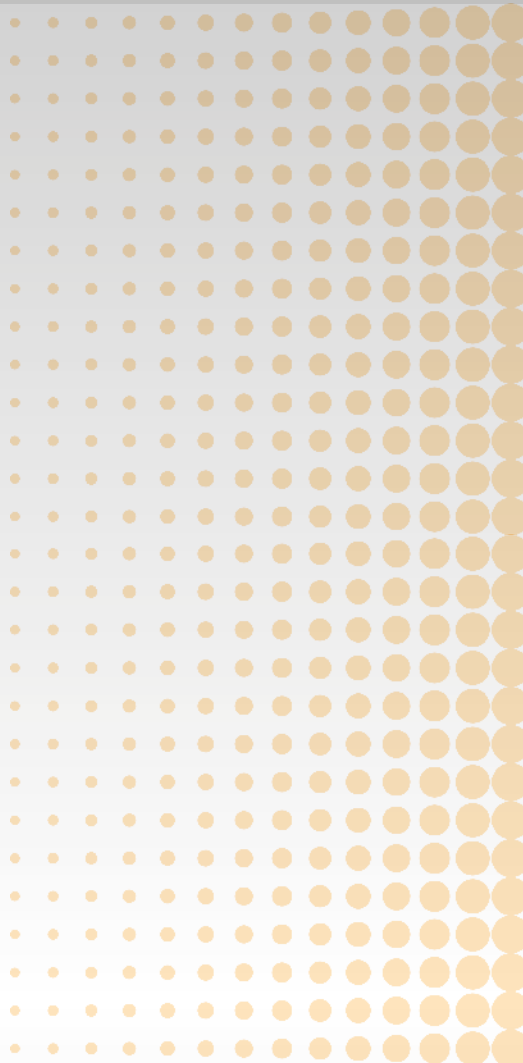


# HIGHLY DYNAMIC SEATING AND POSITIONING ALONG NEW AXES FOR WHEELCHAIR DRIVERS

PRODUCT CATALOGUE



**COSEAT**<sup>®</sup>  
Floating module

## INFO

### moso® and the COSEAT®

*The seating interface between customers and their wheelchair base determines their health, mobility and quality of life. Physical constraints of power wheelchairs often limit seating to move over one axis. Unsatisfied with this solution, we have developed a dynamic and innovative seating system that now moves along three axes. Introducing the COSEAT®, which redefines seating in power wheelchairs. The new COSEAT® offers many new opportunities for medical and therapeutic care as well as greater comfort and better quality of life.*



The figure illustrates COSEAT R complete with optional equipment.

### COSEAT® creates greater freedom of movement along 3 axes

COSEAT® is a brand-new product with a vast array of functions. The key features of the COSEAT® are best illustrated by this example: Imagine a plate upon a hemisphere, the plate moves in almost all directions but is unstable and difficult to control. The COSEAT®, like the plate, offers the same flexibility in all three dimensions but it is always controlled by the user and tailored to the user's needs and desires. These functions are based on a specially developed mechatronic, controlled by four engines which allow the base plate of the COSEAT® to move in almost all planes. The seating system is mounted onto this base plate. In any case the system will only tilt as far as it is safe and therapeutically necessary. A cutting edge computerised control system allows certain movements and sequences to be attained automatically at the touch of a button. This results in positioning options and movements that offer new alternatives in medical-therapeutic care. They also offer more comfort and quality of life to the user. The COSEAT® is available in three versions. "COSEAT® basic" can be mounted on almost all standard power wheelchairs between the base and the seating system. "COSEAT® element" is delivered with a seating system and can also be mounted on almost all standard power wheelchair bases. "COSEAT® complete" is delivered as a complete powerwheelchair with seating system and power wheelbase.



Powered seat height adjustment up to 18 cm



Anterior tilt up to 33 degrees of tilt



Posterior tilt from 33 to 40 degrees



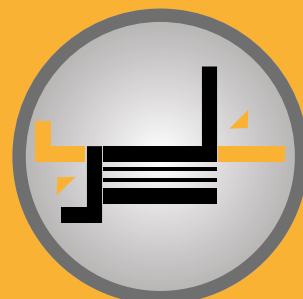
Lateral tilt up to 22 degrees each side



Diagonal tilt, diagonally right and diagonally left, up to 25 degrees in each direction



Biomechanical length compensation of the backrest prevents shear forces between user and backrest



Horizontal positioning mobilizes the user in prone, supine and side-lying positions.



