Air cells have failed to reach operating pressure after turning on	Turn of 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.
 Air cells have failed to alternate	Remove patient from mattress. Turn of 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.
 Control unit has failed to detect connection to patient weight sensor and exit pad sensor	Ensure air hose connector is securely fastened and reconnect if loose.
 Bed Exit pad has detected patient egress.	Check for patient on mattress. To reset bed exit alert, turn off bed exit alarm by pressing the "Bed Exit" button, return patient to mattress, press "Bed Exit" again to reactivate alert.
 Battery charge below 10% of capacity	Check the control unit is connected to the mains power supply and the power is operational.

Troubleshooting

General Troubleshooting

FAULT AND TRIGGER	SOLUTION
 Mains power has disengaged	If battery-powered operation is unintended, check for a power failure.
 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.

For faster mattress reinflation, press MAX INFLATE and wait until the LP alarm code stops flashing. Press the ALT button to resume alternation.

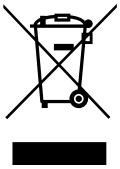

If the problem persists, move patient to an alternate product and contact Novis Healthcare.

Technical Specifications

SYSTEM	MODEL		ProCair Trio	ProCair Trio King Single
	SYSTEM CODE		APMPC-R05	APMPC-R05K
	CAPACITY		40 - 250 kg	
	NO OF CELLS		20, including 3 static head cells and 7 disconnectable heel cells. All alternating 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-CU05	
	CONTROL SYSTEM		Digital micro controller	
	CYCLE TIME		15 minutes (fixed)	
	SUPPLY VOLTAGE		AC100 - 240V / 50Hz-60Hz	
	MAXIMUM CURRENT		0.4 ~ 0.2 A	
	FUSE RATING		T2AL 250V	
	MIN / MAX PRESSURE		20 ~ 60 mmHg +/- 6 mmHg	
	FLOW RATE		Max 10 L/min	
	PROTECTION TYPE		Class II Type BF	
	INGRESS PROTECTION RATING		IP21	
CONTROL UNIT DIMENSION	HEIGHT		326 mm	
	WIDTH		275 mm	
	DEPTH		133 mm	
	WEIGHT		5 kg	
MATTRESS DIMENSIONS	LENGTH		2000 mm	2000 mm
	WIDTH		880 mm	1050 mm
	HEIGHT		200 mm	200 mm
	WEIGHT		14.5 kg	16 kg
	MATERIAL	TOP COVER	PU laminated nylon	
		BASE COVER	TPU-laminated PU, fully sealed	
		AIR CELL	TPU	
OPERATING ENVIRONMENT	AIR HUMIDITY	OPERATION	30% to 75% non-condensing	
		STORAGE	30% to 90% non-condensing	
		MATRESS STORAGE	10% ~ 90%	
	AMBIENT TEMPERATURE	OPERATION	15° C to 35° C	
		STORAGE	5° C to 60° C	
		MATRESS STORAGE	-10°C ~ 40°C	
	ATMOSPHERIC PRESSURE RANGE		700 hPa to 1060 hPa	
	ALTITUDE		-310 metres to 3000 metres	

Technical Specifications

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.

IP21

The IP Code (or International Protection Rating, sometimes also interpreted as Ingress Protection Rating*) consists of the letters IP followed by two digits and an optional letter.

- First Digit: Solids The first digit indicates the level of protection that the enclosure provides against access to hazardous parts (e.g., electrical conductors, moving parts) and the ingress of solid foreign objects.
- Second Digit: Liquids Protection of the equipment inside the enclosure against harmful ingress of water.

IP Number	First Digit - SOLIDS	Second Digit - LIQUIDS
IP21	Protected from touched by fingers and objects greater than 12.5mm.	Against water: Vertical water drips.

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 Trio system or any of its components.

EMI/EMC Statement and Manufacturer's Declaration

⚠ 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 Trio control unit

The ProCair Trio 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 Trio control unit can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the ProCair Trio 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 $d = 1.2\sqrt{P}$	80 MHZ TO 800 MHZ $d = 1.2\sqrt{P}$	800 MHZ TO 2,5 GHZ $d = 2.3\sqrt{P}$
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.

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.

Guidance and Manufacturer's declaration-electromagnetic immunity

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

EMI/EMC Statement and Manufacturer's Declaration

Emission test	Compliance	Electromagnetic environment-guidance
RF emissions CISPR 11	Group 1	The ProCair Trio 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 Trio 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 (230V)	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Compliance (230V)	

Guidance and manufacturer's declaration – electromagnetic immunity

The ProCair Trio control unit is intended for use in the electromagnetic environment speci fied below. The customer or the user of the ProCair Trio 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	
Voltage Dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	Voltage dips 0 % UT; 0.5 cycle 0 % UT; 0.1 cycle 70 % UT; 25/30 cycles	Voltage dips 0 % UT; 0.5 cycle 0 % UT; 0.1 cycle 70 % UT; 25/30 cycles	Mains power quality should be that of a typical home healthcare and professional healthcare environment. If the user of the ProCair Trio control unit requires continued operation during power main interruptions, it is recommended that the ProCair Trio control unit be powered from an uninterruptible power supply or a battery.
	Voltage interruptions 0 % UT; 250/300 cycle	Voltage interruptions 0 % UT; 250/300 cycle	
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 a typical home healthcare and professional healthcare environment.
	50 Hz or 60 Hz	50 Hz	

EMI/EMC Statement and Manufacturer's Declaration

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
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 Trio 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 = 1.2 √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 tofixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the ProCair Trio control unit is used exceeds the applicable RF compliance level above, the ProCair Trio 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 Trio control unit.

