

INSTRUCTIONS FOR USE

# OptiCell

Alternating air mattress system

V2

2 NX V2 · 2 PRO V2 · 3 NX V2 · 3 PRO V2 · 4 PRO V2

Järven Health Care

***Thank you for choosing the OptiCell air mattress system.*** *Our goal is for you to be satisfied with both in terms of function and longevity. We therefore ask you to spend a few minutes to read through this user manual to handle your OptiCell air mattress system in the best possible way.*

*If you have any questions that are not covered in this manual, please contact us at Järven Health Care. You'll find our contact details on the back of this manual.*

## Warning and information boxes



Warning box that informs about an important safety aspect or hazard. If you do not understand or follow the information, you may injure yourself or others!

Information box with instructions which, if not followed, may damage the product and/or impair the function and performance of the system..

Read this user manual carefully. The Instruction for use must be stored in an easily accessible place known to all those who will be working with the system.

## CE labelling

OptiCell's air mattress systems and covers are CE marked according to MDR 2017/745. The labelling means that OptiCell has manufacturer responsibility and ensures that the product fulfils the essential requirements and that there is technical documentation and declaration that must be retained for at least ten years.

CE

## Quality work

**Our quality work and customer focusare** realized by being responsive to customers' needs and expectations, and by working in all respects to promote a partnership based on a long-term approach and trust. Continuous improvement of our products and services is the foundation of our ability to to satisfy our current and future customers. Our fundamental quality work also includes finding evaluation methods and standards that offer the quality in terms of comfort, function, durability and price.

OptiCell focuses in particular on, thorough competent and committed employees, and continuously training and developing the skills of healthcare professionals. Our hope is that it will lead to high-quality care with a focus on preventing pressure ulcers and healthcare-associated infections, as well as reducing the number of fire incidents in healthcare.

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# Safety instructions

**Read the following information before using your health care mattress!**

- **The product should only be used in accordance with these instructions for use.**
- The product must be visually assessed before and after each use.
  *Read more about inspecting your mattress on pages 25 and 26.*
- The product should not be combined, assembled or repaired with parts, accessories or spare parts other than those described in this user manual or other documentation from Järven Health Care.
- Ensure that the mattress is not crushed or damaged during storage.
- Avoid sharp objects in the vicinity of the mattresses and covers.
- Avoid mechanical shocks.
- To avoid damage, the products must not come into contact with hot sources or fire, such as glowing cigarettes, hot lamps or similar.
- Ensure that you use the right mattress size for the intended bed and the right model for the patient in question.
- Position the patient so that the airways are kept clear.
- When handling or disposing of the mattress, follow the local instructions for specific infections or situations.
- Ensure that the cover is intact! A damaged cover is no longer hygienic as there is a risk of body fluids penetrating the cells and or eventual foam. Therefore, check carefully that there is no damage to the mattress cover.
- Always inspect the electrical cable before use. Damaged or broken electrical cables must not be used.
- Follow the standards for electrical safety.
- Do not cover the pump with blankets, clothing or similar.
- Connect the product to an earthed wall socket so that as short a section of the cord as possible lies on the floor.

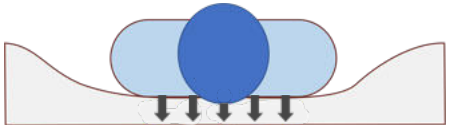
According to the Medical Products Agency's regulations on medical devices, the manufacturer is obliged to report accidents and incidents that can be linked to the manufacturer's product.
**Therefore, any incidents or accidents related to our products must be reported to us immediately.**

# Product information

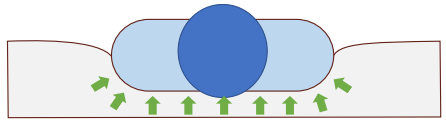
The OptiCell range of air mattress systems consist of
- **Cell-on-cell replacement mattresse**s that are placed directly on the bed base
- **Replacement mattresses, cell and foam** placed directly on the bed base
- **Single-cell overlay mattresses** that are placed on top of an existing care mattress.

The mattresses have been developed to be part of a preventive and therapeutic care work. The mattresses have different levels of pressure relief and are suitable for all care environments.

The mattresses adapt to the contours of the body to distribute pressure across the body surface through Envelopment and Immersion, the two most important biochemical properties to reduce the risk of pressure ulcers [1].



**Immersion**



**Envelopment**

## OptiTex mattress cover

OptiCell's air mattress system is supplied with an OptiTex® PU hygiene cover which, through its structure, contributes to the pressure-relieving properties of the mattress.

The OptiTex cover has an integrated, waterproof cable channel that contributes to better hygiene, keeps the power cord out of the way and protects the air hoses.
The cover is made of a PU material on both the top and bottom and incorporates a drip shield which protects the waterproof zipper on all four sides. All seams are welded.

The base mattress cover includes an anti-slip function and four attachment straps to secure the mattress to the bed frame. The covers also include 2 handles on each long side handles for easy transport of the mattress.

Our overlay mattresses include four elasticated straps beneath each corner which should be attached to the top corners of the underlying mattress. NOTE! Consider the height of the side rails - at least 22 cm between unloaded mattress and the top edge of the gate (standard for healthcare mattresses).

OptiTex Evac, with evacuation function (for mattresses 2 PRO Evac and 3 PRO Evac).
The base cover is equipped with a non-friction evacuation function and includes strong and well-positioned handles for easy handling, and safety straps for securing the user.

The mattress cover must always be placed right side up ensuring that the drip edge acts as a protective shield over the zip.

*[1] Wounds International 2020 | Vol 11 utgåva 4 |, Gefen A and Soppi E, sid 39*

*" The two most important biomechanical properties that determine how effectively a support surface reduces the risk of pressure ulcers in patients with impaired mobility or sensory functions are immersion and envelopment.*

*- Immersion is the depth that a patient's body penetrates when placed on a support surface.*
*- Envelopment is the ability of the support surface to adapt itself around the patient's body."*

### Fire standard

OptiCell's mattress systems are fire tested according to standards SS 876 00 01, EN 597-1 & 2.
It is the customer's responsibility to make an assessment of the fire risk and then use the correct product. Please contact us if you have any questions.

# Intended use

**The mattress systems covered by this user manual are intended for use in acute care and aftercare environments, including long-term care, home care and private nursing homes.**

The systems are designed to assist in preventive and therapeutic care up to and including category 3 and 4 (depending on the mattress model) when combined with a personalized and comprehensive program of pressure ulcer treatment program (e.g. repositioning, nutritional supplements and skin care).

The mattress systems are intended to be used with a sheet between patient and mattress.

The mattresses have been developed to be part of preventive and therapeutic care work. In all pressure ulcer care, clinical judgement and experience must form the basis for whether and which air pressure system to use. If existing pressure ulcers show no improvement or if new ones occur, the entire treatment program should be reviewed by the prescribing physician.

Other care aspects should be considered by the prescribing physician.

**The OptiCell air mattress system can be used as a (bed) mattress in the following environments, defined in standard IEC 60601-2-52**

- Application environment 1 (acute care).
- Use environment 2 (short-term care in hospitals or other healthcare facilities).
- Use environment 3 (long-term care in healthcare facilities).
- Application environment 4 (home care).
- Use setting 5 (outpatients or outpatient care).

### Contraindications

The systems covered by these instructions for use must not be used by patients with unstable cervical, thoracic and/or lumbar fractures, cervical traction or skeletal traction.

### Precautions

If the patient has other unstable fractures or conditions that may be complicated by a soft or moving surface, the appropriate physician should be consulted before use.

### Life expectancy

Under normal conditions and proper care, the life expectancy of our OptiCell air mattress systems is between 5-10 years.

# Before use

### Receiving and unpacking

OptiCell is supplied rolled up in a cardboard box. Remove the plastic packaging and any protective material. **The use of a knife should be avoided during handling due to the risk of damage to the mattress and/or the cover.**

Check that the packaging has not been damaged. Then check the contents of the package.