Trendelenburg positioning (feet above head) is available if prescribed by a physician



Reverse Trendelenburg positioning (head up) is ideal as a comfortable resting position



Anterior assist is individually programmed and facilitates transfers independently or with the help of an assistant

“Always in the perfect position”

## Programming



*Never have such complex positions, ideal for therapy and medical care, been possible in a powerchair via power wheelchair controls. The COSEAT® makes sitting in a powerchair more dynamic than ever. Some of the functions can be programmed by the user, others must be programmed by moso® in agreement with a medical practitioner. This collaboration ensures optimum functionality and safe use of the COSEAT®.*

## Electronics



*Controlling the COSEAT® is simple and can be adapted to the individual needs of the user. The COSEAT® can be controlled by either two or four buttons in combination with the joystick of the wheelchair. When traditional joysticks are not appropriate alternative controls such as head control and Sip and Puff are available. The wide choice of input control devices allow independent access to all functions of the COSEAT®.*

*A safe operation of the COSEAT® is possible after a short demonstration because unsafe or incompatible functions are prevented through correct programming of the electronics.*

*The COSEAT® has a high-quality display on which all functions are displayed clearly - even in bright sunlight. The memory function saves multiple positions and sequences that can be attained at the touch of a button. The COSEAT® motors are quiet, low-maintenance and very reliable.*



**“ COSEAT® manages my pressure relief programme, which means I now don't constantly worry about the build up of pressure. It has dramatically improved my quality of life. ”**



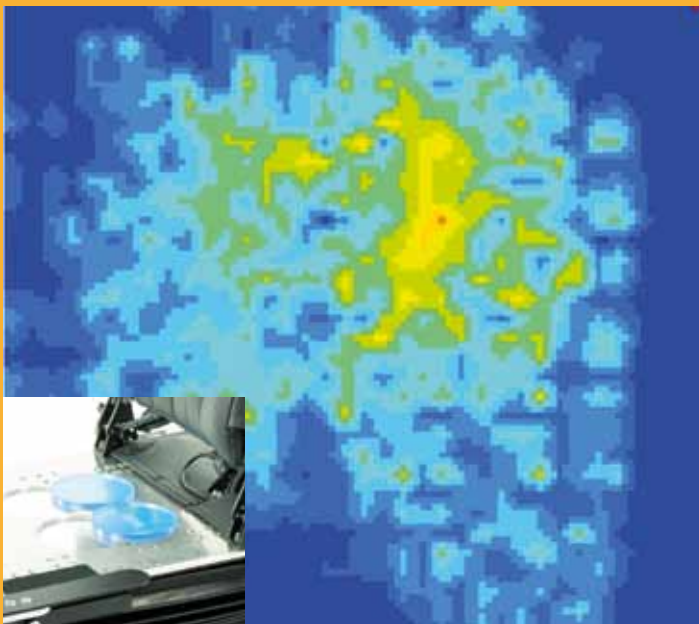
## CLINICAL USE

The COSEAT® allows the user a drive experience free from the ground on which they are travelling and it also provides effective pressure relief. All these benefits combined allow wheelchair users maximum independence and mobility. The primary reason for so many diverse functions is to correct common problems caused by static seating. The COSEAT® offers new solutions to medical and therapeutic problems. Each system is tailor-built which is the reason why two COSEAT® systems can look and function completely differently from one another. Our aim is to find the best solution for every individual. The best way to find out which COSEAT® will help improve your health, comfort and quality of life best is to talk to our experts.

### Pressure wound prevention and care

The natural way of sitting is to constantly shift your weight which then allows full circulation of the buttocks which in turn prevents pressure wounds. People who are restricted in their movements and are not able to redistribute pressure independently are at risk of decubitus ulcers.

