

h/p/cosmos®

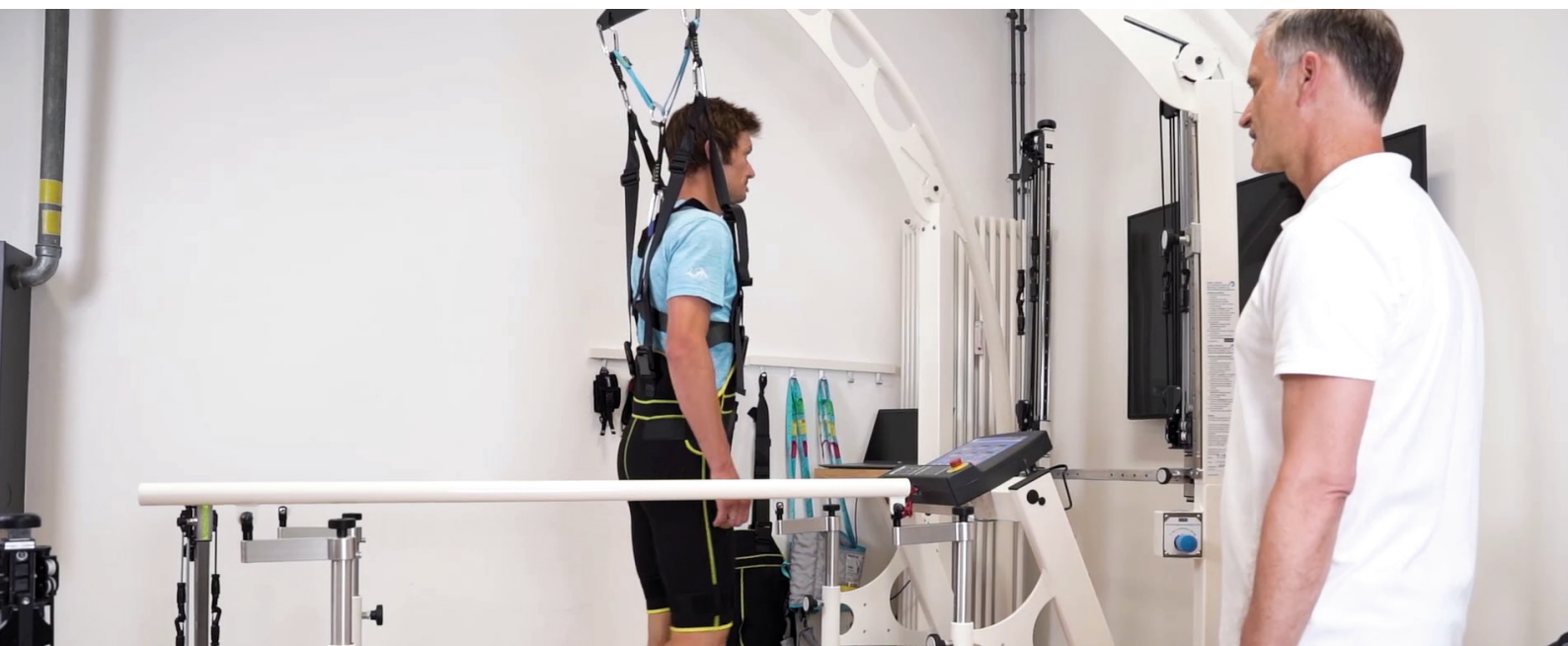


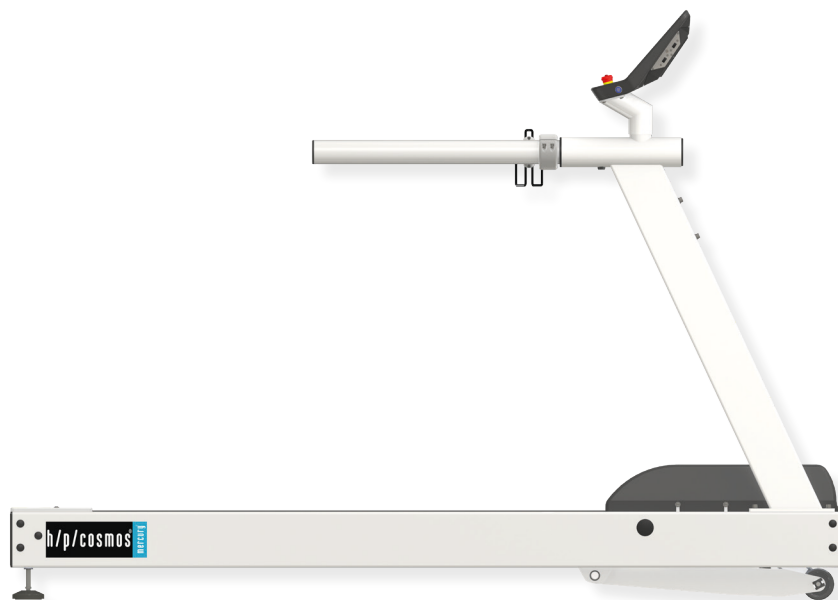
therapy solutions

REHABILITATION, MEDICAL AND DIAGNOSTICS

TABLE OF CONTENTS

Reliable treadmills made in Germany	4
Flexible handrail concept	5
h/p/cosmos treadmill series	6
Service, lifetime, spare parts	7
Why our systems are the right choice	8
h/p/cosmos connectivity	10
UserTerminal Touch(Pro).....	11
Voice of customer	14
Microgate Witty SEM	17
Microgate optogait®	20
Zebris FDM-T	21
robowalk®	24
airwalk® ap unweighting system	26
User application manual	31
torqualizer® - reliable ergometers made in Germany	32
locomotion system	36
Perturbation - individual applications	38
VAST.Rehab - functional training with virtual reality	43
Case studies	48
Recommended treadmill configurations for therapy	50
Technical device specifications	64
h/p/cosmos product list 2025	76





UserTerminal
180°
rotatable

mercury® med with standard handrails

RELIABLE TREADMILLS MADE IN GERMANY

German Engineering since 1988



mercury® med with optional paediatric handrails [cos102400-01va01]



mercury® med with optional long handrails [cos102918-01]
and safety arch fall prevention [cos10079-01va01]

Benefit from our experience since 1988 in manufacturing and servicing standard and customized treadmill solutions around the globe.

h/p/cosmos standard

h/p/cosmos has been developing and manufacturing treadmills since 1988 in Germany for various fields including fitness, competitive sports, sports medicine, orthopedic and neurological rehabilitation, sport science, biomechanics, uniformed services, performance diagnostics, cardiopulmonary diagnostics and rehabilitation. This experience, maximum standards in quality and advanced technology are the foundation of our business and reflected in every treadmill produced.

The outstanding level of h/p/cosmos products and service as well as attractive prices form the h/p/cosmos standard.

Stable and low-maintenance

With their stable frame, the treadmills are almost indestructible, very low-maintenance and offer both runner or patient a pleasant running feeling thanks to their state-of-the-art design. They also stand out due to their smooth running, their versatile functions, their powerful drive system and their timeless and user friendly design.

Medical device (class IIb) and sports treadmills

Our treadmills are available as risk class IIb medical treadmills as well as sports treadmills. As a medical device, they are particularly suitable for the use in the fields of cardiology, neurology, cardiological rehabilitation and physiotherapy. The interface via coscom® v4 of the h/p/cosmos treadmill and ergometer series enables the connection to ECG, ergospirometry systems, blood pressure monitors and software programs.

Customer-specific configuration for individual solutions

Treadmills off the peg can be many, at h/p/cosmos you can also get your individually assembled treadmill solution with a large selection of options and accessories. Too little budget for the desired configuration? Changed demands on the treadmill system due to new business areas or new areas of application? No problem, most options and accessories can also be retrofitted at a later date. With h/p/cosmos you are always on the right track, because you cannot make the wrong decision due to the flexible and modular design.



FLEXIBLE HANDRAIL CONCEPT

Some of our best selling handrail configurations:



pluto® med
with standard handrails



mercury® med
with optional long handrails [cos102918-01]



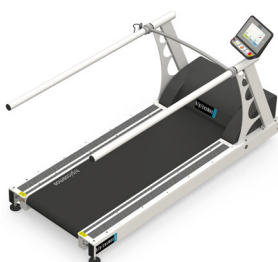
mercury® med
with optional adjustable handrails "comfort" [cos104732_150]



mercury® med
with optional paediatric handrails [cos102400-01va01]



quasar® med
with optional adjustable handrails [cos102550-01]



pulsar® med
with optional long handrails [cos103877]

The renewed h/p/cosmos handrail concept allows quick and flexible adaptations of the treadmill to various demands.

Standard and long handrail

The ingeniously simple plug-in concept makes it a child's play to change the handrails and adapt them to the required application. As standard we deliver all treadmills of the mercury® series with handrails, which cover about half of the running surface length. By quickly loosening two hex head screws, the short handrail can be easily removed and replaced by the therapist or trainer with a long handrail (reaching to the end of the running surface), either on one side or on both sides (for extended safety when stepping onto the running deck).