Upon delivery, please check that the packaging and mattress are not damaged. *In the event of transport damage, see page 37.*



*Pump with power cable*

An OptiCell air mattress system includes

- 1 pump
- 1 power cable (6 meters)
- 1 mattress with cells, hose set and CPR valve

We encourage packaging to be sorted at source to reduce environmental impact..

### To keep in mind

- **The air pump should not be used in damp areas,** nor left outdoors in damp weather conditions. Avoid handling a pump that has been exposed to moisture until it has dried.
- **Be careful when handling the pump, electrical wiring and air hoses.** The air hoses and electrical wiring can be crushed and damaged by bed rails etc.
- **The comfort and function of the mattress changes** as the air pressure of the mattress increases/decreases.Remember that a tall user may weigh the same as a short user while the air pressure requirement may be different. **This must always be carefully examined for each user.**
- **It is important that the user does not "bottom out"** while laying on the mattress. If in doubt please *see page 16 for information about the hand test.*
- **The user must not be positioned so that the respiratory tract is turned in towards the mattress.**

### If the pump is not new

Carry out a factory reset if the pump has been in use before. Follow the instructions under *Restoring factory settings on page 14.*

# Prevention of pressure ulcers

## Mandatory nursing measures (Nursing handbook)

The nursing handbook specifies the following mandatory nursing measures to reduce risk of pressure ulcers during care:

- Conduct a visual skin assessment.
- Conduct a structured risk assessment which includes a clinical assessment together with a risk assessment tool.
- Reduce pressure, shear and friction, for example by repositioning and pressure relief.
- Keep skin dry, soft and supple through preventive skin care.
- Meet and monitor nutritional and hydration needs.
- Involve the patient and/or carers in pressure ulcer prevention.
- Communicate risk factors and preventive measures to the next care unit. For more more information about discharge, see the section on collaborative care.
- Document, regularly follow up and evaluate all measures in an individual care plan.

## Repositioning for pressure relief

Repositioning reduces pressure on sensitive areas and promotes comfort, hygiene and mobility. Patients should be encouraged to be active as movement is the body's natural defense against pressure ulcers. Those who lack the ability to spontaneously change position need regular assistance according to an individualized turning/repositioning schedule.

At each change of position, the skin should be inspected to identify pressure reddening. If the person does not respond as expected, the frequency or basis should be adjusted. Avoid placing someone on an existing pressure ulcer.

**Positioning in bed position:**

*Side position:* *30 degree angle supported by pillows.*

*Back position:* *Wedge cushions to reduce pressure, head end max 30 degrees except for meal.*

*Heels:* *Release cells with Multi Zone Relief or relieve with cushions/heel relievers to avoid injuries*

*See page. 41 for positioning aids.*

**For more information, consult the Nursing handbook.**



# Installation

During installation, it must be ensured that the bed frame is adapted to the dimensions of the mattress. Incorrect combination of bed frame and mattress can have undesirable effects.

## Inspection of the system

Upon installation, a visual inspection must be made of the hose set, cover and cells. In case of suspected damage or contamination, a more thorough inspection must be carried out before using the system. If the air pressure system is damaged, the product must not be used but must be replaced. In the event of contamination, clean the system if possible.
*(See Care - Cleaning on page 27)*

## Positioning of full replacement and combination mattress

*(Models 2 PRO, 3 PRO and 4 PRO)*

Full replacement mattresses are positioned directly onto the bed frame. Then use the attachment straps on the underside of the mattress to attach the mattress to the bed frame.
It is the carer's responsibility to ensure that the mattress lies securely in the bed frame

## Positioning of overlay mattress

*(Models 2 NX and 3 NX)*

Mattress overlays are placed on a good quality foam mattress (height at least 5 cm) after which the elastic bands on each corner of the overlay mattress are fastened around each corner of the foam mattress ensuring the overlay will be kept in place. The overlay mattress must not be used in combination with an elasticated mattress as the mattress cannot be fastened in a satisfactory manner.
It is the carer's responsibility to ensure that the mattress is secure in the bed frame.

## Placement of the pump

We recommend placing the pump on the foot end of the bed using the pump's suspension hooks on the footboard. *(See picture)*
If it is placed differently, it must be ensured that the pump cannot be damaged due to falls, kicks or impacts. It is the carer's responsibility to ensure that the pump is placed in a safe manner.



# For home care

Before the OptiCell air mattress system is placed and used in a home environment, the staff or relatives who will be handling the system must have read, understood and received training from knowledgeable staff or from your supplier.
The air pump must not be covered and unauthorized persons must not be given access to the system.

Also remember that pets must not come into contact with the air mattress in order to minimize the risk of damage to the cover and cells.

The other safety aspects discussed in this user manual also apply to home care.

## Things to consider when installing a mattress in a home environment

When installing an air mattress system in the homecare environment, special consideration must be given to the following:

- **The user/person lying on the mattress should be longer than the width of the mattress to avoid the risk of ending up between the air cells.**
- That power cables and air hoses are not damaged and are safely protected.
- That the cord and air hoses do not pose a choking hazard to children.
- That the pump is placed so that it can't fall to the floor.
- That the pump is visible and not covered.
- That no unauthorised persons have access to the pump.
- That no pets can come into contact with the mattress.
- That instructions for use are available.

In the home environment, it is not uncommon for beds to have spring mattresses. These must not be used as there is a risk that the air mattress with user sliding out of the bed.



# Connection and start-up

- The pump's power cable is placed in the mattress's cable channel together with air hose to minimise the risk of damage to the cable and someone tripping over a loose cable.

  Connect the power cable and hose set to the air pump. Check that the CPR valve
- is CLOSED.

  With the pump switched off, connect the power cable to a working power socket.

## Checking the correct pump connection

To ensure proper function, healthcare professionals should always check that the correct pump is used for the mattress.

- Check the mattress label (see picture below). The label shows the product name, for example: OptiCell SMART, R6, R8 or similar.
- Connect the mattress air hose to the pump labelled with the same name on the front of the pump. *(see page 36 for a picture of the pump labelling).*
- Example: a mattress labelled OptiCell SMART should be connected to a pump labelled OptiCell SMART.
- The air hose is designed so that it can only be connected to the correct pump.

**NOTE! It is important to always check the labelling to avoid confusion.**



### When installing a new air mattress system

1. Start the pump.

2. Place the patient on the mattress.
Bed and combination mattresses can be started with the patient already in place, as they have a foam core at the bottom to provide support during start-up.
Alternatively, wait until the mattress is air-filled and the READY light is on before placing the patient on the mattress. (See pages 28-30 for information on the pump display.)

3. Conduct the hand test.
When the READY light is on and the patient is lying on the mattress, a hand test is performed to check that the patient does not bottom out - that is, does not sink so deeply that the body strains the surface under the mattress. (See instructions for hand test on page 16.)

**NOTE! The hand test is an important check to ensure that the mattress provides adequate support.**

### When installing a previously used air mattress system

If the system has been in use by another user, the pump should be factory reset to clear any previous settings *(see "Restoring factory settings" on page 14)*.
**Then follow the steps for "When installing a new air mattress system" above.**

### When reinstalling with the same user

Start the pump, which automatically returns to the previous settings.
Check the pump settings, especially comfort mode and switching time, to ensure that they match the user's needs.
**Then follow the steps for "When installing a new air mattress system" above.**

# Restoring factory settings

**To restore the pump to its factory settings, proceed as follows:**

1. Press and hold the "SILENCE ALARM" button.
*(see pos. D/C Overview panel Page 30 & 32)*

2. Start the pump, with the "SILENCE ALARM" button still pressed.

If this is done correctly, three beeps will be heard at start-up, which indicates that the pump has returned to its factory settings.

**If the pump does not make any sound signals,** start again with the same procedure.
If there are still no audible signals, contact your supplier.

