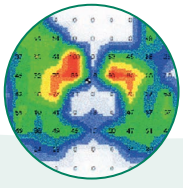
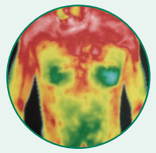
MoeckWarmingSystem®

A modern, comprehensive temperature management system for efficient patient temperature control in medical facilities





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Impressum

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What is the purpose of a temperature management system?

Human-beings need a constant body temperature in ordervto carry out all of their bodily functions properly. When conscious, a healthy human body is able to adjust and and maintain its body temperature even during changing temperature conditions.

Only in some special situations are hypothermic effects used deliberately, e.g. in emergency and intensive medicine, cardiac surgery, or neurosurgery. Normally, however, hypothermia is not desirable, as it affects the body‘s physiological enzymatic processes. This can lead to a range of complications including increased blood loss due to blood coagulation disorders, cardiac compli-cations, post-operative discomfort, an increased chance of wound infection, and a resulting delay in tissue repair. The above complications can in turn retard the patient‘s recuperation, meaning more time spent in hospital and thus higher costs.

When minimizinge the above risks and costs as far as possible, a comprehensive temperature management system is not just a benefit but, a necessity. The temperature management system selected has to support the hospital team before and after as well as during surgery.

The *MoeckWarmingSystem*

an efficient temperature management system as a constituent part of quality-based patient care

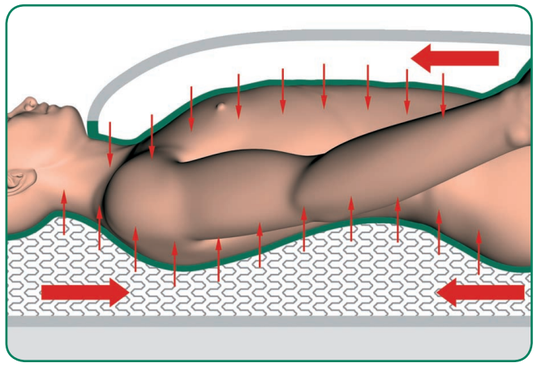
Thanks to its range of product solutions, the ***Moeck-****WarmingSystem*® is an effective and flexible tool that provides optimal temperature control for adult and juvenile patients. It was developed with the aim of supporting in the best possible way the day-to-day work in medical facilities with an emphasis on quality-based patient care.

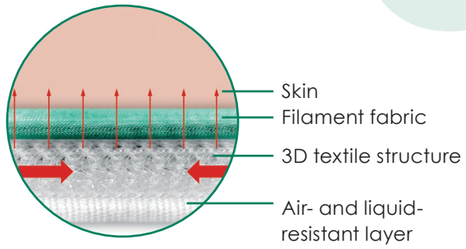
The Concept

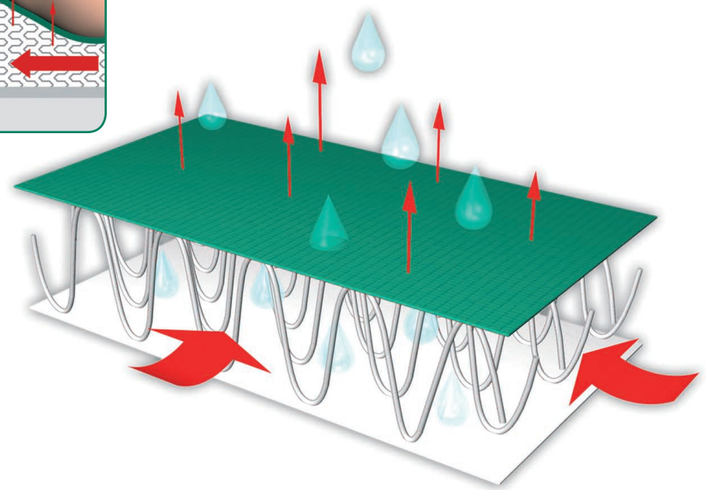
Based on convective air transfer, the ***Moeck****Warming-System*® comprises a forced air warming device (Twïnwarm) and various types of reusable textile blankets (temperature control from above), textile mats (temperature control from below), and combinations of both (temperature control from above and below). The temperature-controlled air, generated by the air-warming device, is directed to the inside of the textile products via one to two flexible hoses. Due to the careful selection of material for the textile products, the air is distributed evenly around the patient‘s body contour, providing effective patient temperature control in line with the setting on the air-warming device while at the same time avoiding air build-up.