Adjustable handrail

h/p/cosmos treadmills can also be supplied with height and width adjustable handrails. This variant is ideal if you serve a heterogeneous clientele. They offer the different patient types (from children, to small and tall persons as well as for obese patients) optimal conditions for therapy and/or training. In combination with the optional arm support, you also enable patients to train more safely and without fear. As an additional feature, the optional arm support offers the possibility of a manual unweighting by the patient relieving partial body weight on these stable pads. Additionally the adjustable handrail "comfort" is now available with its pneumatic spring support for even easier handling.

Paediatric handrail

For all the small patients it is necessary to equip the treadmill with a paediatric handrail system. This is no problem, since it can easily be placed in every treadmill instead of a standard handrail. This special addition for children is adjustable in just a few steps for max. flexibility. The handles on the sides can be adjusted with an allen key, the cross bar is adjustable tool free with a turning handle. The minimum height starts at 41cm and ends in 82cm above tread. The extra cross tube in front is also flexible in height and is continuously adjustable. This extra cross tube is an important safety feature for special exercises like sidesteps.



H/P/COSMOS TREADMILL SERIES

From standard to oversize

With more than 35 years of experience in the development, manufacturing and service of sports and medical treadmills, h/p/cosmos is globally renown as a leading supplier of safe, reliable and flexible systems. Over the years, the portfolio of treadmills, systems and peripheral solutions has diversified according to market requirements. Each treadmill series has been tailored to the specific needs of a branch. Feedback and suggestions for improvement from professionals constantly drive our development. With a wide range of accessories, retro-fit kits and value-adding solutions, the systems can be adjusted to varying demands at any point during the product life cycle.

The pluto® series forms the entry level and very basis of our portfolio. With a running deck size of 150 cm x 50 cm, a centrally located UserTerminal with touchscreen, speeds up to 22 km/h and an elevation of 25% as well as 1 year limited warranty, the pluto® series is the cost-efficient entry to the h/p/cosmos ecosystem.

The mercury® series shares the technical platform of the pluto® series, but allows a free perspective to the subject on the treadmill due to the UserTerminal position on the right handrail, especially valuable e.g. for therapy with mirrors. In addition the UserTerminal can be rotated 180°, allowing an improved visibility, access and control for the therapist all around the treadmill. The mercury® series comes with a 5mm thick running belt, an increased maximum user weight of 300 kg and a limited warranty of 2 years.

With a running deck size of 170 cm x 65 cm (quasar®) or 190 cm x 65 cm (pulsar®), the treadmills of the quasar® and pulsar® series provide enough space for special therapeutics (e.g. adipositas) as well as athletic and performance applications. Top speeds of 30 km/h or even 45 km/h (pulsar® 3p) established the series as gold standard for performance diagnostics in sports performance and athletic training labs! For high performance applications including rolling applications (e.g. rollerski, bike, handbike, wheelchair, ...), oversized treadmills with ultrawide and long running surfaces of 200 x 75 cm (venus®) or up to 300 x 125cm (saturn®) are available. These systems are reliable, safe and extremely powerful and versatile! Special features like wheelchair stabilizers, front rollers and automatic lubrication systems emphasise our strive for performance and safety. With maximum inclinations of (+/-) 27% and up to 80 km/h, the systems are the product of choice when it comes to benchmark the best of the best.

The ultimate spearhead in the h/p/cosmos portfolio is the oversize and high performance treadmill saturn® 450/300 rs or as we call it: "the beast". This treadmill has specifically been designed to meet the requirements of classic rollski applications as well as skating. With its massive 10 mm thick belt, the treadmill allows the utilisation of spiked ski poles to reproduce utmost real training on the treadmill. With available options like automatic speedcontrol and the adjustable safety arch for up to three persons, the system is the platform of choice in leading olympic training facilities around the globe!



pluto® med with standard handrails



mercury® med with standard handrails



quasar® med with standard handrails



pulsar® med with standard handrails



saturn® with standard handrails



SERVICE, LIFETIME, SPARE PARTS

h/p/cosmos systems at their best:

Basic to advanced needs - always adaptable

As a default, all h/p/cosmos treadmills come with a standard handrail, covering approximately 1/3 of the running surface. The handrail as well as various other options such as safety systems (safety arch or airwalk® ap unweighting system with emergency stop) can be retrofitted to the existing system. The system can be expanded as required, even if the initial system is "only" a treadmill.

Always reliable and optionally medically certified

The h/p/cosmos treadmills have been manufactured and continuously developed since 1988. This means that almost 4 decades of know-how have gone into the current series of treadmills. Whether the challenge is 20+ years of therapeutic use or a 24-hour non-stop world record, our treadmills remain reliable with regular maintenance. All models are available as medically certified version for most countries, according to MDR and certified by TÜV SÜD Germany.

Service

The h/p/cosmos service centre is one of the core departments at the h/p/cosmos headquarters in Traunstein. The specially trained experts guarantee fast response times, spare parts availability and shipping as well as the latest knowledge base - everything from one single source. With every h/p/cosmos treadmill you made a choice for long lasting (medical) equipment. To keep it that way, a regular maintenance and service check are recommended. This includes electric measurements and mechanic checks as well as maintenance works like filling up the special oil between the belt and the deck. Further information is always available in the operating instructions.

Annual service routines are recommended - ask our international service partners in your territory for a service subscription at a favourable price. Service technicians, certified via special training and subsequent tests at h/p/cosmos are available worldwide.

Retrofitting

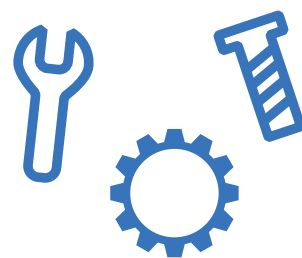
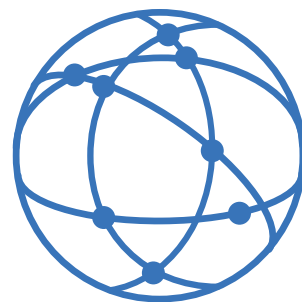
If the need for a different request for your therapy emerges, it can easily be met with our retrofitting possibilities as most treadmills can be retrofitted to a certain point. Frequently sold retrofitting solutions include e.g. our safety arch, an airwalk® ap unweighting system or a different set of handrails.

Lifetime of h/p/cosmos treadmills

The lifetime of our medical treadmills is 10 years. Based on regular maintenance and service, this lifetime can easily be met. To further extend the longevity of your treadmill, you can extend it up to a total of 20 years with our „Extension of life time“ upgrade package. If ordered, a service technician will need to exchange some components of the treadmill to assure compliance and safety for a total lifetime span of 20 years.

Spare parts and availability

All spare parts for all models are available for a minimum period of ten years after your purchase. From the smallest screw to oversized treadmill belts and of course electrotechnical components. Spare parts, consumables and supplies like lubrication oil or extra unweighting vests can be purchased in the online shop.



All our spare parts available in the onlineshop [here](#)

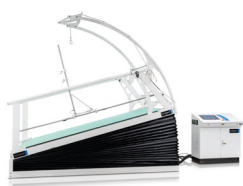


WHY OUR SYSTEMS ARE THE RIGHT CHOICE



The right solutions for applications in training, testing, research and rehabilitation

h/p/cosmos has the worldwide biggest portfolio by far of standard treadmill and ergometer systems with options, supplies and also custom-made solutions for fitness, sports, athletics, biomechanics, medicine, therapy and science. Full scale of various treadmill running deck sizes from standard 150/50 cm up to oversize 450/300 cm. Speed from standard 0 ... 22 km/h up to high speed 80 km/h for cycling on treadmills. Elevation from 0 ... 25% up to -35 ... +35% for special applications. From normal running deck to instrumented versions with 3 component force (F_z, F_x, F_y), torque (M_z, M_x, M_y) & pressure distribution for biomechanics applications.



Highest performance for excellent accuracy and dynamics in acceleration and deceleration

Depending on the size h/p/cosmos has extremely powerful, maintenance free and high-capacity drive motors of 2.2, 3.7, 11.0 or even 30.0 kW. This is necessary for propelling athletes in sprint applications or performance diagnostics, for speeding up very thick, heavy and extremely durable running belts and also for perturbation applications with programmable extreme accelerations. The drive motor of the saturn® model with 11 kW for example and the heavy rollers provide exceptional dynamics, precision and smoothness. The deviation of the speed is on average 0.148 % (average deviation of 0.044 km/h, measured both with no load and under load with runners of 78 and 94 kg).



How much is 1%? How important is 1%? How important is data validity?

Often fractions of seconds decide between winning and losing. The scores of the Olympic Games and other competitions show this fact clearly. Accurate time measurement, strong drive systems and high accuracies for treadmills and other measuring instruments are prerequisites and an integral part of a successful training control - no matter if you are a competitive or a recreational athlete. For sport-specific training methods and athletic preparation tests (e.g. shuttle run, T-test, sprints, performance diagnostics, etc.) measurements are very important also to see the impact of changing training plans, fitness and performance levels as well as change in motion and running styles. Comparing with other equipment: Same size and speed does not mean same performance! Only precise and valid data are worth it to integrate into the training routine and training planning.



Flexible handrail and design concept with options, accessories and upgrade options

Different applications require different designs and safety options. A safety arch with harness and chest belt system including quick stop and fall prevention system gives necessary confidence to athletes, trainers, exercise physiologists and also to patients, therapists and doctors to improve performance during exercise and tests.