**Factory reset the pump** at each new mattress installation. This ensures that the pump's inbuilt memory does not have stored pump settings from previous users.

**The pump's factory settings are comfort mode "0" and a 10-minute cycle time.**



# Operation

### Setting comfort mode and alternating cycle time

When the pump is switched on, the air pressure is automatically adjusted based on the user's weight, height, position, movements and position in bed. The pump's comfort mode and cycle time can be adjusted while maintaining automatic operation.

The comfort mode is adjusted by raising or lowering the general air pressure. The pump's factory setting or default position is comfort mode "0".

The time interval for alternating cycle time can be adjusted. The factory setting/default position is set at at cycle time of 10 minutes.

For more information on how to set the pump, see the overview for each pump *(page 30 or page 32)*.

The clinical assessment of the patient's condition in combination with the patient's experience of the mattress forms the basis for adjusting the pump's functions. In normal cases, no adjustments need to be made. Note, however, that different patients' anatomy affects this.

### In the event of loss of power supply

In the event of a loss of power supply, whether planned or not, the mattress will under normal conditions retain air pressure for some time. This enables e.g. moving the bed to another room.

**To ensure that the air in the mattress is retained for as long as possible, disconnect the hose from the pump and attach the protective cap.**

Full replacement mattresses maintain acceptable air pressure for a minimum of 12 hours.
Overlay and combination mattresses maintain air pressure for approximately 8 hours. These mattresses have foam basecore, which ensures that the patient will not bottom out even if the air pressure drops.

**These times are guidelines and checking the air pressure of the mattress must be done at regular intervals during power outages to ensure that the patient is not bottoming out onto the bed frame.**

### Storage

**OptiCell air pressure systems should be stored in dry room temperature premises**
We recommend that the mattress is stored rolled up in our practical transport bag (optional extra).
The mattress should be handled carefully during storage to minimise the risk of damage.
Avoid exposing the mattress to direct sunlight for extended periods.



In accordance with the EPUAP/NPUAP directives, the user's condition should be checked regularly.

# Hand test

**Check the functioning of the mattress with a simple hand test.**

Check the function of the mattress with a simple hand test to ensure that the patient is not bottoming out. A simple hand test can be performed.

This test ensures that the patient does not "bottom out". The test should be performed every time a mattress is taken into use to detect any problems with the air pressure of the mattress.

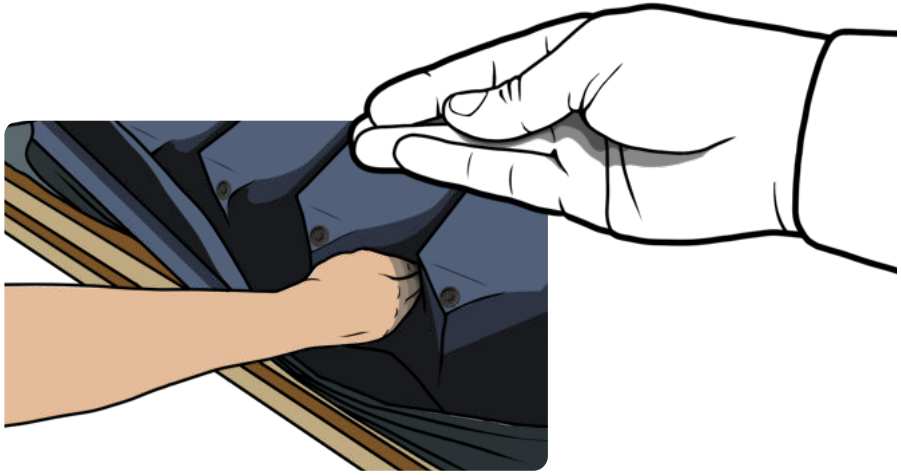
**How the hand test is performed.**

The hand test is always performed with the patient laying on the mattress. It is important that the user lays in a normal horizontal position without movement (if possible). (It is not uncommon for patients to lift their body in the belief that they are making things easier for staff, which would give incorrect test result)

- Unfold the sheet and open the mattress cover to access the cells.
- With the patient on the mattress, insert your hand between the cells (see illustration below).
- Ensure that the hand fits between the bed base and the patient.

**If the hand test shows that the patient is lying through.**

If the patient is lying through and no alarm has gone off, the comfort mode needs to be increased. If the comfort mode is set to maximum and the patient does not weigh more than the recommended maximum weight the mattress and pump need to be troubleshot by authorised personnel.

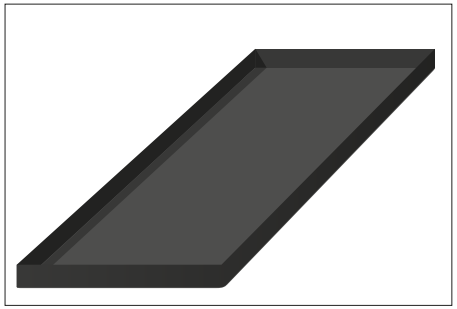




# Structure of the mattress

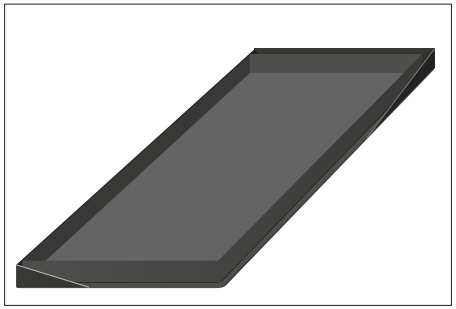
**OptiCell air pressure mattress systems are constructed as shown below.**

## Bottom part of the cover (PU)



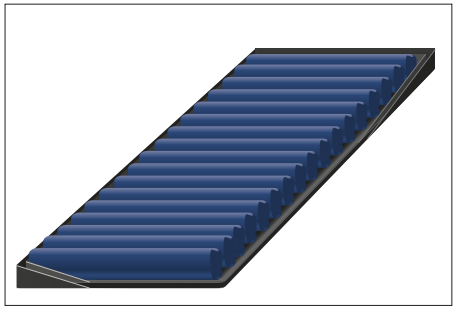
The base of the mattress is made of durable PU with four sturdy handles (not for the mattress overlay) for moving the mattress without a patient. The colour of the underside is either black or red depending on the model.

## Crib



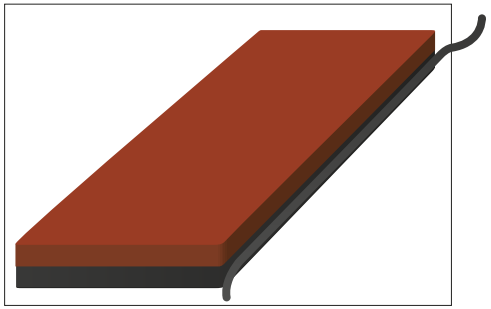
The cradle is made of sturdy PU coated nylon and can be lifted out for cleaning and inspection.
*Note that the combination mattresses have foam in the bottom of the crib, underneath the cells.*

## Cells



Depending on the model, the hose set has either one or two non-return valves for connection of cells and are made of soft polyurethane or nylon.

## Upper part of the cover (PU)



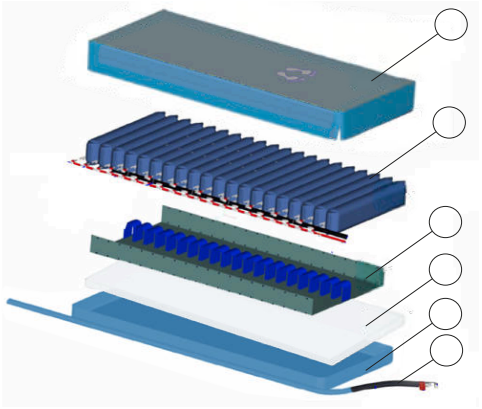
The top cover of the mattress is made of soft, rustle-free, 4-way stretch elastic polyurethane fabric and has an integrated cable channel while the waterproof zipper is protected with fully welded seams and a drip shield.