The *MoeckWarmingSystem*® in detail

The structure of fabric blankets and underlays







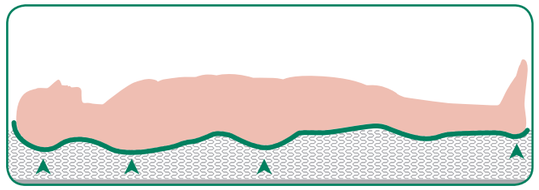
The red arrows illustrate the air distribution principle of the ***Moeck**WarmingSystem*®

The textile products of the ***Moeck**WarmingSystem*® are composed of up to three carefully chosen technical fabrics. Each of them has a specific function that, when combined, form a perfectly matched system.

The green side, which faces the patient, is made of a finely porous filament fabric (about 35 µm pore size), which provides even, large-area air distribution due to the structure of its surface. The material composition of the filament fabric enables good moisture transport properties and a quick drying time. As a result, the skin's surface remains relatively dry, and cooling by so-called „evaporation chills" is generally reduced. Built-in carbon fibres also counteract static charge.

The white material is equipped with a coating that serves as a barrier to air and liquid. As a result, the air supply is directed to where it is needed - namely to the patient. Liquid ingress is also inhibited on the side facing away from the patient.

A 3D textile structure is additionally fitted in all the ***Moeck**WarmingSystem*® mats. Due to its elastic character, it fits the body's contour perfectly, making temperature control possible in an position and without interruption at the contact points. It also minimizes the risk of decubitus by reducing pressure peaks over the whole surface.



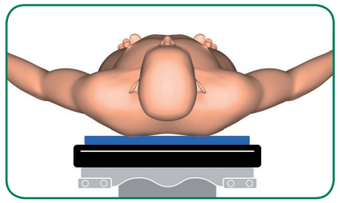
All of the textile materials used are high-strength, durable, X-ray transparent, and latex-free. Our textile products are also compatible with other medical forced-air warming devices. Further information is available upon request.

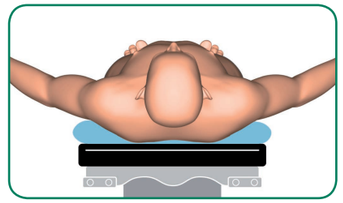
Temperature control from below - a comparison

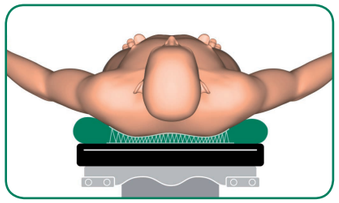
Conductive heat systems such as **heat mats** control the patient's temperature at the contact surface. In conductive systems from below, the contact surface is therefore relatively small.

Standard, convective **disposable paper warming blankets** are pressed together beneath the patient at the contact points and swell up on the sides. This increases the contact surface for temperature transfer in comparison to conductive systems.

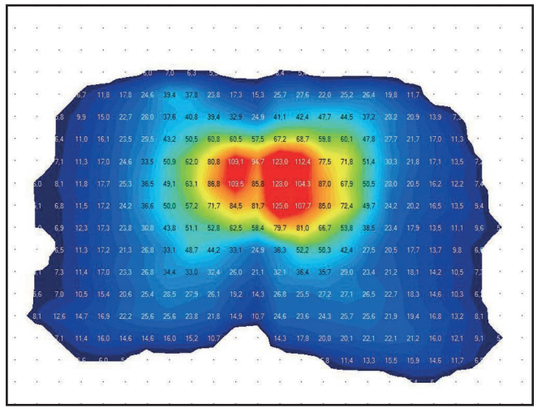
The ***Moeck**WarmingSystem*® provides an even distribution of the forced-air supply at the contact points due to the in-built **3D textile structure.** Thanks to its textile character, the filament fabric fits snugly along the entire contour of the body.



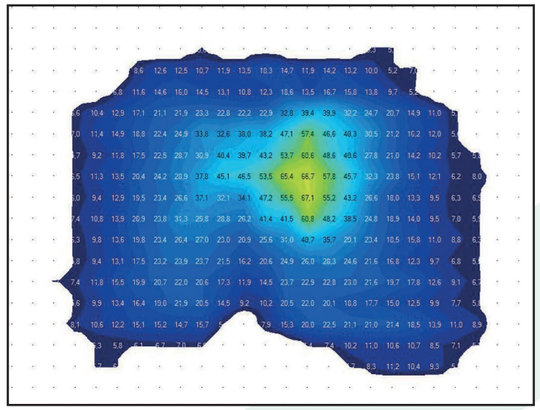




Surface pressure measurements - a comparison



Surface pressure measurement of the pelvis on a conventional OP-Table without mat.



Surface pressure measurement of the pelvis on a conventional OP-Table using a ***Moeck**WarmingSystem*® mat with integrated 3D textile structure.