With most h/p/cosmos treadmill models the operator is able to change handrail designs depending on applications or upgrade to different versions and features. Also adjustable handrails (width and height) or arm support for gait training are available. The patented robowalk® expander, which can be even retrofitted / upgraded at a later stage, provides necessary concentric, eccentric and lateral forces for stimulation, perturbation, support or walking and running style correction. Extra wide footboards and specially designed short sprint handrails allow ergonomic and safe operation during jump-on and jump off in sprint and hyper-speed trainings and tests. For 3D motion capture systems and video analysis detachable handrails are important.





The airwalk® ap unweighting system

The airwalk® ap unweighting system developed and manufactured by h/p/cosmos is not only for rehabilitation at low speed with 360° rotations but also for balance, perturbation and overspeed or co-ordination training. Wheelchair ramps or wheelchair stabilizers allow safe and ergonomic mounting, dismounting or even operation with sports wheelchairs on oversize treadmills for training and/or performance diagnostics. Various unweighting vests, harnesses, shorts or chest belts in different sizes and for different applications are available.

Different running belts for different applications

Running belts for running may have a structured surface while running belts for cycling must have low rolling resistance. For use with ski-poles again different running belts with very thick structure of up to 10 mm are recommended to have non-slip characteristics even when they are getting wet and even during uphill skating/climbing and double-pole push tests to utilize maximum performance also with arms and upper body. It is all about grip! h/p/cosmos has the suitable belt for your specific application.

Connectivity, interface, compatibility and integration with other systems

Connectivity of treadmills and ergometers with host ECG, VO2max, CPET, motion capture systems, EMG, IMUs, ergometry and fitness software and other systems are crucial for success, data validity and cybersecurity. h/p/cosmos provides excellent system integration with most reputable manufacturers via coscom® v4 interface through RS232, LAN / RJ45, USB, HDMI, optionally Bluetooth®, NFC/RFID, WiFi, FTMS for great connectivity with ECG stress test and VO2 max. CPET Cardiopulmonary Exercise Testing equipment and fitness testing equipment. Even coscom_v4.dll is free for download: www.coscom.org

Software features, multi-tasking, cognitive skills, perturbation, Stroop-Test

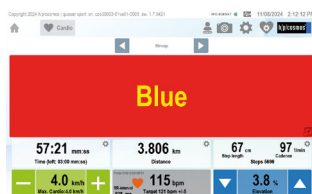
The new user terminal software features optional Stroop Test, dual tasking, cognitive skills, country flags, capitals, "word salad" and mathematic tasks in various levels and has included test profiles / protocols such as Bruce, modified Bruce, Graded Test, Naughton, Cooper, Balke, Super Balke, Ellestad A, Ellestad B, Gardner, UKK 2 km WalkTest, Conconi, Ramp, Fitkids, Chester Treadmill Walk, VO2/10k, VO2/11k, VO2/12k, VO2/14k, various interval tests incl. progressive interval, various pyramid tests, Hochfeln mountain protocol, etc.

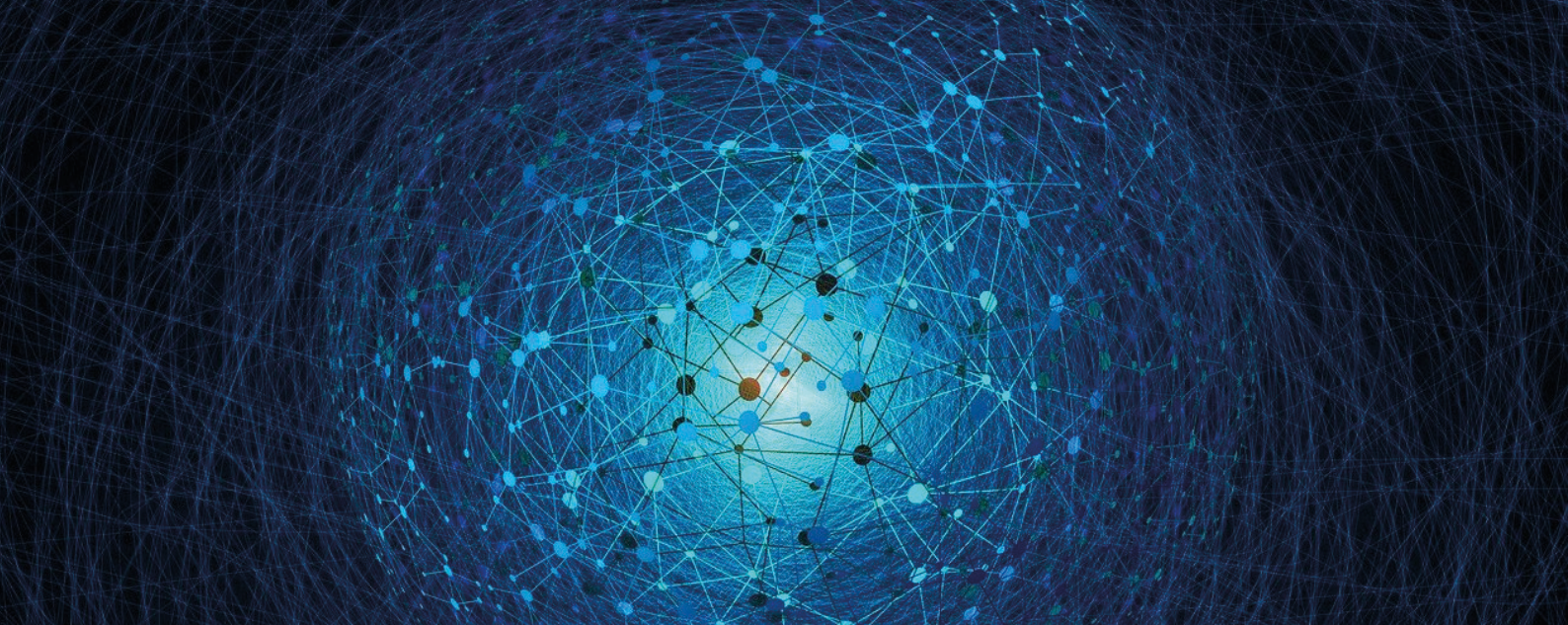
Durability, Reliability, Economic Lifetime, Warranty, ROI Return of Investment

h/p/cosmos products convince with their lifetime and are built to last. Most other devices have an economic lifetime of 5 to 7 years based on the manufacturer's manuals. h/p/cosmos treadmills have an economic lifetime of 10 years plus another 10 years (20 years in total) after some preventive component replacements after 10 years of age. Many h/p/cosmos treadmills are even in use for 30 years. Furthermore, h/p/cosmos offers 20 years of warranty for the main drive motor and frame for almost all treadmill models. h/p/cosmos treadmills are outstanding in reliability, durability and return of investment! Almost all spare parts are available for decades.

Regulatory compliance for the safety and security of users and buyers

Already in the year 1990 the first h/p/cosmos treadmill has been tested in the laboratory of the TÜV SÜD Product Service in Munich. h/p/cosmos has been certified to ISO 9001 since 1998 followed by the EN ISO 13485 certification that represents the requirements for a comprehensive quality management system for medical devices. In Nov. 2022 h/p/cosmos got the MDR certification (EU) 2017/745 awarded.





H/P/COSMOS CONNECTIVITY

Connectivity - coscom® v4 interface communication protocol

The coscom® interface protocol has its origin in the year 1992 and has been developed by h/p/cosmos for safe, reliable and advanced communication, control and links between different h/p/cosmos ergometers like running machines, treadmills, bicycle ergometers, ladder ergometers, as well as control and monitoring equipment like

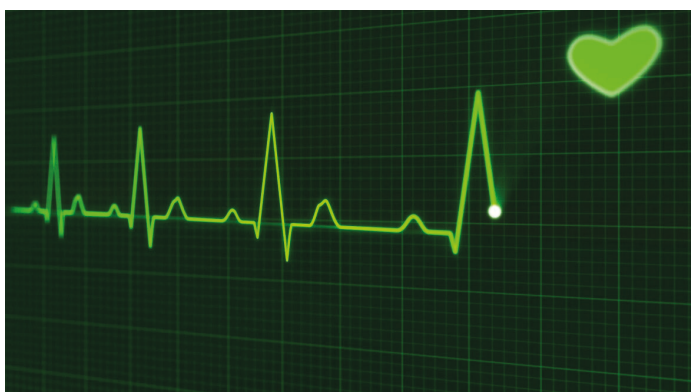
- PC
- EMG
- ECG
- ergometry
- cardiopulmonary stress test systems
- biomechanics and motion analysis systems
- fitness and sports medicine as well as analyzing software, etc



Extended connectivity

Especially in sports medicine, biomechanics and research there are often many different systems connected to a treadmill: ECG, spirometry, blood pressure monitor, EMG and also remote terminals to control the treadmill (e.g. in climate chambers). To cope with this demand, all h/p/cosmos treadmills rely on the coscom® protocol.

With the current UserTerminal Touch (Pro), Bluetooth® connections allow a direct communication with common heart rate sensors and smart devices. Implemented protocols (e.g. FTMS that allows a unilateral transfer of treadmill parameters such as speed, inclination, cadence etc.) grant connection to virtual realities (e.g. VAST.Rehab, Kinomap or ZWIFT) and training applications, pushing motivation for athletes as well as for patients.