The four handles on the base are intended for use when moving the mattress WITHOUT LOAD.

# Mattress construction, cell & foam

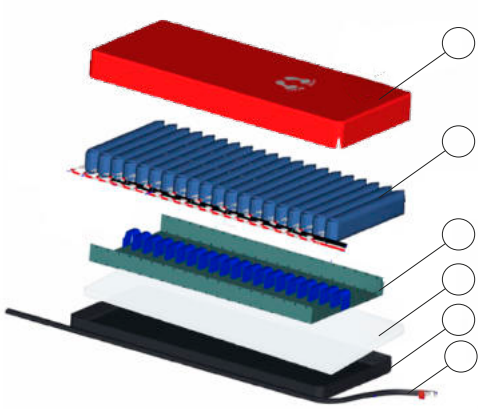
**OptiCell 2 PRO Evac & OptiCell 3 PRO Evac** are constructed as follows:

1. Upper part of the cover (PU)
2. Nylon/TPU cells and hose assembly
3. Inner base
4. Foam core (cold foam 50kg/m3) with LENTEX® laminate (see page 19)
5. Lower part of the cover with integrated evacuation function
6. Hose set (PU)



**Opticell 2 PRO N7 & OptiCell 3 PRO T7** is constructed as follows:

1. Upper part of the cover (PU)
2. Nylon/TPU cells and hose assembly
3. Inner base
4. Foam core (cold foam 35kg/m3)
5. Lower part of the cover (PU)
6. Hose set (PU)





# LENTEX® foam mattress core

**Your Opticell 2 PRO Evac and 3 PRO Evac mattress is equipped with a highly elastic (50 kg/m3) foam base with the LENTEX® surface layer.**

LENTEX is a flexible laminate whose structure contributes to the mattress's pressure-relieving properties of the mattress. The laminate encloses the entire mattress and has no perforating seams or zips. Our Active Membrane technology allows the mattress to breathe without compromising hygiene.

The light colour of LENTEX makes it easier to detect impurities on the surface of the mattress. In the event of contamination, the mattress is cleaned and disinfected with a cleaning agent intended for the purpose

## Care and maintenance LENTEX

Hygienic mattresses with LENTEX have a transparent surface layer that makes dirt and impurities clearly visible, even if it has penetrated the mattress under the surface layer. The surface layer is also easy to clean.

Soap-based cleaning agents are used to clean the surface layer of the foam mattress core. For disinfection, use an alcohol-based detergent with surfactants.
If odours persist after the mattress has been cleaned, apply a little lemon essence to a damp cloth and wipe the mattress.

Recommended cleaning agents:

- Dax Surface Disinfection Plus
- Virkon
- Dismozon Pur

Avoid detergents containing chlorine and phenols, as these can adversely affect the surface layer negatively.

## Life expectancy

LENTEX mattresses have a life expectancy of 5 years, but this can vary depending on load and care. The mattresses are both reversible and rotatable. The service life is based on the mattress being turned and rotated regularly.

It is important that no sharp objects come into contact with the surface layer. Avoid letting knives, spanners or other objects with a cutting or puncturing effect come into contact with the foam mattress to avoid damaging the surface layer.

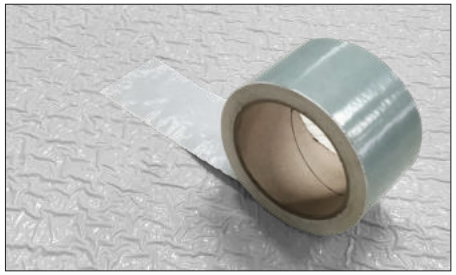
## Repairing damage to the surface layer

**Any damage must be repaired immediately with Lentex® hygiene tape for the warranty to apply.** Follow the instructions below:

1. **Ensure that no contamination has penetrated the foam core.**
   If this has happened, the mattress should be discarded. Follow local guidelines for the handling of contaminated products.
2. **Clean the surface around the damage with surface disinfectant.** Allow to dry.
3. **Cut a suitable length of repair tape** so that the damage is covered by a margin.
4. **Remove a small piece (e.g. a corner) of the green protective layer** and peel off the rest as the material is glued in place. **The repair tape should not be stretched when it is fitted.**
5. **When the material covers the entire damage,** finally rub it over with your hand so that it adheres. Make sure that the repair tape has adhered over the entire surface and without sticky edges.

**LENTEX® REPAIR TAPE**
A very strong and elastic repair tape, developed for Järven's unique surface layer LENTEX.

**Art. no:** 11-019900-002 (25m / 6 cm wide)



# Different parts of the pump

The pump described in this manual has several different external parts as shown below.




**USB INPUT** (to be used by authorized technicians)

**Input** for hose set

**Hooks** for hanging the pump at the foot of the bed



**On/Off button**

**Electrical plug**

**Cover** for pump fuse

**Cover** for air filter

# Functional description, hose and cell

## Air hoses

OptiCell has a connection with three hoses from pump to mattress. The two black hoses provide alternating or static pressure to the standard and ventilation cells. See section "Air hose connection" *(page 23)* for further information.
The red intermediate hose keeps the main cells constantly filled with air. On the replacement mattress the red air hose also keeps the lower air chambers (safety chambers) of the "cell on cell" air cells air-filled. This ensures that there is always air in the replacement mattress regardless of the setting of the pump or if the pump stops working (e.g. in the event of loss of power supply.

## Air cells

The mattresses have three different types of cells.

- **Main cells** – air cells (10/13/16/18 or 20 cm high) with continuous air pressure. Pressure that are primarily used under the user's head.
- **Standard cells**
  *The cell-on-cell full replacement mattresses* have dual-chamber cells (16/18 or 20 cm high) where the lower chamber has constant air pressure and the upper chamber that provides alternating air pressure. With combination and overlay mattresses we use single chambered air cells of either 10 or 13cm.
- **Ventilated cells** – these cells are similar to standard air cells but with minute ventilation holes which circulate air between the cells and the cover enabling the top cover to stay dry. These cells are labelled with the text *"Ventilated bladder"*

Accidental damage to an air cell can occur and OptiCell's air mattress systems are designed so that air can be released and or each and every air cell can be removed and replaced simply, without the use of tools even while the user is in bed. See below.

INDIVIDUAL CELLS CAN EASILY BE RELEASED OR REPLACED



1. Press the black button on the air hose coupling.



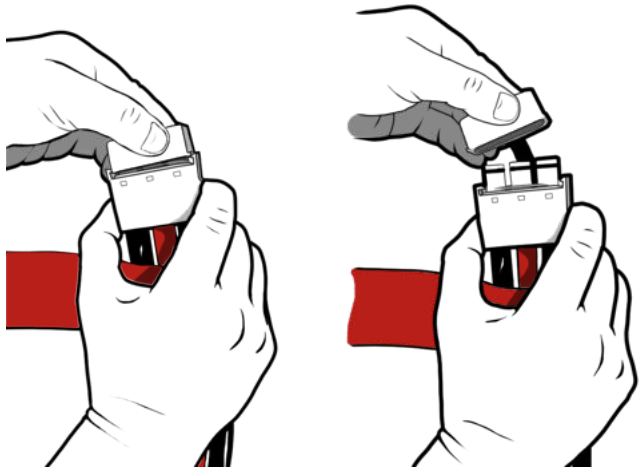
2. Disconnect the hose coupling from the cell's valve. **Done!**



# Connecting the air hoses

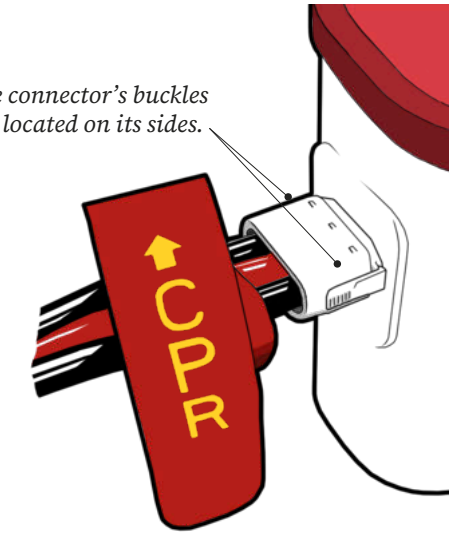
To connect or disconnect the air hoses and to remove the protective cap on the air connector, press in the two buckles on the side of the connector. This releases the hooks that hold the connector in place.

