

User Manual

Simple Plus – Plus Size Dynamic Mattress

INSTRUC/SIMPLE/PLUS
Rev.DDS1

**300kg (1001050003) &
400kg (1001050004)**



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FIRE WARNING

This active mattress system complies with all relevant UK fire safety standards.

In order to reduce the risk of fire:

DO NOT SMOKE - Smoking will contaminate the product and is NOT permitted around or on the mattress system. This is a common cause of fatal fires. This system uses room air for circulation through the mattress. A cigarette could burn a hole in the mattress surface and cause damage to the mattress system. Patient clothing, bed sheets and other items, may be combustible and could catch fire. Failure to observe this warning could result in a severe fire, property damage, physical injury or death.

DO NOT - use candles on or around the mattress system

DO NOT - use electric blankets with this mattress system

DO NOT – use in the presence of flammable anaesthetics, explosions could occur

DO - keep hot equipment off the mattress surface, E.g. Hair dryer, curling tong, etc.

DO - keep matches and lighters away from children

DO - keep heaters away from the mattress system

Follow all manufacturers' instructions and warning.

It is advised that a full fire risk assessment is carried out prior to using this equipment

In case of fire, exit and call the emergency services.

Please refer to MDA/2013/093 for further guidance

IMPORTANT SAFEGUARDS
READ ALL INSTRUCTIONS BEFORE USE

DANGER - To reduce risk of electrocution:

1. Always unplug this product immediately after using
2. Do not use while bathing
3. Do not place or store product where it can fall or be pulled into a tub or sink
4. Do not place in or drop into water or other liquid
5. Do not reach for a product that has fallen into water. Unplug immediately

WARNING – To reduce risk of burns, electrocution, fire or injury to person:

1. This product should never be left unattended whilst plugged in
2. Close supervision is necessary when this product is in use with or near children
3. Use this product only for its intended use as described in this manual. Do not use attachments not recommended by the manufacturer
4. Never operate this product if it has a damaged power cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped in water, return the product for examination and repair
5. Keep the power cord away from heated surfaces
6. Never block the air opening of this product or place it on a soft surface, such as a bed or couch, where their openings may be blocked. Keep the air opening free of lint, hair, and other similar particles
7. Never drop or insert any object into any opening or hose
8. A risk assessment should be carried out in relation to the mattress and the side rails if used on an alternate bed frame. DB 2006(06)

NOTE, CAUTION AND WARNING STATEMENTS

NOTE - Indicates some tips

CAUTION - Indicates correct operating or maintenance procedures in order to prevent damage to or destruction of the equipment or other property

WARNING - Calls attention to a potential danger that requires correct procedures or practices in order to prevent personal injury

SYMBOLS



Class II electrical device



“BF” symbol indicates this product is according to the degree or protecting against electric shock for type BF equipment.



Manufacturer



Attention: read the accompanying instructions



Read and understand the user manual before using equipment.
Failure to follow instructions could result in serious injury



Authorised representative in the European community



Disposal of Electrical & Electronic Equipment (WEEE)



Keep dry at all times



Passive Radio Frequency Identification (RFID) tags maybe in use throughout the system

INTRODUCTION

Product Description

The Simple Plus system is a high quality and affordable air support surface system which has been specifically designed for the prevention and the aid of treatment of pressure ulcers for plus size patients. The Simple Plus offers an effective solution for 24-hour pressure area care. The Simple Plus is suitable for patients who are at high risk of developing pressure ulcers, and a single occupant weight of up to 300kg (1001050003) & 400kg (1001050004).

The treatment of pressure ulcers offered by the system must coincide with correct nursing procedures.

Intended Use

The Simple Plus system is intended to reduce the incidence of pressure ulcers while optimising patient comfort. It may also be appropriate for the following:

- Individual home care setting and long-term care facilities
- Pain management as prescribed by a healthcare professional
- A hospital environment where medical supervision and monitoring is provided

Contraindication

Users with the following condition could experience contraindications if they use this device:

- Cervical or skeletal traction
- Unstable spinal cord injuries

This is not the extent of the contraindication, others maybe relevant depending on the patients' medical requirements.