USER TERMINAL TOUCH (PRO) SPECIFICATIONS

Display

- High Sensitivity Touch display with TFT-LCD technology, 25,9 cm / 10,1" (1280x800px)
- Easily readable even with visual limitations
- Intuitive use with simple navigation

Usage

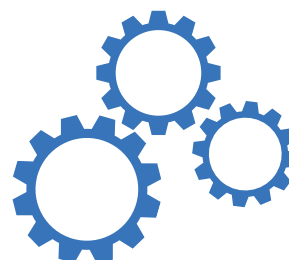
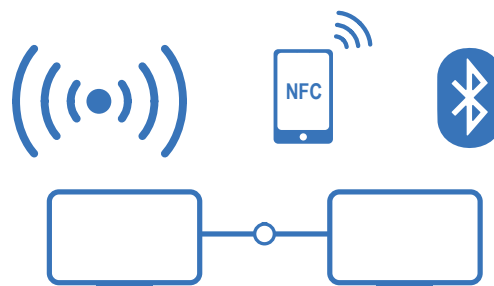
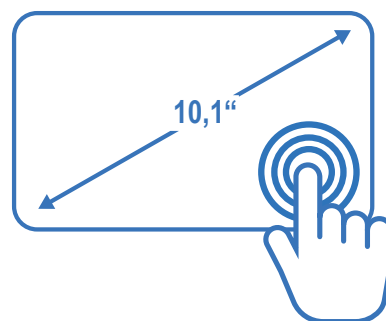
- Everything can be controlled and adjusted with the touch display
- Haptic buttons (Start, Stop, Pause, speed and inclination) provide additional safety in sweaty conditions or when wearing medical gloves

Connections / Interfaces

- RS232
- USB 2.0/3.0
- LAN
- optional NFC, RFID and Bluetooth®

System

- Windows 10 lightweight
- Computing unit integrated
- Fanless (silent)
- operating temperatures: min. 5° C ... max. +40° C
- storing temperature: min. -20° C ... max. +55° C
- humidity: min. 10 ... max. 95 %





USERTERMINAL TOUCH (PRO) IN PRACTICE

The UserTerminal Touch (Pro) in practice.

The central part of every treadmill is the UserTerminal. Apart from h/p/cosmos It devices, that come without UserTerminals, most h/p/cosmos treadmills of the current product cycle already rely on the UserTerminal Touch or the even more powerful UserTerminal Touch Pro. Focussing on a user-friendly, safe and stable interface, the 10.1" UserTerminal Touch has been a milestone in the history of h/p/cosmos!



The combination of a 10.1" TouchScreen and a hardware keyboard allow an anytime secure handling of the treadmill - especially in situations of urgency.



The ergonomic position and setup of the UserTerminal Touch (Pro) enables therapists and trainers to customize the training or even profile with little time expenditure.



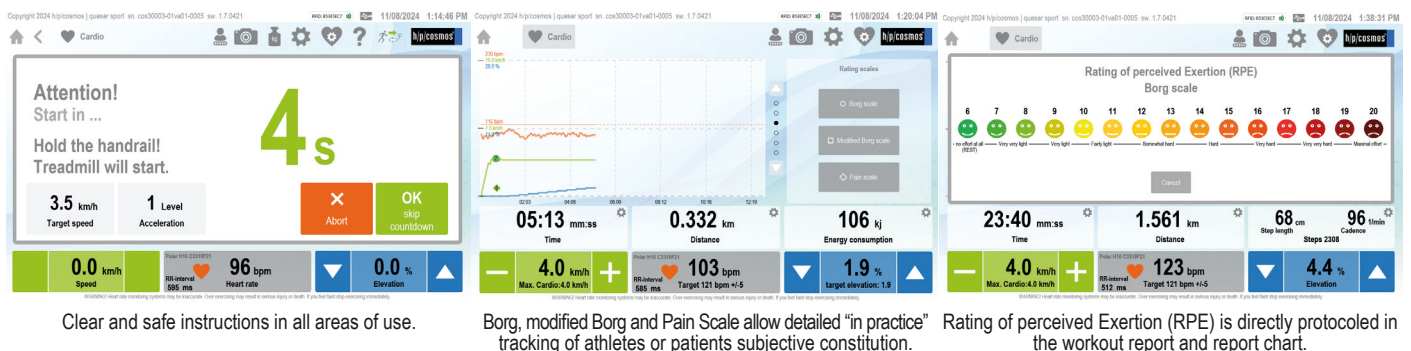
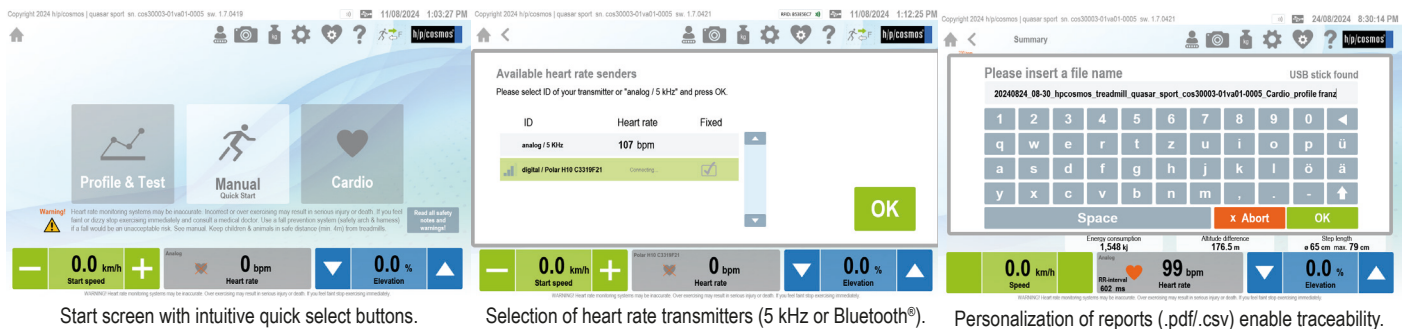
Gait stability training with optional perturbation module and safety arch fall prevention system with an elderly patient with Parkinson's disease.



USERTERMINAL TOUCH (PRO)

The UserTerminal Touch (Pro) is the powerful heart of the latest h/p/cosmos treadmill.

With the UserTerminal Touch and Touch Pro, innovative features like perturbation and dual tasking could be released and can be intuitively controlled with very short training. The 10,1" Touch Screen provides a good overview without blocking angles of view for therapists while the additional hardware keyboard guarantees perfect handling also with medical gloves or sweaty conditions.





VOICE OF CUSTOMER



Sabine & Hans Lamprecht | HSH Lamprecht GbR, 73230 Kirchheim/Teck, Germany

Back in 1987, Sabine and Hans Lamprecht opened their first physiotherapy in Kirchheim/Teck close to Stuttgart. With more than 30 years of experience, they made their name in the German speaking territories and beyond for their evidence driven and practically oriented therapy approaches. Their science based but practical approach is the foundation for their daily work as therapists as well as their activities as authors of various reference books and as lecturer at European universities.

Already in the second generation, 2019 marked a milestone with the opening of the new and extended therapy facility with additional floor space and updated equipment. The team of over 40 passionate specialists supports patients in the fields of physiotherapy, occupational and speech therapy.

A free webinar series with Sabine Lamprecht has been recorded in her therapy facility on gait training and therapy and is available here:



When working with neurologic and orthopaedic patients, reliable and safe technology is key – both for the patient and the therapist. For many years, our team relies on h/p/cosmos when it comes to treadmills and ergometers.

Within the past 5 years, we were able to update, retrofit and extend our equipment. We are now able to adapt our equipment to the very individual needs of our customers – no matter if tall or small which is decisive for therapy success! One highlight and eye-catcher in our therapy is the unweighting system airwalk® ap with the locomotion® treadmill as well as robowalk® expanders for active gait correction and training. The treadmill is an invaluable tool for neurologic therapy and enables us to provide early and safe return to therapy. In 2020, we were able to retrofit the existing system with a zebris pressure distribution platform and the visual cueing system, further extending the possibilities (e.g. for Parkinson's disease) and applications.

The h/p/cosmos pluto® med is daily used for gait training and therapy in our facility and the perfect companion to the locomotion®. Its smooth start and movement at very low speed – even with overweight patients – makes patients feel secure! Long handrails in combination with the adjustable arm supports allow a safe access onto the treadmill and a stabilisation and even light manual unweighting of the patient during the training.



Sabine Lamprecht

M.Sc. Neurorehabilitation
Founder & Owner
HSH Lamprecht GbR



VOICE OF CUSTOMER



Corox by Hans Friedl - Institute for Rehabilitation, 83533 Edling, Germany

Corox by Hans Friedl was founded in 1996 and has always followed the guiding principle „Feel your senses“. Our highly qualified and committed team of physiotherapists, sports scientists and office staff are dedicated to the well-being of our patients. Treatment methods that are precisely tailored to the needs of the individual and based on the latest scientific findings are the hallmark of our therapeutic activities.

With over 1,600 square metres of treatment area and more than 5,000 square metres of outdoor space, we have all the facilities we need. Especially the rehabilitation of athletes is our strength.