Once the connector is correctly fitted to the pump, it is held in place by the hooks.



*The air hose coupling is fitted with a simple hand manoeuvre. No special tools are required.*

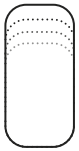
*The connector's buckles are located on its sides.*



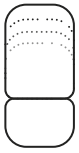
# Guide - Mattress system

| OPTICELL MODEL | Single-Cell mattress top- | Replacement Cell-on-Cell | Combi Cell and foam | Height (cm) | Wound category | Max User weight (kg) | Evacuation function | TPU Cells | Nylon Cells |
|---|---|---|---|---|---|---|---|---|---|
| Opticell 2 NX N4 | ● | | | 10 | 3 | 210 | | | ● |
| Opticell 2 NX N5 | ● | | | 13 | 4 | 230 | | | ● |
| Opticell 2 PRO N6 | | ● | | 16 | 4 | 230 | | | ● |
| Opticell 2 PRO N7 | | | ● | 18 | 4 | 230 | | | ● |
| Opticell 2 PRO N8 | | ● | | 20 | 4 | 250 | | | ● |
| Opticell 2 PRO Evac | | | ● | 20 | 4 | 230 | ● | | ● |
| Opticell 3 NX T5 | ● | | | 13 | 4 | 230 | | ● | |
| Opticell 3 PRO T7 | | | ● | 18 | 4 | 230 | | ● | |
| Opticell 3 PRO Evac | | | ● | 20 | 4 | 250 | ● | ● | |
| Opticell 4 PRO R6 | | ● | | 16 | 4 | 230 | | ● | |
| Opticell 4 PRO R7 | | ● | | 18 | 4 | 240 | | ● | |
| Opticell 4 PRO R8 | | ● | | 20 | 4 | 250 | | ● | |

*Single-cell* *The mattress consist of single chambered individual cells*
*Cell-on-Cell* *The mattress consists of several individual cells where each cell consists of two air chambers.*
*Cell & foam* *Combination mattresses have an integrated foam core (5 cm or 8 cm) placed beneath the air cells.*
*Overlay* *Overlay mattresses should be placed on top of an existing foam mattress ideally with a height of 5-8 cm.*
*Replacement mattresses are placed directly on the bed base.*



SINGLE CELL
These air cells have a single alternating air chamber.



CELL-ON-CELL
The cell consists of two air chambers where the upper chamber is alternating. The lower air chamber is a static air cell providing safety and ensuring the user from bottoming out.



OptiCell overlay mattresses should only be used in combination with a good quality foam mattress.



# Caring for your air mattress

Regular inspection and cleaning of the cover is not enough, as liquids can penetrate through invisibly damaged or leaky seams. Therefore, the air-cell package and foam core should be checked systematically, especially if the surface layer shows signs of wear and tear or if there is a suspicion of leakage.

By regularly checking mattresses, healthcare organisations can improve the work environment and reduce the risk of infection, which benefits both staff and patients. Therefore, regularly open the mattress cover and check the cells and any foam core.

Look for wet spots, discoloration, signs of damage and wear or if the mattress smells unpleasant due to body fluids. **Dispose of mattresses with contaminated foam core to reduce the risk of spreading infection!**

## Mattress audit for the sake of the user

Checking the foam in a healthcare mattress for contamination is crucial to ensure patient safety and hygiene. The foam can absorb liquids, such as blood, urine and wound fluid, creating an environment where bacteria and mold spores can grow. If the

the mattress is contaminated, there is a risk of spreading infection and impaired wound healing in patients.

## Mattress audit for the sake of your staff

A contaminated mattress can deteriorate the working environment and increase the workload for care staff:

- The risk of spreading infection increases if staff are exposed to bacteria and mold that may be present in the contaminated mattress. This can increase the risk of your own health.
- The stress of working with potentially infectious surfaces can affect the psychosocial work environment.
- Bad odours and (in)visible contaminants can create an unpleasant work environment.
- Extra care work may be required when a healthcare-associated infection occurs.
- The physical strain on staff increases if a patient needs to be moved more frequentlydue to a contaminated mattress or if mattresses need to be replaced urgently.

## Mattress audit for the sake of economy

Regular mattress checks can reduce the risk of healthcare associated infections

(HAIs), which in turn can lead to shorter hospitalisation times and lower costs for antibiotics and intensive care. The initial cost of inspections and mattress changes is then outweighed by savings from fewer infections and complications if the number of patients infections are reduced as a result of the mattress audit.

# Care - Inspection Care

## Inspection of your air pressure mattress

**An inspection plan for the mattress system should be established** to ensure function and durability. Contact Järven Health Care if you need help with this.
Contact details can be found on the last page of the user manual

## Inspection of Optitex hygiene cover

**Regularly inspect the cover for visible signs of damage or wear**, such as tears, cracks, holes, stains or discolouration. Check all sides (including the underside of the cover).

## Inspection of mattress, foam and hose set

- **Check the power cord and plug** for damage or abnormal wear.
- **Check the air hoses** for damage or abnormal wear.
- **Check the connection** of the air hoses *(see page 23)*.
- **Check that the air hoses are correctly attached** to the cell valves.
- **Check any foam** for discolouration and contamination.
- **Check cells** for contamination

## Inspection of the pump

**Check that the pump has no visible signs of damage or wear**, such as cracks, holes, stains or dirt. Check all sides (including the underside of the pump).

If contamination of the foam core is found, the foam core should be discarded and replaced to maintain a safe care environment.



# Care - Cleaning

## Cleaning the pump

Before cleaning the pump, it is important to disconnect the power cable from the power socket.

For cleaning, use either surface disinfectant or a damp cloth together with a mild detergent.

This applies to both the pump housing and the power cable.

## Cleaning the cover

The cover is made of a PU material on both the top and bottom and can easily be wiped off and cleaned with an alcohol-based disinfectant. For more thorough cleaning, the entire cover (top and bottom) can be machine washed at 70 degrees C for a minimum of 10 minutes with unscented detergent *(according to standard "SS-EN 14065:2016 Textile - Textiles treated in Textiles treated in laundries - Control system for biocontamination)*. Maximum temperature for washing the cover is 95 degrees C.

## Cleaning of cells and air hose

The cells can be washed separately or in groups. Use a damp cloth and an alcohol-based detergent or mild detergent.
Wipe the air hose with a damp cloth and mild detergent.

## Cleaning the air filter

The pump has an air filter that can be easily accessed by opening the inspection hatch on the back of the pump. *(See below)*. Wash the filter with water and mild detergent.



*Protective cover for air filter on the back of the pump.*



*The air filter is located on the protective cover inside and can be easily removed.*

# Actions in case of alarm

## Ensure the air pressure of the mattress

**Depending on what happened, the mattress may have lost its air pressure,** so it is important to ensure that the patient is not bottoming out to reduce the risk of complications. An assessment should be made of whether the patient should be moved to another mattress or whether the fault can be rectified within a reasonable time.

The fault is usually of such a nature that it can be rectified quickly, which is why it usually does not require the patient to be moved..