INSTALLATION

Unpacking

When unpacking the Simple Plus system, check for any damage which may have occurred during transit. Please report any damages to Drive DeVilbiss Healthcare as soon as practical and remove the system from use.

Setting Up

1. Place the mattress on top of the bed frame. Ensure the hose is placed at the foot end of the bed and the text placed at the uppermost. The mattress can be secured firmly by fixing the straps to the moving platforms of the bed.



NOTE: Cover the mattress with a loosely fitted sheet to avoid direct skin contact.

WARNING: If used with an electrically profiling bed, ensure the mattress is secured to the bed profile and not the static sections of the bed.

WARNING: Do not secure to the side rails

2. Hang the pump at the foot end of the bed; adjust the hanger to secure the pump against the foot board. Avoid placing the pump on the floor
3. Connect the air hose from the mattress on to the side of the pump



NOTE: Ensure the air hose on the mattress is not kinked or tucked under the mattress

NOTE: Ensure the CPR valve is attached correctly

4. Plug the pump into the mains electrical outlet



NOTE: Any extra power cord should be neatly arranged and off the floor to avoid any trips and any damage to the cable

5. Turn on the pump using the main switch, found on the side of the pump
6. The pump will beep and the pump will begin to operate
7. When the pump is first switched on, it will enter the static mode until it reaches the pumps desired pressure setting. This can take up to 40 minutes
8. Once the system is ready, the Low Pressure indicator will go out and will revert to alternating mode
9. Place the patient on to the mattress
10. Adjust the comfort controls according to the patient weight
11. Assess the patients comfort levels and assess for bottoming out
12. Adjust the cycle time according to the patients requirements

STORAGE

For the ease of storage, mattresses can be rolled and stacked on top of each other. To prevent mattresses becoming contaminated and/or damaged during storage:

- Mattresses should not be folded
- Mattresses should be stored within a polythene cover or bag to prevent infection lower the risk of damage
- Do not store other objects such as side rails or bed ends on top of mattresses
- Allow adequate space for the stored mattresses to be manoeuvred
- Place the pump in a secure location in a polythene bag or cover

DAMAGE PREVENTION

Take extra care not to puncture the cover as this will allow fluid ingress and ultimately contaminate the product. To prevent the cover from being punctured and/or damaged:

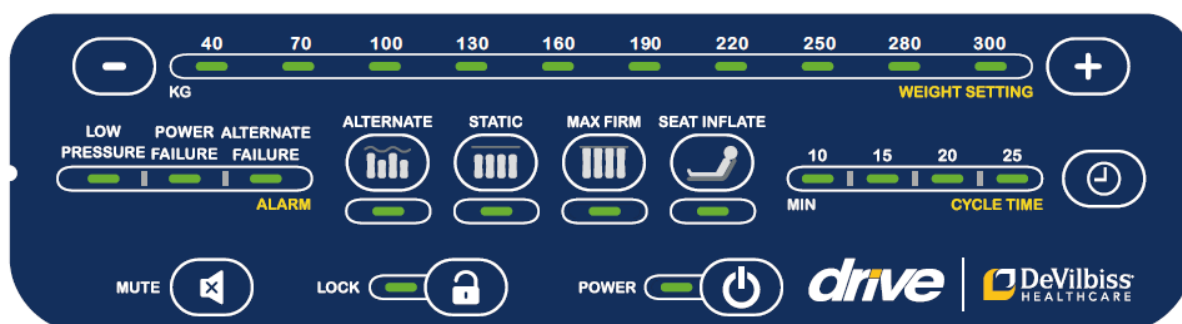
- Do not place sharp objects such as hypodermic needles, scalpels, etc., on the mattress
- Avoid wearing protruding jewellery i.e. rings with stones
- Take extra care when using medical equipment such as monitors, drip stands, side rails, transfer boards, etc.