Of course, we want to combine our expertise with the best technical possibilities. This is the reason why we have been relying on h/p/cosmos products for many years. For diagnostics in our movement laboratory we have chosen the h/p/cosmos treadmill with integrated zebris pressure distribution. The treadmill is a very valuable component of our testing for automated multi parametric gait analyses and optimises our therapy results in the long term through the insights it provides.

In our physiotherapy area, we offer active and passive therapy measures. Our therapists always do their best to achieve a treatment that is optimally tailored to the patient.

With our pluto® and mercury® medical treadmills in combination with zebris and the Witty SEM system by Microgate, we enable patients in gait and physiotherapy to train and improve their reactivity, agility and motor-cognitive skills.

We can start at a very slow treadmill speed and therefore have the time to analyse gait patterns and are able to even show the patients own walking pattern and therefore can adjust it in small steps.

Under laboratory conditions in our Corox Athletics Center with running track, jump and speed measurements, mobility tests and maximum strength measurements, we get to the bottom of your movements.

In the field of sports, we try to compensate for disturbed physical functions, regenerate, prevent secondary damage and promote health-oriented behaviour by means of various movement therapy measures.



Hans Friedl

Founder & Owner

COROX by Hans Friedl - Therapy Centre

VOICE OF CUSTOMER



Zentrum Traunstein, 83278 Traunstein, Germany

At Zentrikum, people take centre stage. As an interdisciplinary neurological practice, we combine physiotherapy, occupational therapy and speech therapy in one location in order to offer patients holistic and individually tailored treatment.

Our goal is to improve the quality of life of our patients and to promote their independence in everyday life. In both locations of the centre (Traunstein and Altötting), 18 experienced therapists from various disciplines work closely together to ensure comprehensive care.

Thanks to interdisciplinary cooperation, we are able to treat complex neurological diseases from different perspectives and develop holistic treatment concepts.

The number of neurological diseases is increasing as the population ages, leading to a greater demand for neurological therapy. However, there is often a lack of specialized outpatient care for neurological patients. To address this gap, the "Zentrikum" offers a comprehensive range of interdisciplinary therapies based on the International Classification of Functioning, Disability and Health (ICF). The programme is focused on physiotherapy, speech therapy, and occupational therapy, with close collaboration between these areas to create optimal treatment plans.

The goal is to support patients in their daily activities, maintain or improve autonomy, and prevent secondary damage. The centre also offers innovative therapy and analysis technology, such as gait analysis and therapy-supported brain wave measurement. The use of standardized language in documentation and therapy reports improves patient compliance and justifies the economic necessity of prescriptions. Overall, the "Zentrikum" aims to provide specialized and effective neurological care at one location.



Gernot Pichler
Management Zentrikum

Witty SEM System - Microgate

The Witty SEM System from Microgate is a training tool that has been proven to be highly effective in therapeutic work with neurological patients. It offers a wide range of training options aimed at promoting cognitive and motor functions, making it particularly useful in neurorehabilitation.

Therapeutic goals include training cognitive skills such as memory, attention, and concentration, as well as promoting peripheral vision and stimulus perception. Training is often combined with exercises to strengthen muscles and improve mobility, supporting motor skills, trunk stability, and balance. Eye-hand coordination is also targeted, which is crucial for everyday tasks such as grasping objects or operating devices. Overall, the Witty SEM System helps to improve physical and cognitive resilience.

Training options and therapeutic goals

One of the key advantages of the Witty SEM system is its versatility and customisability. It can be used in combination with other therapeutic devices and aids, such as standing tables, treadmills, unstable supports, weights, or everyday objects. This allows for a tailored approach that can be adapted to the specific abilities and needs of each patient. This flexibility is especially important in the rehabilitation of neurological patients, as the degree of impairment can vary widely.

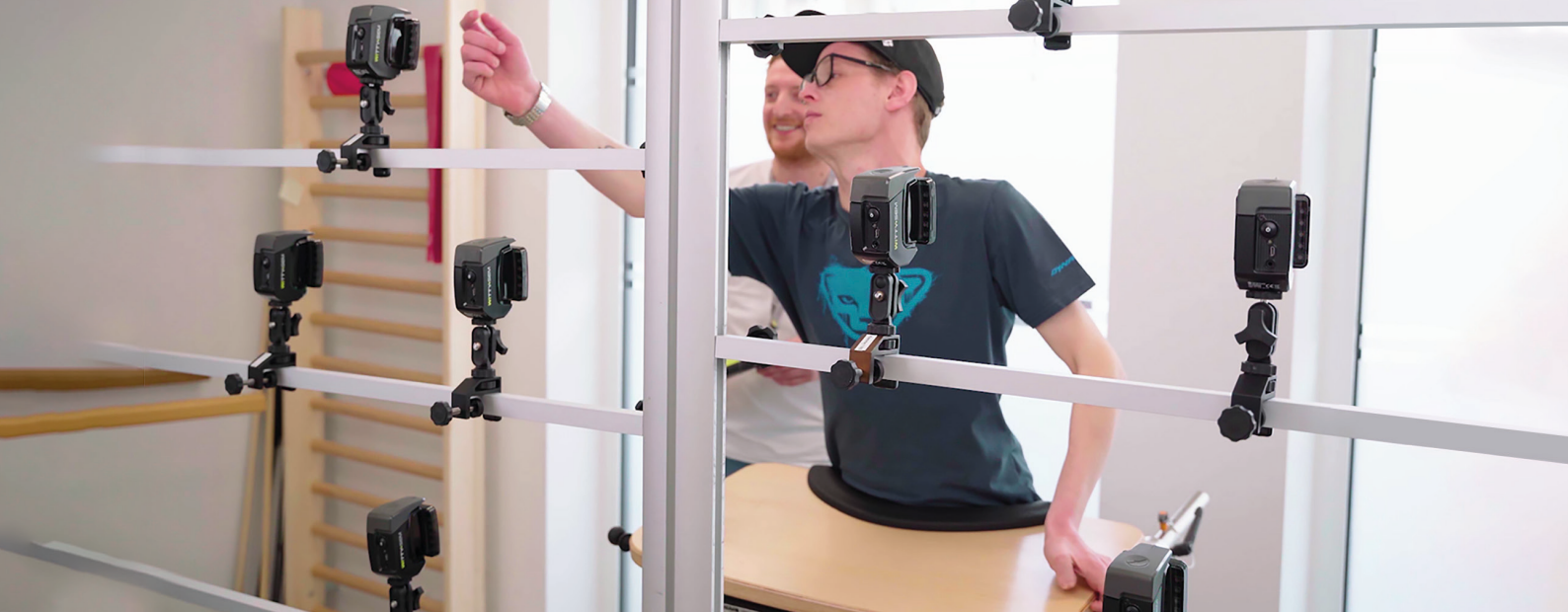
Versatility and customisation

The Witty SEM system has proven to be particularly valuable in the rehabilitation of patients with Parkinson's disease, stroke, multiple sclerosis, or traumatic brain injury. It promotes neuroplasticity, which is crucial for motor learning and the restoration of neuronal connections. By challenging patients with both cognitive and motor tasks simultaneously, the system helps improve functional abilities.

Practical experience

Practical experience at the Traunstein and Altötting centres has shown very positive results. Patients report increased motivation, supported by the playful and interactive design of the training programme. The flexibility of the exercises leads to rapid expansion of their abilities and a noticeable improvement in their quality of life. The system's external focus, concentrating on external stimuli rather than the movement itself, has optimised movement sequences and cognitive processing. The user-friendliness and ease of use of the system also make the therapists' work more comfortable, as they can easily tailor the training to individual patients' needs and goals.

The Witty SEM System is an extremely flexible and effective training device in the rehabilitation of neurological patients. By combining cognitive and motor exercises that can be customised, it offers an excellent opportunity to promote neuroplasticity and support motor learning. Its use in practice has shown that patients not only benefit from a significant improvement in their physical abilities, but also from an increase in their motivation and quality of life. The system is therefore a valuable addition to therapeutic work in physiotherapy and occupational therapy.



MICROGATE WITTY SEM



Installation of witty SEM is simple and fast.
The system comes packed in transport cases or a backpack.



Different modes of training allow to train in a playful manner, which motivates patient and athletes.



Instant feedback and clear recordings push motivation.

Microgate Witty SEM

Witty SEM is equipped with a proximity sensor capable of detecting the presence of objects in the immediate vicinity of the indicator (max 40 cm), without direct contact.

This feature can be used for both rehabilitation work and sports training for exercises to stimulate the coordination capacity and reaction times of the patient or athlete.

By creating a system of several Witty SEMs with additional elements such as wobble boards or specific sports equipment (racket, ball etc.), athletes and patients can work on the general aspects that form the basis of good sensormotor skills, improving the economy of each action type: stimulus – cognitive & decisional process – strategic processing – movement.

Study overview Microgate Witty SEM:

Henrieta Horníková: Determinants of Reactive Agility in Tests with Different Demands on Sensory and Motor Components in Handball Players

Nebojša Trajković: The Importance of Reactive Agility Tests in Differentiating Adolescent Soccer Players

Ewelina Kołodziej, Janusz Jaworski, Dariusz Tchórzewski: Possibilities for Applying the Witty Sem System in the Diagnosis, Optimization and Control of Athletic Training



Follow Florian on his journey to recovery from a car accident by using Microgate Witty SEM for therapeutic training of his upper body and coordination.