The COSEAT® is highly programmable and movement is possible across all axes which allows the settings, movements and sequences to be individually adapted. As a result many treatments that were necessary to avoid decubitus ulcers (such as long periods of horizontal positioning) can be omitted entirely or partially.



#### Gel pads to allow optimum pressure relief

Embedded within the aluminum base plate of the COSEAT® are two ten-centimeter gel pads positioned under the ischial tuberosities. This provides additional protection beneath the cushion to avoid a build up of pressure. The resistance of the gel pads can be adjusted individually to optimize pressure relief.



#### Anterior tilt/ tilt/ lateral tilt/ diagonal tilt

For optimal and individual pressure relief, the COSEAT® can be tilted in any direction: forwards and backwards, left and right, but also diagonally (diagonal tilt right and diagonal tilt left). The tilt angle is controlled by the user so that areas sensitive to high pressure build up can be targeted to relieve pressure up to 80%.



#### Anti-decu mode

Small and regular position changes can be easily integrated into daily routines which can prevent decubitus ulcers and can even have long-lasting positive effects for example avoiding permanent, mobility-limiting postures and skeletal deformities. COSEAT's whole dynamic unfolds with its standard-fit and individually optimized motion programs. The anti-decu mode tilts laterally automatically by alternating the lateral tilt to the right and to the left. In this mode the user can individually adjust the angle and direction of tilt, the resting time and the actuator speed. At-risk areas are protected by this regular redistribution of pressure. Even small movements can have long lasting positive effects and they can easily be included into everyday life.. These changes can often avoid permanent poor posture.

## Trendelenburg positioning



The COSEAT® allows a position which brings the feet above the head known as the Trendelenburg position. In order to avoid user errors and health risks the Trendelenburg position cannot be activated in the standard mode. If medically prescribed, the moso® team will program the COSEAT® in cooperation with a doctor and a therapist (for example max. 10 seconds long and 10 degrees inclination). Once programmed, this position like any other COSEAT® position, can be activated through the menu. There are numerous medical and therapeutic reasons for Trendelenburg positioning:

- stabilises blood circulation
- acts as a shock position
- mobilises pulmonary secretions to facilitate expiration of sputum
- enables percussion and vibration of the lungs
- alters the Ventilation perfusion (VQ) match in the lungs
- supports lymphatic drainage

## The Basal Stimulation Concept

COSEAT® movement programmes activate the body and allow transitional experiences to those with restricted movements. Dynamic seating stimulates the muscles throughout the whole upper body which can increase perception and attention.



### Compensation of spinal irregularities

The wide array of positioning possibilities of the COSEAT® provide solutions for those with spinal irregularities such as scoliosis. Certain positions offer tension relief of the neck, shoulder and trunk muscles which can facilitate head control. Often it increases sitting tolerance meaning longer periods in the wheelchair and therefore more mobility and independence.

### Flow mode

Flow mode is when the COSEAT® is programmed to tilt in all directions in a continuous, fluid motion. The tilt angle and the speed of flow can be adjusted individually by the user. The flow of movement in all directions relieves pressure and can help simulate natural sitting behavior for users with limited mobility. Even a barely perceptible angle of tilt of only a few degrees already influences the whole body sustainably and positively. Pain caused by muscle spasms can be controlled through continuous movements of the flow mode.

## COMFORT AND SECURITY

### Floating function: Automatic angle compensation



The COSEAT® solves an age-old problem faced by wheelchair users. An innovation to the world market is the gyro controlled seat angle which balances the angle of the seat in the relation to the ground. Hereby the users are always sitting in their individually programmed, perfect position. When driving up- or down a platform or along a sloped pavement the COSEAT® levels the seating surface so that these changes in ground surface go unnoticed. On particularly steep ramps this function provides considerably more safety, because the tilt in space shifts automatically in order to ensure increased stability and safety.

### Low seat to floor height

Despite the many functions of the „COSEAT® complete“ the seat to floor height is only 49 cm. This ensures that the user is still able to drive under tables comfortably and into a car via a ramp without issue.