MOVING AND HANDLING

Where possible, mattresses should be on a bed base or trolley. Mattresses should be handled carefully. Do not drag or pull a mattress by its cover or sides.

PRODUCT FUNCTIONS

Pump



Weight Setting

10 comfort levels are available for a variety of patient weights. Use these buttons to adjust weight settings accordingly.



Alternating

The system will alternate the cells in the mattress. The system cycles 1 in 2 cells within the given time.



STATIC

Non-alternating mode to facilitate nursing procedures. The function will revert back to alternating mode after 20 minutes.



Auto firm

This provides a fast flow of air in to the mattress until it reaches maximum inflation.



Seat Inflate

When the back rest of the bed is inclined, press the seat inflate to add additional pressure in the mattress to prevent it from bottoming out.



Cycle time

There are 4 alternating cycle times. Use this button to adjust the cycle time through 10, 15, 20 and 25 minute cycles.



Alarm Mute

Disables the audible alarm. Press this button to mute the audible alarm.



Lock Out Function

The system will lock automatically after 5 minutes when unused. Press and hold the lock button for 3 seconds to lock and unlock the pumps functions.



Power

The main power switch can be found to the right of the pump. The standby button can be found at the front of the panel.

Mattress



CPR

In the event of an emergency, pull both CPR tags found on the left side of the mattress at the head end. This will completely deflate the mattress.

NOTE: the pump will alarm 'Low Pressure'



Quick Connector with Transport Block

If the patient needs to be transported on the mattress or there is a power cut, remove the connector from the pump and reconnect the transport cap, the alternating cells will then equalise.



Cells

20 'cell on cell' 25.4cm deep air cells produced from robust but comfortable nylon & TPU. Top 4 head cells will stay inflated to reduce the patient feeling nauseous due to motion of the cells alternating.

Cover

The top cover of the Simple Plus is produced from a durable yet comfortable polyurethane with a white substrate backing to assist with mattress auditing

BOTTOMING OUT

Bottoming out is when a mattress lacks support due to the amount of weight resting on top, it is said to bottom out. If a mattress is too thin for a sleeper's body weight, support will fail. Anything lower than 20% of the overall mattress depth, is deemed to have failed.

To ensure the mattress is providing the correct level of support for the patient during alternating cycles, the carer should glide their hand into the deflated cells under heaviest part of the patient. There should be between 25-40mm of space between the lower static cells and the patient

CLEANING

The following guidelines are suggested by Drive DeVilbiss Healthcare as being suitable infection control procedures. Further information is available upon request.

Pump Unit

General cleaning may be affected by using a cloth dampened with a mild detergent and water solution. This approach may be followed either by wiping with a sodium hypochlorite solution to a dilution of 1000 ppm or by using an alcoholic wipe.



- WARNING:**
- Do not use phenolic or biological based cleaning solutions
 - Do not use any abrasive compounds or cleaning pads
 - Do not submerge the pump in to water or any other liquids
 - Ensure that mains power supply to the pump has been disconnected prior to cleaning.

Mattress

General Cleaning

During general use, the mattress and tube set may be cleaned using a neutral detergent solution. Using a single use wipe, clean the mattress cover and/or tube set with a solution of neutral detergent and hot water. Rinse thoroughly with clean water and a damp single use wipe.



- NOTE:**
- The top, bottom and all four sides of the cover and tube set, including under the zip flaps **MUST** be cleaned.
 - Ensure the cover and tube set are completely dried before refitting the cover.



- WARNING:**
- Do not use phenolic or biological based cleaning solutions
 - Do not use any abrasive compounds or cleaning pads

Disinfecting the Mattress

If the cover is heavily soiled or has been exposed to bodily fluids such as blood, it will require a thorough cleaning procedure:

Wipe the cover using a single use wipe with Chlorine Solution (of up to 1,000ppm) and cold water. Rinse thoroughly with clean water and a damp single use wipe. Make sure the cover is completely dried before refitting or storing.