The benefits of the *MoeckWarmingSystem*

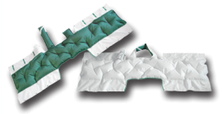
- Effective warming and alternatively mild cooling of adult and juvenile patients
- Can be used before, after, and during surgery as well as in emergency and intensive care
- Large choice of textile product solutions for various medical procedures

Temperature control from above	Temperature control from below	Temperature control from above and below
	• Also include a pressure-relieving 3D textile structure • High stability of mats with 3D textile structure makes it easy to move patients	
Reduction of hypothermia risk	Reduction of hypothermia and decubitus risk	

- All textile product solutions are lightweight and liquid-absorbent
- Due to their textile nature, the ***Moeck****WarmingSystem*® blankets and mats are very cosy and can be draped around the patient's body contour extremely well
- The A well-considered design of the textile blankets and mats with several mutually independent air inlets and snap-fasteners enables the products to be used flexibly in different patient positions
- Other positioning aids can also be used easily with the blankets and mats
- All ***Moeck****WarmingSystem*® blankets and mats are reusable. In the rental version, they are available upon request with „as-needed" all-round service including collection, specialized laundering and delivery.*
- This „as-needed" supply arrangement reduces the strain on the cost structure (reduced capital investment and storage costs, no disposal costs)
- Due to the special characteristics of the ***Moeck****WarmingSystem*®, savings potentials are further achieved by dispensing with the need for single-use drapes (impermeable), surgical drapes (absorbent) or gel-mats (pressure-relief).

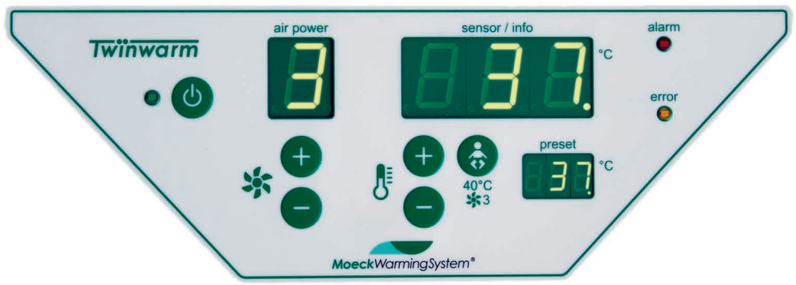
* This sales concept is currently only available in Germany and Austria. Information about sales options in other countries can be obtained from your local dealer or directly from the manufacturer.

The *MoeckWarmingSystem* in overview

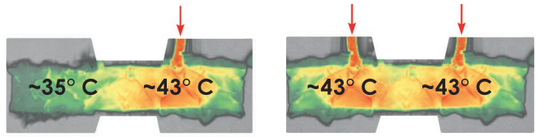
	Product picture	Product name	Type	Size* and weight	Number of air inlets	Product details
Forced-air warming device		**Twinwarm (TW)** (page 10)	921	31 x 4 0x 62 cm (D x W x H) about 9,5 kg	●●	• Temperature setting to the degree • Variable airflow • Quadruple air filtering system: one EPA filter and six 3-layer pre-filters • Integrated hose end receptacles, standard rail holding-clamp and swivel castors
Warming blankets - temperature control from above		**Upper body blanket** (page 13)	894	186 x 70 cm (L x W) Head section 68 x 15,5 cm (L x W) about 480 g	●●	• With built-in active head temperature control
		Full body blanket (page 12)	895	182 x 118 cm (L x W) about 770 g	●●●	• Snap-fasteners allow separation of top third
		Lower body blanket (page 14)	897	111 x 115 cm (L x W) about 450 g	●	• Can also be used as a full body blanket for babies and infants
Warming mats - temperature control from below with pressure-relief		**Baby/Infant** (page 21)	902	124 x 52 cm (L x W) wings 94 x 48 cm (LxW) about 860 g	●●●●	• integrated hood and lateral wings • Can be folded to incubator size • Turning down the cover turns it into a kind of sleeping bag • The size of this „sleeping bag" can be adjusted using the snap-fasteners on the side
		Universal II (page 16-17)	906	195 x 62 cm (L x W) about 1970 g	●●●	• Temperature control and pressure-relieving support over the entire surface of the OR table • supports an easier re-bedding
		Universal III (page 15)	910	110 x 62 cm (L x W) about 1200 g	●●●●	• Temperature control and pressure-relieving support over the entire surface of the OR table • With built-in hood made of filament fabric for head and shoulder covering • Ideal for the gynaecological operating table
Warming blankets and mats - temperature control from above and below with pressure-relief		**Adults II** (page 18-19)	904	Upper section 70 x 160 cm (L x W) Lower section 110 x 62 cm (L x W) about 1590 g	●●●●	• With built-in upper body blanket • Temperature control and pressure-relieving support over 60% of the OR table • Upper body blanket in breast area and at the head opening - separable via snap-fasteners
		infant cardio (page 20)	909	Thorax hoses 48 x 19 cm (L x W) Lower section 86 x 73 cm (L x W) about 590 g	●●●	• Ideally suited for the cardiac catheter table • With rolls of fabric on the side to prevent liquids/fluids from leaking at the sides • With resting-surface perforations for liquid/fluids drainage