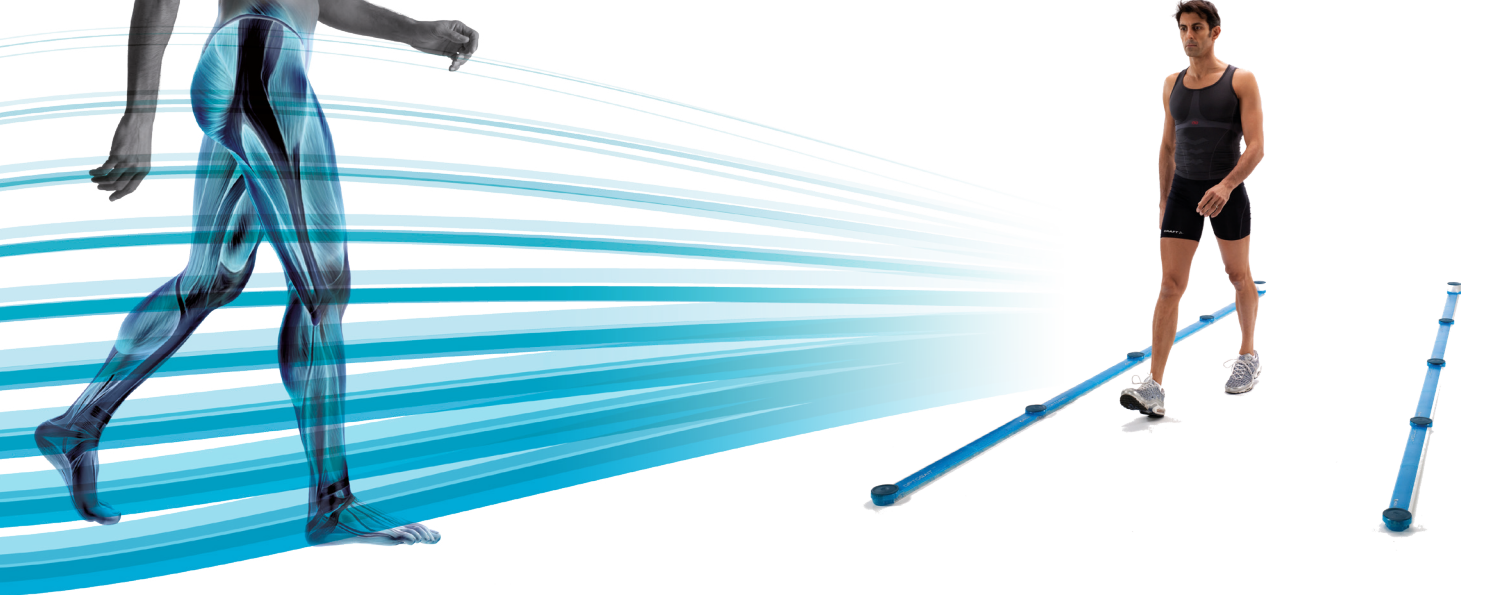
Youtube



Elderly woman during gait and perturbation training on the mercury® treadmill



Elderly woman during mirror therapy on the mercury® treadmill



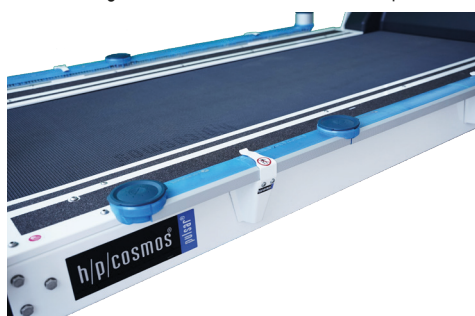
MICROGATE OPTOGAIT®



Live biofeedback allows direct manipulation on gait parameters



optofix® mounts the OptoGait® bars in the ideal position, so jumping off the running belt and onto the footboards is still possible



h/p/cosmos pulsar with magnetic optofix® holder and 1.5m OptoGait®



OptoGait® system can be extended modularly at any time with connecting elements

OptoGait® developed by the Italian company Microgate is a pioneering system for movement analysis and functional assessment of a patient under normal or pathological conditions. The system is equipped with optical sensors that operate at a frequency of 1,000 Hz as well as a resolution of approx. 1 cm and records spatiotemporal parameters during walking, running and other types of movement. With the magnetic optofix® holder system (developed by h/p/cosmos) the OptoGait® bars are magnetically attached to the side of the treadmill frame and placed at an optimal height above the running belt. While the athlete is moving on the treadmill, his steps, with the corresponding parameters, are measured precisely to the thousandth of a second. Relying on the proven and widely available coscom interface, the h/p/cosmos treadmill communicates with the OptoGait® software. If the speed of the treadmill gets adjusted during the test or training, the determined parameters are automatically calculated and displayed correctly. For additional safety, the optional safety arch is available, which prevents a fall and stops the treadmill in such an event.

The OptoGait® system is used in conjunction with a treadmill, with a matching number of bars, based on the size of the treadmill. The software features a biofeedback tool that provides real-time visualization of gait parameters, such as symmetry or asymmetry, stride lengths, and ground contact times. Videosignals can also be fed and synchronised in the software. These visualizations are valuable for athletes and patients undergoing therapy. The software also offers a trigger output, which provides a TTL trigger signal with every first ground contact, that can be utilized in external systems, such as EMG or EEG analysis.

Speedcontrol [cos101000_speed_control], an h/p/cosmos solution for automated speed and inclination control, is also based on the OptoGait® system which can be additionally used for jump and gait analyses directly on the floor, in addition to its use on a treadmill.

Study overview Microgate OptoGait®:

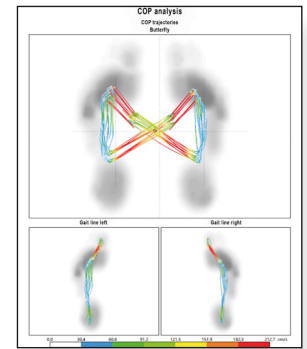
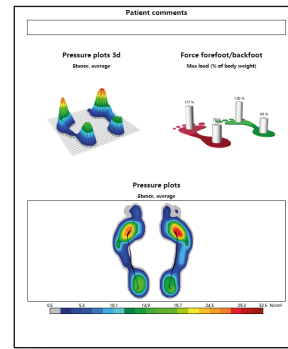
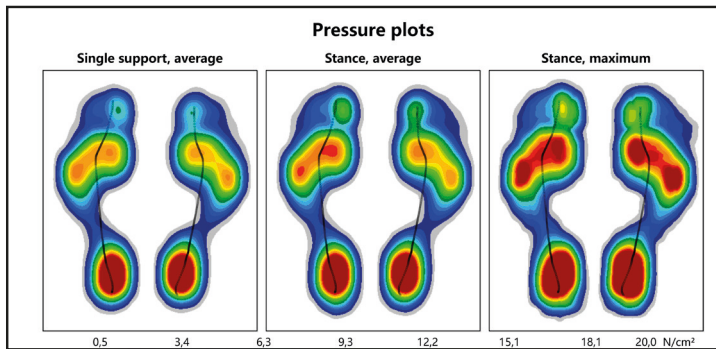
Lienhard, K., Schneider, D., & Maffioletti, N. A. (2013): Validity of the OptoGait photoelectric system for the assessment of spatiotemporal gait parameters. *Medical engineering & physics*, 35(4), 500-504.

Kim, K. H., & Lee, S. M. (2014): Effects of forward & backward walking training with progressive body weight supported on stroke patients' ambulatory ability. *Physical Therapy Rehabilitation Science*, 3(2), 77-85.

Lee, A., Park, J., & Lee, S. (2015): Gait analysis of elderly women after total knee arthroplasty. *Journal of physical therapy science*, 27(3), 591.

Jaen-Carrillo, D., et al. (2020). Test-retest reliability of the OptoGait system for the analysis of spatiotemporal running gait parameters and lower body stiffness in healthy adults. *Proceedings of the institution of mechanical engineers, part p: journal of sports engineering and technology*, 234(2), 154-161.

Weart, A. N., et al. (2020). Agreement Between the OptoGait and Instrumented Treadmill System for the Quantification of Spatiotemporal Treadmill Running Parameters. *Frontiers in Sports and Active Living*, 2, 571385.



ZEBRIS FDM-T



Most h/p/cosmos treadmill series can be equipped or retrofitted with an integrated pressure distribution platform from the German manufacturer zebris®. This upgrade allows versatile applications for rehabilitation, training and analysis. Underneath the belt, a pressure sensor matrix is installed that contains several thousand calibrated, capacitive pressure sensors. The belt movement is compensated, so stable gait and roll-off parameters can be analysed and displayed in a comprehensive software interface as well as in reports - a well proven and established tool amongst therapists.