Wipe the cells using a single use wipe with Chlorine Solution (1,000ppm) and cold water. Rinse thoroughly with clean water and a damp single use wipe. Make sure the cells are completely dried before refitting or storing.

Frequent or prolonged exposure to higher concentration disinfectant solutions may affect the longevity of the mattress and affect its functionality.

**NOTE:**

- Some surface wrinkling may also occur
- The cells in the system cannot be fully laundered due to the internal properties being affected.
- Personal Protective Equipment should be worn during the entire cleaning process
- This system must not steam cleaned or used in a autoclave

Laundering

Before laundering the mattress, covers should be completely removed. Where required, mattress covers can be laundered as follows:

- Pre wash: 95°C + 15 minutes
- Main wash: 95°C + 15 minutes

This should be followed by a cold rinse and extraction.

Drying

Mattress inners and tube sets should be wiped with a clean and dry cloth before reinserting.

Mattress covers can be tumble dried on a low heat setting for 90 minutes. Drying temperature must not exceed 40°C. **Exceeding this temperature can cause significant damage to the mattress cover.**

**NOTE:**

- Covers must be completely dried before refitting to the mattress inners

MAINTENANCE

Pump

The following chart is a guide on how often the pump's filters should be serviced:

	Every 12 months	Every 6 months	Every 3 months
Low particle density	✓		
Medium particle density		✓	
High particle density			✓

1. Ensure that all hoses inside and outside the pump and mattress are kink and split free. If any splits are found, replace the pipe
2. Ensure there are good connections between the CPRs
3. Ensure the filter in the rear of the pump is clear from dirt
4. Ensure all indicators are working. If faulty, these should be replaced by a Drive DeVilbiss approved technician
5. Ensure the main power cord and plug is free from abrasions and/or excessive wear. Replace if damaged
6. Check the mattress cover for signs of wear and damage. Replace if there are any signs of fluid ingress
7. Ensure all audible warning alarms function correctly
8. Ensure the pumps housing is not cracked or damaged

Replacement parts can be purchased from Drive DeVilbiss Healthcare.

Mattress

Mattresses should be checked regularly to ensure they remain 'fit for purpose', clinically effective and pose no risk of infection to either the patient or the carer. Drive DeVilbiss Healthcare recommend that a thorough inspection of both the interior (cells) and exterior (cover) of the mattress is carried out on a weekly basis or, each time a new patient is placed on the mattress. Visual checks should be carried out daily to identify any significant signs of damage or infection risk.

- Check for any signs of staining on the inner substrate
- Check for any signs of tearing and/or punctures marks
- Check all the seams for any signs of splitting
- Check the zip for any signs of damage, also ensure this is fully closed at all times
- Check the cells for any signs of damage or fluid ingress

DISPOSAL

Goods at the end of their lifespan or are no longer fit for purpose must be disposed of correctly in relation to Waste Electrical and Electronic Equipment recycling (W.E.E.E) – Directive 2002/95/EC. Contact your local supplier or Drive DeVilbiss Healthcare to arrange collection or for further information. Units should not be disposed of in the general waste.

Plastics and metals from the pumps and mattresses maybe recycled, contact your local authority for further guidance.