* since the textile products shrink during the first specialized washing cycles, the specified dimensions of the usable surface (excluding air inlets) apply after several cycles and with a tolerance of ±2 cm.

The air warming device

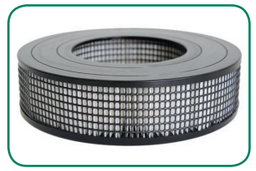


The Twïnwarm forced-air warming device with its two hose connections is a real „two-in-one“. Its two hose connections improve the effectiveness of the temperature management system.



The ***Moeck**WarmingSystem*® einfachair warming device can be operated easily and intuitively by means of a user-friendly display. Due to accurate-to-the-degree temperature setting between mild cool (heating off) and 28 °C to 43 °C as well as an individual five-stage airflow output, the desired temperature target can be reached quickly and easily. The selected (preset) and the actual hose-exit-air-temperature (sensor/info) are both permanently displayed and are thus with in sight and under control at all times.

The hose-exit-air-temperature is directly and reliably measured by sensors mounted in both hose outputs.



The air warming device is fitted with a quadruple filter system for a high degree of safety and hygiene. An EPA filter inside the device removes fine particles from the ambient air while six 3-layer pre-filters filter out coarse particles.

Integrated hose end receptacles, a standard rail holding clamp and swivel castors allow for flexible use of the air warming device. The maintenance of the device is simple and consists only of regular replacement of the prefilters (when needed) and the EPA filters (after two years at the latest).

Twïnwarm – TW

Article no.	–	12TW921EN
Size (DxWxH)	–	31 x 40 x 62 cm
Weight	–	about 9,5 kg

simple maintenance

Warming blankets

temperature control from above

FULL BODY BLANKET

Type	–	895
Size* (LxW)	–	182 x 118 cm
Weight	–	about 770 g

- The full body blanket of the ***Moeck****WarmingSystem*® is fitted with three air inlets
- Thanks to its built-in snap-fasteners, upper third of the full body blanket is separable, which makes it well-suited for use in surgery.

Our customers usually use this textile product solution for pre- and post-operative use.

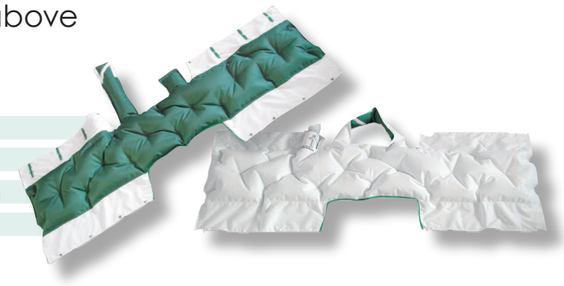
* since the textile products shrink during the first specialized washing cycles, the specified dimensions of the usable surface (excluding air inlets) apply after several cycles and with a tolerance of ±2 cm.

Warming blankets

temperature control from above

UPPER BODY BLANKET

Type	–	894
Size* (LxB)	–	186 x 70 cm
	–	Head section 68 x 15,5 cm
Weight	–	about 480 g



- The upper body blanket of the ***Moeck****WarmingSystem*® is fitted with two air inlets
- A head-hose integrated into the upper body blanket enables active head-temperature control
- Snap-fasteners can be used for easy and user-friendly covering of outstretched arms

Our customers usually use this textile product solution for intra-operative uses of short to medium duration.

* since the textile products shrink during the first specialized washing cycles, the specified dimensions of the usable surface (excluding air inlets) apply after several cycles and with a tolerance of ±2 cm.

Warming blankets

temperature control from above

LOWER BODY BLANKET

Type	–	897
Size* (LxB)	–	111 x 115 cm
Weight	–	about 450 g

- The lower body blanket of the ***Moeck****WarmingSystem*® is fitted with a single air inlet

Our customers usually use this textile product solution for short surgical procedures in the upper breast area. The lower body blanket is also ideal for full body temperature control in babies and infants.