## If the alarm indicates an electrical fault (symbol ϟ)

- **Check that the power cord** is correctly connected to both the pump and the wall socket.
- **Check the wall socket.** Check that other equipment is working (e.g. bedside lamp) in the wall socket.
- **Check the pump's fuse.** *(See figure 1, page 29)*

If all of the above checks have been carried out and no fault is found, the pump should be replaced.

## If the alarm indicates a fault with the air pressure (symbol )

This alarm is triggered when the pump cannot provide the required air pressure. The cause is either a leak or that the pump has been damaged. By far the most common is a leak, which is why it is checked first

**NOTE** that alarms for air pressure faults have a delay of 30 minutes at start-up and thereafter 20 minutes. This is to prevent the alarm from being triggered when moving the bed and mattress.

- **Check the air hose connection at the pump.** Ensure that the connection is properly secured. Check the coupling's black rubber rings (O-rings) *(see image 2, page 29)*.
- **Check the CPR valve** to ensure that it has not been accidentally opened.
- **Check the hose set.** Check that the hoses are connected to each cell in the correct way. Also open the cover's cable channel and ensure that the three quick couplings on each hose located on each hose are correctly positioned *(see figure 3, page 29)*.
- **Check the cells**. Examine the cells for any damage causing air leakage.

If all of the above checks have been carried out and no fault is found, the pump should be replaced.

The alarm is an indication that the system is not working properly.
MEASURES TO FIND THE CAUSE MUST BE INITIATED IMMEDIATELY.



## Detailed images



*Figure 1*
*The pump's fuse is located behind a cover, positioned below the power connection.*
*The cover is released with a small screwdriver or similar.*



*Figure 2 Pump coupling with transport cap*
*The hose set connector has black rubber rings (so-called O-rings) whose function is to ensure that the coupling is tight. If these rings are missing, incorrectly fitted or damaged, air may leak out.*

*The transport cover should be used when the mattress is disconnected from the pump, e.g. when moving a patient and during storage to protect the connector.*



*Figure 3 Hose set couplings*
*The hoses have three quick couplings which should be checked in the event of an alarm for air pressure drop.*
*Check that that the coupling O-rings are not missing, incorrectly seated or damaged.*

# Resetting the alarm

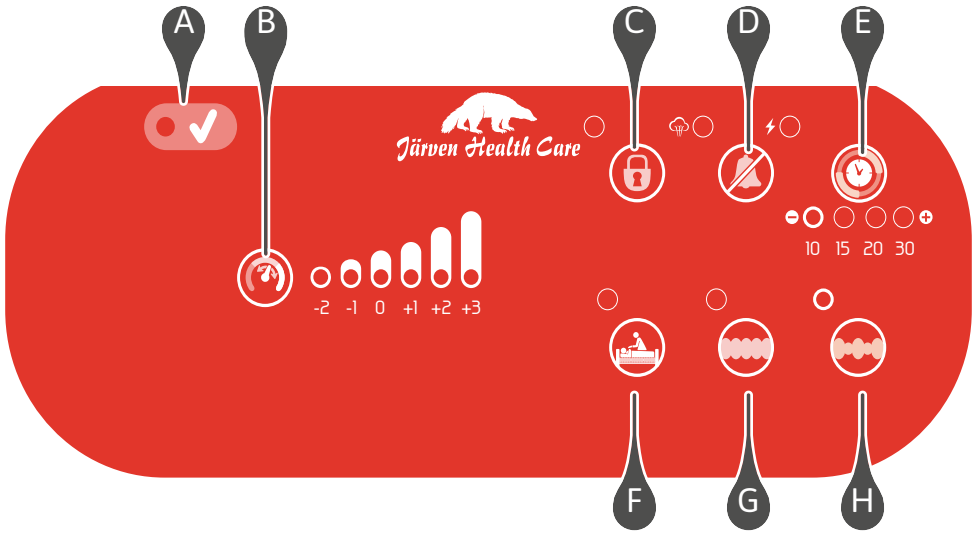
Once the cause of the alarm has been detected and rectified, the alarm is reset by pressing the "SILENCE ALARM" button is pressed and held while the pump is switched on and off. The pump will then return to the factory settings and resets the alarm. If this is done correctly you will hear three beeps at start-up. All lights will flash at start-up, press any button to switch them off. If the patient had specific pump settings

the pump is adjusted so that these are set again.

If the alarm is reactivated, either the fault has not been rectified correctly or there is further problems. The checks listed on the previous page should then be carried out again for continued troubleshooting.

# Overview panel - OC30

**Pump OC30 for 3 NX, 3 PRO and 4 PRO**




The switch is located on the right-hand side of the pump. Press ON/OFF to switch the pump on/off.

**A** **The green light** indicates that the mattress is ready for use. Filling an empty mattress normally takes about 15 minutes. When the light is on, the mattress is ready.

**B** **Setting the comfort mode**
The air pressure of the mattress can be fine-tuned by pressing this button. The user's experience and comfort are affected by the comfort mode selected.The pump's factory setting is mode '0'

**C** **Unlock the panel**
The panel's buttons are locked after a period of time in order to exclude accidental or unauthorised change of the system's settings. To unlock the panel, press and hold this button for 5 seconds.

**D** **Silent alarms**
In the event of an air pressure or electrical fault, the pump sounds an audible alarm. Press this button to silence this audible signal and start troubleshooting. In the event of an electrical fault, the lamp lights up at "ϟ". If there is a fault in the air pressure, the lamp at "🌩" lights up.
**Has the alarm gone off? See page 28 - Actions in the event of an alarm.**

**E** **Setting the alternation interval in minutes**. Select the interval for the alternating pressure. The pump's factory setting is 10 minutes switching mode.

**F** **Nursing mode**
This selection sets the pump to static mode with maximum pressure. The function is used to facilitate nursing situations.
You can cancel nursing mode by pressing this button again. Otherwise, the mattress will automatically return to the previous mode after 30 minutes.

**G** **Static mode**
This selection sets the pump to static mode. The air pressure can be adjusted with button B.

**H** **Dynamic mode**
This selection sets the pump to dynamic (alternating) mode. The dynamic position is the factory-set position of the mattress and is recommended under normal conditions.

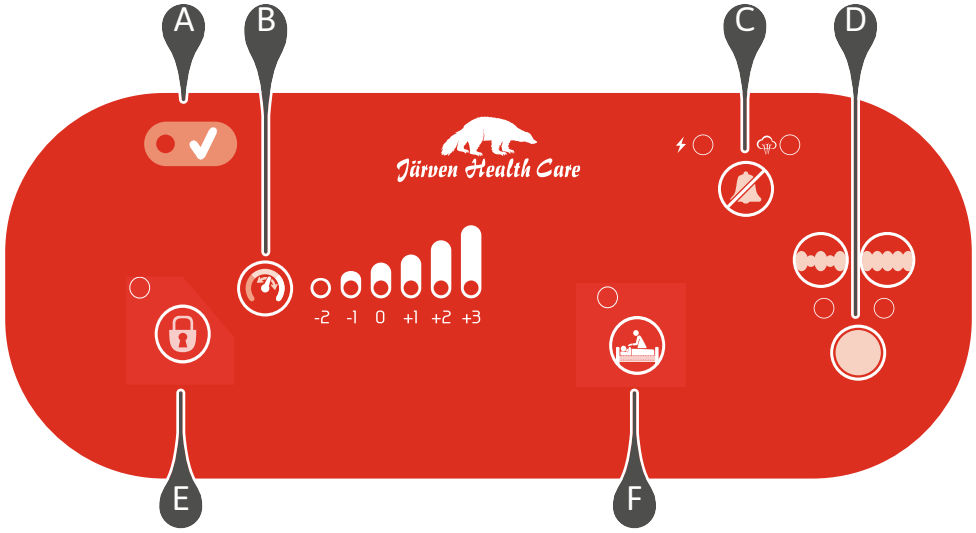
## Specifications, pump

| Pump OC30 | Specifications |
|---|---|
| Size | 28,0 x 11,0 x 20,5 cm |
| Shipping Weight | 3,4 kg |
| Pressure range | 20 ~ 70 mm Hg |
| Cycle time | 10, 15, 20 or 30 minutes |
| Classification | Class II; IP21; Typ BF** |
| Power specification | ~230 V AC/50 Hz,1A , 12 W |
| Fuse specification | 250 V, T 1 A |
| Degree of protection against electric shock | Class II, double insulated and without functional earth.<br>Connects to the mains. Type BF |
| Degree of protection against liquid ingress | IP 21 |

The pump is not approved for environments with anesthetic gases (AP/APG) and must not be used in the presence of flammable anesthetic gases.