Gait training and adaptive visual & acoustic cueing

The initial gait analysis is carried out without any measuring preparations to be done on the patient. The measuring process can be observed on the screen in real-time and a report is automatically generated. In order to prepare the gait training using adaptive visual cueing, the parameters from the gait analysis (step length & width and foot rotation) are automatically transferred and can be individually adjusted according to training objectives. The values remain constant or gradually approach the target settings during the course of the training. During training the steps are projected onto the treadmill belt in the shape of the actual footprints, or alternatively as rectangles. Throughout the gait training the patient is instructed to position his or her feet as accurately as possible within the projected area. The gait training including visual stimulation/cueing is also possible when using an unweighting system and thus also allows for patients who are suffering from severe functional limitations to start therapy even at an early stage. The report documents the adherence to the target settings. On that basis, the target parameters can be adjusted to the patient's individual capability. For an optimal training control, two gait analyses are compared, e.g. before and after a training period.

Gait and coordination training using virtual feedback

Physical and cognitive abilities are simultaneously demanded during dual-task-training in the virtual walking environment. The patient solves simple perceptual and memory tasks as well as arithmetic problems while walking and observing his or her footprints. Thus, reaction time and attentiveness are improved while simultaneously supporting automated walking. The various modules allow the training to be individually adapted to each patient.

Study overview Zebris®:

Zhi-Qiang Fan, De-Wu Liu: Impairment characteristics of static balance and plantar load distribution of patients undergoing tibial cortex transverse distraction for diabetic foot ulcers

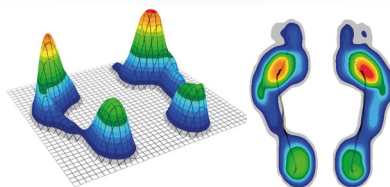
Mariusz Bedla, Paweł Pięta, Daniel Kaczmarek, S. Deniziak

Estimation of Gross Motor Functions in Children with Cerebral Palsy Using Zebris FDM-T Treadmill

Fan Y, Li Z, Han S, Lv Ch, Zhang B: The influence of gait speed on the stability of walking among the elderly

Holl B, Wewerka G, Bartsch H, Malisa MI, Illhardt C, Wewerka G, Pilz G, Wipfler P,

Trinka E, Iglseider B, Kraus J: Extensive Semi-Automated Gait Analysis by Zebris FDM during Treatment of Multiple Sclerosis Associated Gait Disturbances with Fampridine-SR



comprehensive pressure plot visualisation

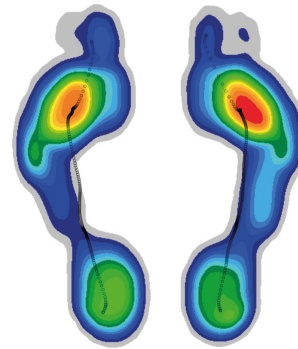
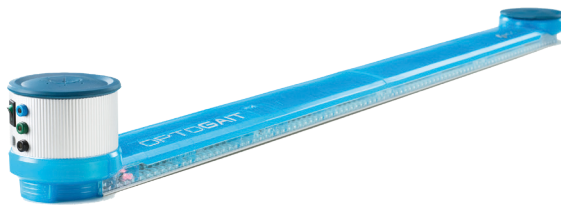


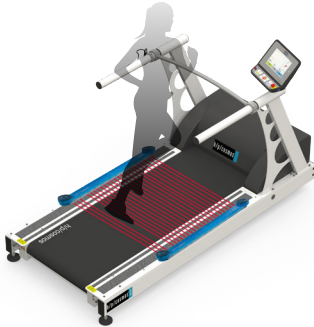




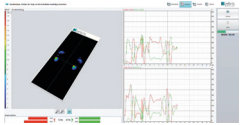
adaptive visual cueing [cos101291-01] with projected steps on the treadmill belt



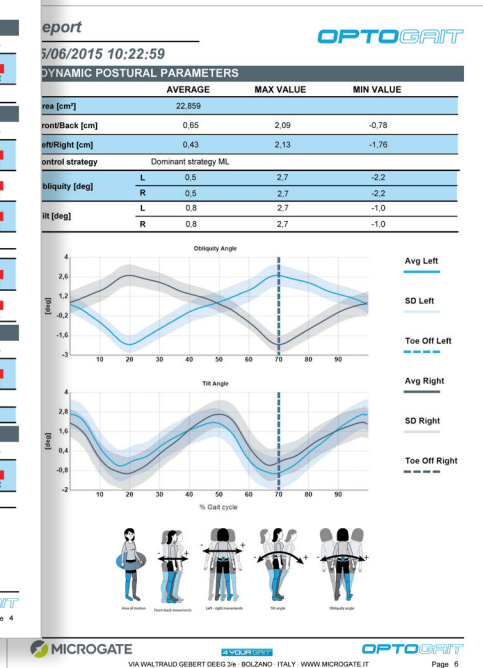
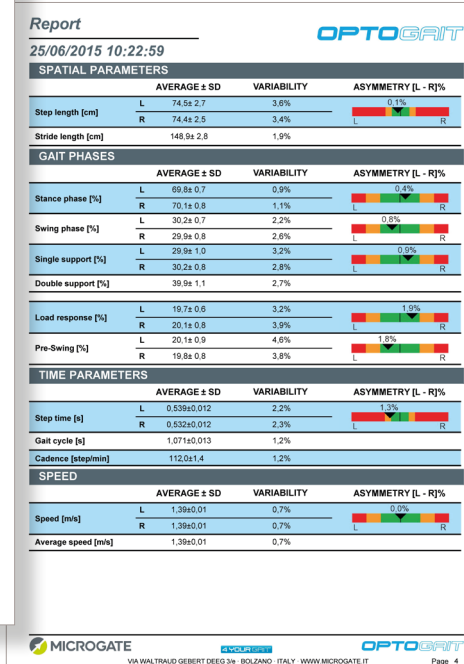
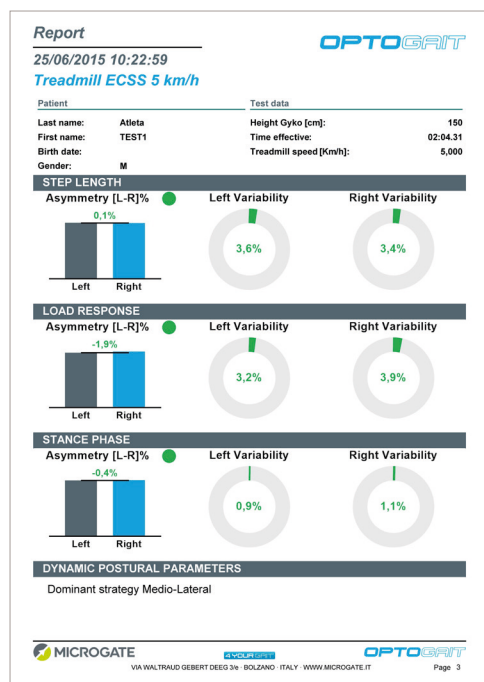
gait and coordination training on a treadmill using virtual feedback [cos101062] and dual-tasking

THE SYSTEMS AT A GLANCE

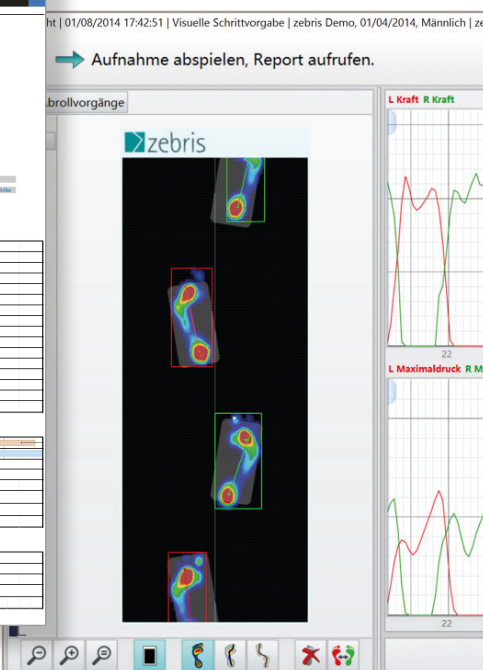
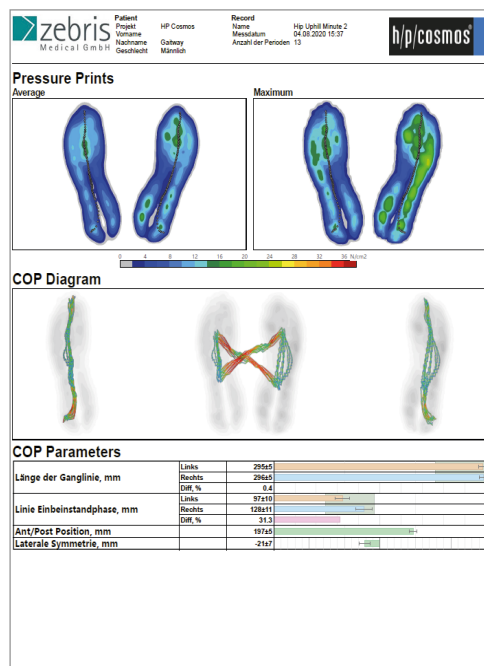