### Anterior assist function

A further COSEAT® feature is the anterior assist function where the seat, leg rest and back angles along with the seat height are programmed to the optimum transfer position for the user. Ideally the footplate lies at ground level and does not have to be removed. Users with the ability have a perfect starting position for an independent transfer. People without the ability to transfer independently can use the Anterior Assist function for an assisted transfer with the help of a care giver or family member.





## THE COSEAT® AT A GLANCE

### COSEAT® models

The COSEAT® is a stand-alone module which effectively redistributes pressure of people seated in power wheelchairs. It has many varied applications and is compatible with most common power wheelchair bases and their control systems. The COSEAT® is available in the following versions:



#### COSEAT® basic

COSEAT® basic can be installed as an independent module and can be adapted perfectly to the existing wheelchair base and seating system. Limitations in functionality arise only when the current seating system itself does not have certain features or supports. The weight of the module at approximately 30 kg is no challenge for most power wheelchairs. The assembly of the COSEAT® must be carried out by Motion Solutions.



#### COSEAT® element

When using an existing power wheelchair base, COSEAT® element is the right choice. It consists of the COSEAT® basic, which is complemented by a high-quality seating system from Motion Concepts. This solution ensures the full functionality of the COSEAT® and furthermore the user keeps the joystick and the driving characteristics of the chair which he or she is familiar with. The assembly of the COSEAT® element must be carried out by Motion Solutions.



#### COSEAT® complete

This solution comprises of the high-quality power wheelchair by ROVI, a high-quality seating system by Motion Concepts and of course the CoSeat itself. The harmonization of these three components ensures maximum functionality and reliability as well as maximum customization. The power wheelchair base by ROVI is mid wheel driven and therefore very versatile. The ROVI is suitable for indoor as well as for outdoor use, the innovative independent suspension allows optimum driving comfort and performance. The ROVI has a slim design but is extremely stable and can negotiate steps and steep inclines effortlessly. With a speed of 6 km/h, it has a driving range of approximately 25 km.



#### TECHNICAL DATA

COSEAT®	
System height	130 mm
Seat to floor height (COSEAT® complete)	490 mm
Weight	30 kg
max. load	160 kg
Seat lift	180 mm
max. lateral tilt	22 degree
max. tilt	33-40 degree
max. anterior tilt	33 degree
max. tilt over all	66 degree
Diagonal tilt (diagonal right tilt, diagonal left tilt)	25 degree
Width ROVI / COSEAT® complete	59 cm
Length ROVI / COSEAT® complete	91 cm

- Lift function
- Floating module: automatically corrects the seating angle on uneven ground - when driving up, down or along ramps and over obstacles the COSEAT® changes the angle of the seat automatically so that it remains in the user's favoured position, simultaneously maintaining dynamic and static stability
- Centrifugal force compensation when turning corners and compensation of braking and accelerating
- Tilt
- Anterior tilt
- Lateral tilt
- Diagonal tilt
- Anti-decubitus mode: pressure wound prevention through automatic lateral tilt
- Multi-tilt mode: automatical tilt in all directions
- Self adjustable angles and automatical tilt intervals
- Memory function



## Easier Transfers



*It is possible to tilt laterally up to 22 degrees either side at any seat height. Swing away armrests on both sides allow a significantly easier transfer. These functions apply to both the seated and the lying position because the COSEAT® provides a complete supine position. Up to 33 degrees of anterior tilt is an ideal way to facilitate the transfer. To support transfers further the COSEAT® has an integrated and stow away transfer board.*

## Smooth movements and transitions



*The COSEAT® is designed to transition from position to position in a gentle manner, free from vibration. The speed of actuators provides comfortable transitions but without being too slow. The system does not come to a sudden stop but eases into its final position.*

## Security

*The COSEAT® was developed specifically for use in medical and therapeutic areas as well as for private use. Therefore the included safety equipment meets the highest standards:*

- Independent monitoring of all functions such as power, temperature, voltage, drive and cable damage.
- Smart controls detect any incompatible or illogical commands.
- Speed settings of the powerchair are automatically activated as per the position of the COSEAT®.
- All mechanical and electronic elements and cables are hidden away and protected against damage and humidity. The mechanism and electronics are also well protected to safeguard other people around the system particularly children.
- Extremely stable, even at extreme tilt angles and on uneven ground.



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