# Overview panel - OC20

**Pump OC20 for 2 NX© and 2 PRO©**




The switch is located on the right-hand side of the pump. Press ON/OFF to switch the pump on/off.

**A** **The green light** indicates that the mattress is ready for use. Filling an empty mattress normally takes about 15 minutes. When the light is on, the mattress is ready.

**B** **Setting the comfort mode**
The air pressure of the mattress can be fine-tuned by pressing this button. The user's experience and comfort are affected by the comfort mode selected. The pump's factory setting/default position is mode '0'

**C** **Silent alarms**
In the event of an air pressure or electrical fault, the pump sounds an audible alarm. Press this button to silence this audible signal and start troubleshooting. In the event of an electrical fault, the lamp at " " lights up. In the event of an air pressure fault, the lamp at " " lights up.
**Has the alarm gone off? See page 28 - Actions in the event of an alarm.**

**D** **Dynamic or Static mode**
Press this button to choose the required operating mode, either dynamic (alternating) or static mode. The dynamic mode is the pump's factory-set/default mode and is recommended under normal conditions. When the right-hand indicator is lit, the mattress is set to static mode. When the left-hand indicator is lit, the mattress is set to dynamic mode (alternating pressure). The alternating cycle time is 10 minutes.

**E** **Unlock the panel**
The panel's buttons are locked after a period of time in order to exclude accidental or unauthorised change of the system's settings. To unlock the panel, press and hold this button for 5 seconds.
*(NOTE! This button is not available on older models)*

**F** **Nursing/care mode**
This selection sets the pump to static mode with maximum pressure. The function is used to facilitate nursing situations.
Nursing/care mode is cancelled by pressing this button again. If the button is not pressed again the mattress system will automatically retur to the previous mode after 30 minutes.
*(NOTE! This button is not available on older models)*

## Specifikations, pump

| Pump OC20 | Specifikations |
|---|---|
| Size | 28,0 x 11,0 x 20,5 cm |
| Shipping weight | 2,6 kg |
| Pressure range | 20 ~ 70 mm Hg |
| Cycle time | 10 minuter |
| Classifikation | Class II; IP21, Typ BF** |
| Power specification | ~230 V AC/50 Hz,1A , 12 W |
| Fuse specification | 250 V, T 1 A |
| Degree of protection against electric shock | Class II, double insulated and without functional earth.<br>Connects to the mains. Type BF |
| Degree of protection against liquid ingress | IP 21 |

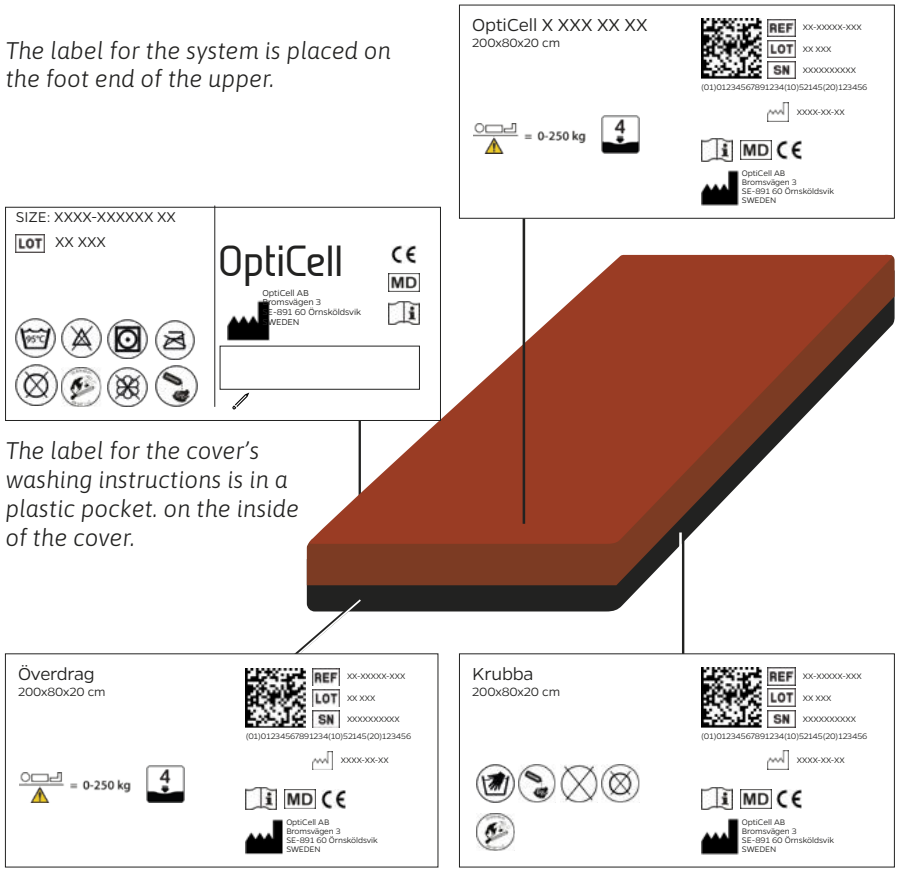
The pump is not approved for environments with anesthetic gases (AP/APG) and must not be used in the vicinity of flammable anesthetic gases.

# Labelling

## Mattress labels

Your OptiCell mattress system is labelled with a number of labels. Below is a schematic diagram picture of their placement. Please note that the number of labels and their individual design varies depending on the model.

*The label for the system is placed on the foot end of the upper.*




*The label for the cover's washing instructions is in a plastic pocket. on the inside of the cover.*

*The label for the bottom part of the sanitary cover is located on the inside of the base.*

*The crib label is placed on the inside of the crib. See page 17 for information on the structure of the mattress.*

## Pump labels

On the front of the pump is a Quick Guide with the pump's designation and which describes the functions of the pump. Here you can also see which mattress type that fits the pump.

There are two labels on the back of the pump. One label with the pump's serial number and the other with general information, including the pump's model number and date of manufacture (year and month).






# Explanation of symbols




Indicates article number




Specifies serial number




Indicates batch number



Indicates date of date of manufacture



Read the instructions for use before use



Indicates manufacturer



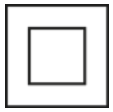

The product is a medical device product



This product is CE-marked according to MDR 2017/745



Type BF Applied part: Protection against electric shocks in accordance with IEC 60601-1.

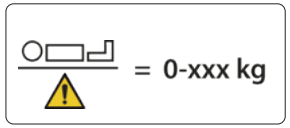


Electrical equipment Class II, double shielded




2... Protection against the ingress of fingers and solid objects larger than 12.5 mm

...1 Protection against the effects of vertically falling water droplets.




Indicates maximum user weight.



Specifies up to the wound category the mattress is adapted for.



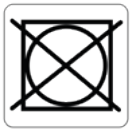
Evakuerings-funkation



Hand wash




Disinfection is carried out with alcohol-based or detergent with surfactants



Do not tumble dry



Must not be dry cleaned




Max temperature during washing



Do not use chlorine-containing detergents



Can be tumble dried at low temperature



Do not iron



Do not use fabric softener



Fire rated according to SS 876 00 01 EN 597-1 & EN 567-2

# Other information

## OptiCell's product liability

Product liability refers to the manufacturer's, importer's or seller's statutory liability for damages caused by the product. The Product Liability Act defines the manufacturer's, importer's or seller's statutory liability for any damage caused by the product. The rules apply to physical products in the form of loose objects, but also to products that are connected to other loose objects or immovable property. If there is no product that has caused any form of property or personal injury, product liability legislation is not relevant.