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

C During DIP interference, temporary power outage of pump may occur. It does not affect the pump operation or raise any concern of pump safety. In the meantime,flashing of "Battery In Use" LED is normal, due to power is supplied by internal battery during power outage. The backup battery could be used for up to 3 hours.

EMI/EMC Statement and Manufacturer's Declaration

MANUFACTURER'S DECLARATION-ELECTROMAGNETIC IMMUNITY			
The M19-8 is intended for use in the electromagnetic environment (for home and professional healthcare) speci fied below. The customer or the user of the M19-8 should assure that is used in such and environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance (for home and professional healthcare environment)
Conducted RF IEC 61000-4-6	3 Vrms: 0,15 MHz – 80 MHz 6 Vrms: in ISM and amateur radio bands between0,15 MHz and 80 MHz 80 % AM at 1 kHz	3 Vrms: 0,15 MHz – 80 MHz 6 Vrms: in ISM and amateur radio bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz	Portable and mobile RF communications equipment should be used no closer to any part of the M19-8 including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
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	Recommended separation distance: d = 1,2 √P d = 1,2 √P 80MHz to 800 MHz d = 2,3 √P 800MHz to 2,7 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). Interference may occur in the vicinity of equipment marked with the following symbol:

NOTE1 At 80 MHz and 800 MHz, 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.

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

EMI/EMC Statement and Manufacturer's Declaration

The control unit is intended for use in the electromagnetic environment (for home healthcare and professional healthcare) speci fied 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.

D Caution: If abnormal behavior is observed due to EM disturbances, please relocate the device accordingly.

E Caution: Please do not use any other cables or accessories not approved by the manufacturer in this manual to avoid negative influence on electromagnetic compatibility

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.

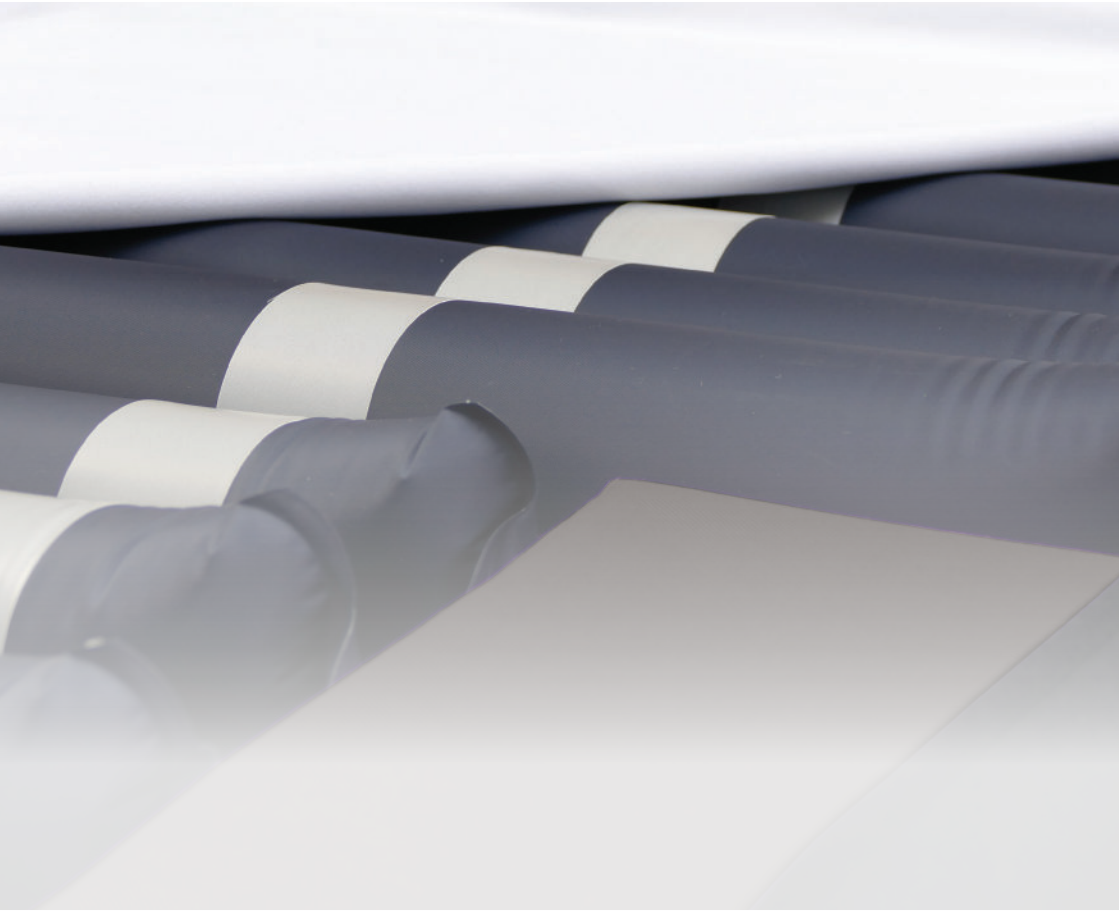
IMPORTANT NOTICE FOR AUSTRALIAN CONSUMERS:

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.

Notes

enabling independence



Novis Healthcare Pty Ltd
Unit 12/12 Mars Road Lane Cove NSW 2066 Australia

ABN 45 102 735 491
NDIS 4050019411

T 1300 738 885
F 1300 738 885

E orders@novis.com.au
W novis.com.au

06102020F