* since the textile products shrink during the first specialized washing cycles, the specified dimensions of the usable surface (excluding air inlets) apply after several cycles and with a tolerance of ±2 cm.

Warming mats

temperature control from below with pressure-relief

UNIVERSAL III

Type	–	910
Size* (LxW)	–	110 x 62 cm
Weight	–	about 1200 g

- The Universal III from the ***Moeck****WarmingSystem*® is fitted with four air inlets
- The mat covers about 60% of the surface of the OR table, enabling temperature control of the patient and a pressure-relieving position
- When needed, an integrated filament fabric hood offers optional cooling protection by covering the head and the shoulders.

Our customers usually use this textile product solution for short- to medium-length gynaecological, urological, and surgical operations.

* since the textile products shrink during the first specialized washing cycles, the specified dimensions of the usable surface (excluding air inlets) apply after several cycles and with a tolerance of ±2 cm.

Warming mats

temperature control from below with pressure-relief

UNIVERSAL II

Type	–	906
Size* (LxW)	–	195 x 62 cm
Weight	–	about 1970 g

- The Universal II of the ***Moeck****WarmingSystem*®w is fitted with three air inlets
- This model enables temperature control and pressure-relieving support over the entire surface of the OR table.

Standard positioning aids and patient positioning systems can be used together with the Universal II. With the aid of a slide or rolling board, the patient can easily be transfered from one bed to another together with the Universal II mat. Many of our customers see this textile product solution when combined with a thin sheet over the patient as perfectly sufficient for optimum temperature control.

Tip: The use of additional pressure-relieving aids in the heel area can be avoided by simply folding the Universal II.

* since the textile products shrink during the first specialized washing cycles, the specified dimensions of the usable surface (excluding air inlets) apply after several cycles and with a tolerance of ±2 cm.

Warming blankets and mats

temperature control from above and below with pressure-relief

ADULTS II

Type	–	904
Size* (LxW)	–	Upper section 70 x 160 cm
	–	Lower section 110 x 62 cm
Weight	–	about 1590 g

- The Adults II of the ***Moeck****WarmingSystem*® is fitted with four air inlets
- The integrated upper-body blanket can be placed over the patient at any time
- To provide maximum flexibility, the integrated upper-body blanket is separable using snap-fasteners in the breast area or at the head opening.

Standard positioning aids and patient positioning systems can be used together with the Adults II. Our customers usually use this textile product solution for medium-length to long gynaecological, urological, and surgical operations.

* since the textile products shrink during the first specialized washing cycles, the specified dimensions of the usable surface (excluding air inlets) apply after several cycles and with a tolerance of ±2 cm.

Warming blankets and mats

temperature control from above and below with pressure-relief

INFANT CARDIO

Type	–	909
Size* (LxW)	–	Thorax hoses 48 x 19 cm
	–	Lower section 86 x 73 cm
Weight	–	about 590 g

- The infant cardio mat of the ***Moeck****WarmingSystem*® is fitted with three air inlets
- Designed for the special requirements of cardiac catheter tables, this mat contains lateral rolls of fabric to prevent liquid spill. It is also fitted with a reclining area with perforations for liquid drainage
- The integrated thorax hoses can be draped around the patient at any time. They offer even temperature control from above or from the side
- The flaps on the side of the mat can either be used to fix it onto the OR table or simply be turned down.

Tip: If the mat is turned 180°, the thorax hoses can also be used for temperature control of the lower extremities.

* since the textile products shrink during the first specialized washing cycles, the specified dimensions of the usable surface (excluding air inlets) apply after several cycles and with a tolerance of ±2 cm.

Warming mats

temperature control from below with pressure-relief

BABY/ INFANT

Type	–	902
Size* (LxB)	–	124 x 52 cm I wings 94 x 48 cm
Weight	–	about 860 g

- The Baby/Infant mat of the ***Moeck****WarmingSystem*® is fitted with four air inlets
- An integrated hood and lateral wings offer optional cooling protection by covering the head and the abdominal area.

Due to its flexible textile nature, the baby/infant mat can easily be folded to incubator size. Where needed, the mat can be turned into a kind of sleeping bag by folding it over - its size can be adjusted using the snap-fasteners on the side. Our customers usually use this textile product solution in paediatrics together with positioning aids.

* since the textile products shrink during the first specialized washing cycles, the specified dimensions of the usable surface (excluding air inlets) apply after several cycles and with a tolerance of ±2 cm.

Notes

INFO

Our textile products are also compatible with other medical forced-air warming devices. Further information is available upon request.

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More information about ***Moeck****WarmingSystem*®
is available online at: **www.moeckwarmingsystem.com**

Moeck*WarmingSystem*®