TROUBLESHOOTING

Problem	Solution
No power to the unit	<ul style="list-style-type: none">• Ensure the pump is switched on (at the side of the pump) and not in standby mode• Ensure the mains lead is connected to the mains and also the pump• Ensure there are no blown fuses in the pump or mains lead. Replace accordingly
Low pressure indicator is lit	<ul style="list-style-type: none">• Ensure the correct comfort setting has been selected• Ensure the connections between the feed pipe and the pump unit are secured• Ensure all tubing connections along the cells are secure• Assess the cells for any punctures which maybe causing a leak• Ensure CPR tags are engaged correctly
Patient is bottoming out	<ul style="list-style-type: none">• Pressure setting may be inadequate, adjust comfort range accordingly• Ensure CPR tags are engaged correctly
No air is being produced from some of the air outlets of the tube connectors	<ul style="list-style-type: none">• This is normal in alternating mode. Air outlets take turns to produce air during the cycle• If fault still continues, a Drive DeVilbiss Healthcare approved engineer will be required to repair the fault
Pump is noisy	<ul style="list-style-type: none">• Tightly secure the bed hooks to the bed frame as this will reduce vibration and limit noise• Ensure pipe work is not kinked• If fault still continues, a Drive DeVilbiss Healthcare approved engineer will be required to repair the fault.

TECHNICAL SPECIFICATION

Pump		Specification	
Power Supply		220V 50Hz 1A	
Fuse Rating		T1A / 250v (230V)	
Cycle time		10, 15, 20, 25 minutes	
Dimensions		34 x 12.5 x 24.4 (cm)	
Weight		3.5kg	
Modes		Alternating, Static, Seat Inflate & Auto Firm	
Alarms		Low Pressure, Power Failure, Alternate Failure	
Air output		12 litres per minute	
Material		FR - ABS	
Environment	Temperature	Operation	10°C to 35°C (50°F to 95°F)
		Storage	-15°C to 50°C (5°F to 122°F)
		Shipping	-15°C to 50°C (5°F to 122°F)
	Humidity	Operation	20% to 80% (non-condensing)
		Storage:	10% to 90% (non-condensing)
		Shipping:	10% to 90% (non-condensing)
Classification		<ul style="list-style-type: none">• Class II electrical device, Type BF, IPOX• Applied part: Simple Plus Mattress• Not suitable for use in presence of a flammable anaesthetic mixture (No AP or APG protection)• Continuous operation	
Mattress		Specification	
Dimensions		200 x 120 x 26 cm	
Weight		7kg	
Pressure range		20-65 mmHg ±10%	
Max patient weight		300kg or 400kg	
Top cover material		bi-elastic PU with zipper and white inner substrate	
Base material		Nylon / PVC	
Cell material		Nylon / TPU	
Cell configuration		20 figure of 8 cells 26cm deep, 4 static head cells	
Connector type		Quick connector with transport block	
CPR Type		2 x 12” red pull tags labelled CPR located at the head end	

Electromagnetic Interference

- This device has been tested to withstand electromagnetic interference (EMI) from commonly found electrical equipment.
- EMI can affect some types of electronic medical devices (such as pacemakers, defibrillators, ECG monitors and infusion pumps). If in any doubt before use, a risk assessment should be carried out before using this or any other electrical device around sensitive devices.
- Electrical equipment may be susceptible to EMI from sources such as mobile phones, walkie-talkies, TV broadcast and emergency services' radio. A risk assessment should also be carried out before using electronic medical devices in areas close to these sources.
- The addition of components or accessories may affect the EMI susceptibility of the device. Do not fit accessories other than Drive DeVilbiss Healthcare authorised accessories.
- For further details and information contact Drive DeVilbiss Healthcare.

Warranty

Your Drive DeVilbiss Healthcare product is warranted to be free of defects in materials and workmanship for 2 years on mattresses and 2 year on pumps from date of purchase.

This device was built to exacting standards and carefully inspected prior to shipment. This warranty is an expression of our confidence in the materials and workmanship of our products and our assurance to the customer.

In the event of a defect covered by this warranty, we will at our option supply parts or replace the device.

This warranty does not cover device failure due to owner misuse or negligence, or normal wear and tear. The warranty does not extend to non-durable components, such as rubber accessories, castors and grips, which are subject to normal wear and need periodic replacement.

If you have any queries or require full warranty conditions, please contact Drive DeVilbiss Healthcare.

This does not affect your statutory rights.



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Due to its policy of continued development and
Improvement, Drive DeVilbiss Healthcare Ltd.
Reserves the right to amend any details

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