# Recycling

All materials in your OptiCell air mattress system, except for a few items inside the pump, can be energy recovered by incineration at dedicated incineration plants. The product contains no PVC.

PVC FREE

**Pump**

The used OptiCell® pump must not be dismantled and should be delivered to a recycling centre and labelled "Electronic waste".

**Mattress**

The OptiCell air mattress can be taken to a recycling station and sorted accordingly.

**For products made of both textile and combustible materials,** please separate the components before disposal.

**Textile components**: Sorted as textile waste. Leave them in the municipal textile collection or at recycling centres for textile recycling.

**Combustible material:** If the product contains foam or other combustible materials, please sort these as combustible waste. This should be left in the normal waste collection for incineration or energy recovery as "Combustible waste". For more information, please contact your local supplier or Järven HealthCare.

# Returns and complaints

Complaints must be reported in writing to your local supplier or Järven Health Care. Return of product must be made according to our instructions after the complaint has been approved. If the product is returned before the complaint has been approved, the closed and no compensation will be paid to the customer.

## Transport damage

Transport damage must be noted on the consignment note before signing in order to be valid. Thereafter contact your local supplier or the customer service department at Järven Health Care (0660-22 28 50, healthcare@jarven.se) and provide relevant information. For quicker handling of your case, we ask you to photograph the transport damage as carefully as possible before contacting customer service.

# Evacuation with OptiTex Evac

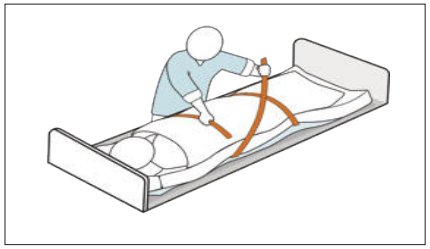
## Evacuation from bed:

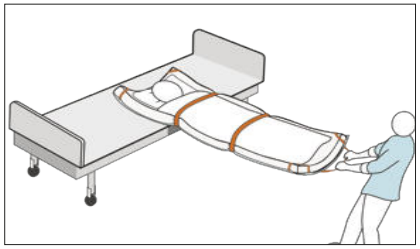
To detach the air hose, press the buckles located

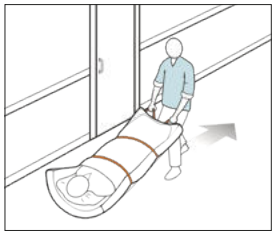



1. Inform the user of what is happening.
2. Disconnect the power cable from the power socket in the wall.
3. Place the power cable on the mattress.
4. Disconnect the air hose (see picture to the right) and the power cable from the pump.
5. Attach the transport cover on the air hose (see page 25).
6. Place the air hose on the mattress.
7. Lower the bed to the minimum height (if there is time).
8. Pull out the fixation straps on each long side of the mattress cover.
9. Secure the user, cord and hose set with the straps (see picture below).
10. Grasp the pull handles at the foot end and pull the mattress, at a 45-degree angle, from the bed and down onto the floor. (see picture below)

**To evacuate on stairs - follow the pictorial instructions at the bottom of the page for a safe evacuation.**







**EVACUATION ON A FLAT SURFACE**

1. Pull the mattress with the handles at the foot end.
2. Tilt your body slightly backwards. This makes evacuation easier and relieves the arms.
   **Walk at normal speed - do not run!**



**EVACUATION ON STAIRS**

1. **Walk backwards** dragging the mattress behind you until most of the mattress has covered the top stair.
2. **Turn** with your eyes and feet in the direction of travel, without letting go of the mattress.
3. Support yourself on the handrail with one hand and drag the mattress behind you with the other hand.
4. Follow the stairs all the way down, only stopping to support the mattress against your legs if necessary. Walk downwards **at normal speed - do not run!**



# Accessories




**OPTITEX HYGIENE COVER**

Hygienic cover in PU material with integrated, waterproof cable channel for reduced risk of bacteria spreading. The cover has a drip-proof waterproof zip on all four sides. All seams are welded and are protected with a drip shield.




**TRANSPORT BAG**

A practical bag for use in transport and storage. The bag is made of durable material and is washable.

## Related products

In addition to the product-specific accessories, we have a selection of products that can be combined with our OptiCell mattresses.



**RESCUE MATTRESS**

If the OptiCell mattress does not have the OptiTex cover with evacuation handles we recommend the JÄRVEN RESCUE MATTRESS to facilitate evacuation of the patient in case of danger (fire, gas leak, etc.)



**CUSHION ZUZZA**

A comfortable soft and air-permeable cushion which provides good comfort and has a long-life expectancy. The entire cushion is washable in high remperatures to enable efficient cleaning.



**RXP CUSHION COVER**

A wipeable cushion cover in the same material as Melissa's hygiene cover, PU.



**FIREPROOF TEXTILES TCS**

We have a selection of fireproof textiles in the material Trevira, which has an integrated flame retardancy protection. The textiles include blankets, cushion covers and sheets. Contact Järven Health Care for more information.



## Related products, positioning



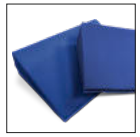
**FLEX HEELCUSHION**

Offers effective pressure relief for patients with pressure-sensitive areas from lower leg to foot/heels. The heel cushion has a laminate of LENTEX for extra hygiene control



**SCHAMPI CUSHION**

Offers a safe seating position for those who are unable to sit up without support. Järven Health Care has, in collaboration with healthcare professionals, developed the Schampi pillow, which is easily placed behind the user's back.



**JÄRVEN WEDGE CUSHION**

The Järven wedge cushion helps to position and relieve the user to reduce the risk of pressure ulcers. It can be used as a side support or to raise the head or foot end.



**30° POSITIONING WEDGE - SYST'AM P910L**

A sturdy aid for healthcare professionals who perform continuous repositioning of patients. The wedge helps prevent pressure ulcers and other complications often associated with prolonged bed rest.



**HEEL SUPPORT BOOT - SYST'AM P903T**

A comfortable heel support specifically designed for patients with normal or slightly limited mobility. It reduces pressure on the most vulnerable areas of the foot and reduces the risk of pressure ulcers.

**Contact your local supplier or Järven Health Care for information about our complete range of positioning positioning aids and to place an order.**

# Summary, warning boxes

These warning boxes provide information about important safety aspects or hazards. Failure to understand or follow the information may result in injury to yourself or others. To fully understand these warnings, you must have read the entire user manual.



The mattress cover must always be right side up for the drip edge to act as a protective roof over the zipper



In the home environment, it is not uncommon for beds to have spring mattresses. These must not be used as there is a risk of the air mattress slipping out of the bed with the user.



The four handles on the base are intended for use when moving the mattress without a patient.
THESE MUST NOT BE USED WITH A PATIENT ON THE MATTRESS.



If contamination of the foam core is detected, the foam core should be discarded and replaced to maintain a safe care environment.



OptiCell mattress pads must not be used without a good quality mattress as a base mattress.



In accordance with the NPUAP/EPUAP Directives, the user's condition should be checked regularly.



The alarm is an indication that the system is not working properly.
MEASURES TO FIND THE CAUSE SHOULD BE INITIATED IMMEDIATELY.



The pump is not approved for anesthetic gas (AP/APG) environments and must not be used in the presence of flammable anesthetic gases.



Järven Health Care

Järven Health Care is the exclusive world-wide distributor of OptiCell air pressure mattresses and reserve the right to update and amend this user manual as necessary with the disc overy of any factual and or spelling errors.

**Additional copies can be ordered from your local supplier or Järven Health Care.**
**Copying for internal use is permitted.**

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