system	Microgate OptoGait®	zebris FDM-T
		
sensors	optometric photocells bars placed on the treadmill footboards or the ground	5,000-12,000 capacitive pressure sensors underneath the running surface (various options available) pressure distribution matrix
parameters	timing-, gait-, speed-, distance-parameters e.g. step length, cadence, contact time, gait phases online biofeedback training possible	vertical GRF (calculated via pressure and area) e.g. step length, step width, foot rotation, gait phases, contact time, forces divided per foot zone training in virtual reality possible
sampling rate	1,000 Hz	100 - 300 Hz (various options available)
sync options	TTL trigger output for external devices (e.g. EMG, EEG)	sync in and sync out for automated recording
video	 YouTube 	 YouTube 
description	<p>The proven technology of OptoGait is the first step into h/p/cosmos biomechanics. A "carpet of light barriers" is established between 2 bars, which measures the steps incl. associated parameters to the thousandth of a second while the athlete or patient is running on the treadmill. The foot breaks through the respective LEDs and the software takes the speed of the treadmill into account. The minimum length of the bars is 1.0 m and can be extended in 0.5 m steps.</p> <p>The software allows a live display of values of symmetry or asymmetry in the left-right comparison, ground contact times and step lengths. These values are not only of great importance in biomechanics, but also in therapeutic use.</p> <p>Trigger signals can be taken from the integrated trigger output for each initial ground contact (as with a foot switch) and connected to external systems such as EMG or EEG. In this way, different systems can be standardised in terms of time.</p> <p>Using optofix®, the bars of the system attach magnetically, securely and in an ideal position to the treadmill frame.</p>	<p>The zebris FDM-T system is based on a sensor matrix of several thousand calibrated capacitive pressure sensors mounted under the running belt of the treadmill. The movement of the running belt is compensated so that stable gait and rolling parameters are recorded in the software.</p> <p>No measurement preparations are necessary on the patient and the measurement process can be observed in real time on the screen. In addition to stance, gait and walking analyses, the force distribution under the feet is also displayed.</p> <p>The comparison of gait and running parameters, the force values of the forefoot and heel, as well as a left-right comparison are quickly gathered and precisely summarised together with the treadmill parameters in a clear report.</p>

EXAMPLE REPORT MICROGATE OPTOGAIT



EXAMPLE REPORT ZEBRIS FDM-T





ROBOWALK®



airwalk® ap [cos30028] with robowalk® front and back allows support or resistance in every direction and unweighting



robowalk® expander back [cos104836] allows for supportive or resistance expander training



fully adjustable robowalk expander front for airwalk® ap [cos104835_aw] with width and height adjustment



fully adjustable robowalk® expander back [cos104836] with rotatable arms

The active gait trainer robowalk®

The gait trainer robowalk® is suitable for providing patients with different degrees of impairment with appropriate support or resistance during gait training. It can support the patient in taking a step while walking or can also be used to strengthen the leg muscles. The full system gait trainer robowalk® consists of eight elastic expander cables. Two pairs of expanders are attached to the front and back ends of the treadmill via longitudinal bars. The expander cables are attached to one or both legs with cuffs, depending on the indication. The colour coding indicates the size of the cuff. Instead of the cuffs, straps can be used which are held with the hands and thus include the arms in the training. The application technique determines the effect the expander has on the gait.

Essentially, two application techniques can be differentiated: „Support mode“, in which the expander cables support the direction of movement of the legs, and „Challenge mode“, in which they provide resistance against the direction of movement. Therapeutic staff are greatly relieved when training the walking ability with impaired patients, as the necessary manual support when walking on normal surfaces is no longer required. Various optional features, such as the body weight support system and adjustable handrails, can further support the therapy. The robowalk® expander can additionally replace the manual guidance of the legs by one or two therapists for severely affected patients.

Benefits of the robowalk® system

- rehabilitation of gait disorders in various orthopaedic, surgical and neurological clinical applications
- applicable for fitness training as well as for orthopaedic and neurological therapy
- space-saving resistance trainer, without heavy weights
- vertically or horizontally adjustable
- the resistance is much more constant and has less progressive force curves over the entire range of motion compared to most other expander systems

Applications in rehabilitation

- joint replacement
- traumatic injuries of the lower extremities
- stroke
- multiple sclerosis
- spinal cord injuries
- brain injuries

Prof. Dr. Cornelia Schlick, physiotherapist and application specialist for gait analysis and therapy wrote the “[User Application Manual](#)” for treadmill therapy in rehabilitation, providing a deeper understanding and knowledge on this system.



Download



Elderly patient on a pluto® med treadmill with airwalk® ap unweighting, robowalk® gait trainer and adjustable arm supports.



AIRWALK® AP UNWEIGHTING SYSTEM



pluto® med with adjustable handrails [cos102550-01],
airwalk® ap unweighting system [cos30028],
robowalk® front [cos104835_aw] and back [cos104836]



pluto® med with adjustable handrails [cos102550-01], airwalk® ap
unweighting system [cos30028], robowalk front [cos104835_aw],
back [cos104836] and reverse belt rotation [cos10181-03]



clearly readable adjustment panel of the airwalk® ap

What makes the airwalk® ap so unique?

The airwalk® ap training-, diagnostic- and rehab-system allows you to start your gait training and functional training very early after an injury. The goal is to bring the athlete's or patient's movements back to a normal rhythm - even if the joints are not yet fully loadable (with normal gravity).

Another important field of application is stability- and fall prevention training. Therefore the airwalk® ap in combination with the robowalk® expander will facilitate a full body workout with focus on core-stabilization, stabilization of the lower extremities and balance. The robowalk® expander allows concentric, eccentric and lateral loads even for adductor and abductor muscles workout in all directions of walk.

Early rehabilitation start through individual weight release up to 80 kg or optional even up to 120 kg.

The unweighting system can easily be adjusted from approx. 0.5 kg weight relief up to 80 kg (standard) or even 120 kg (optional). The single point suspension allows 360° rotations as well as side steps, lunges, etc.

The optional emergency stop makes the system even more safe and stops the treadmill in case of a fall while the patient is caught in a vest. The operation of the airwalk® ap requires a compressor.

Unweighting system airwalk® ap (with optional emergency stop)

In the event of a fall, the patient is caught with the unweighting vest or a safety harness and the treadmill is stopped automatically.

360° rotation is possible.

For the runner it is possible to do side steps, lunges and even backward movements, as well as uphill and downhill running - depending on the treadmills possibilities.

Full access and free sight to the legs, pelvis and upper body of the patient.

This is very helpful, especially in any therapeutic situation or with the use of robowalk® with which you can apply gait guidance, assistance and correction.

Retrofitting for your h/p/cosmos treadmill

The airwalk® ap can be retrofitted for treadmills up to deck size 190 x 65 cm. These treadmills are the series pluto®, mercury®, locomotion®, quasar® and pulsar®.



AIRWALK® AP LT UNWEIGHTING SYSTEM

The airwalk® ap lt - your custom solution to fit any space

To cope with complex room situations, a floor/wall/ceiling mounting of the airwalk® system has been developed. With the flexibility of floor or wall mounting of the base element, a location can always be found within your space.

Tested for patients up to 250kg.

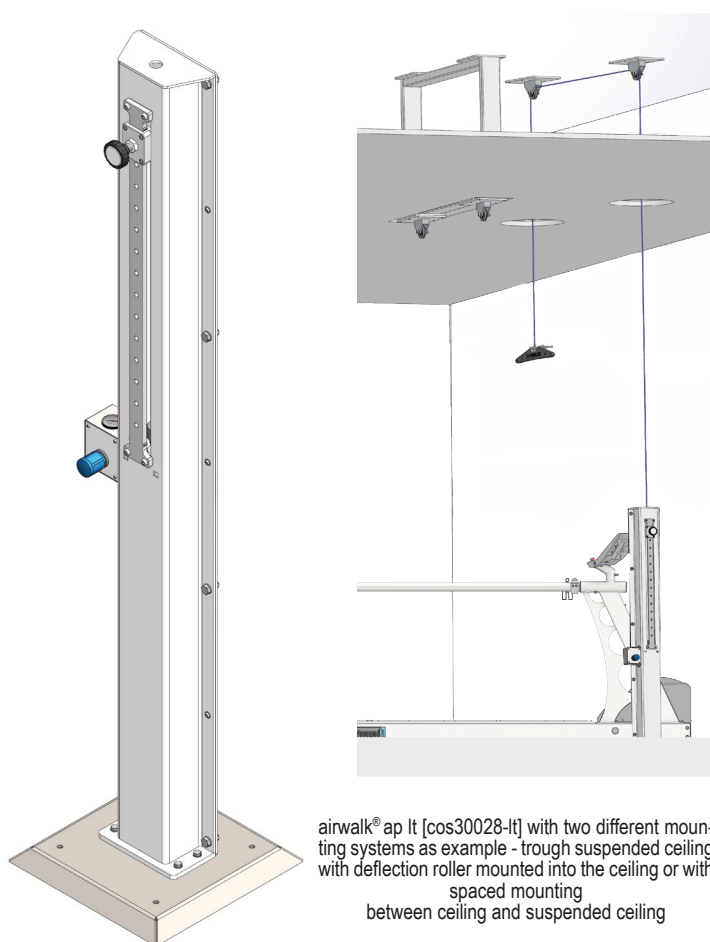
In the event of a fall, the patient is caught with a safety harness and the treadmill is automatically stopped - as known from the airwalk® ap

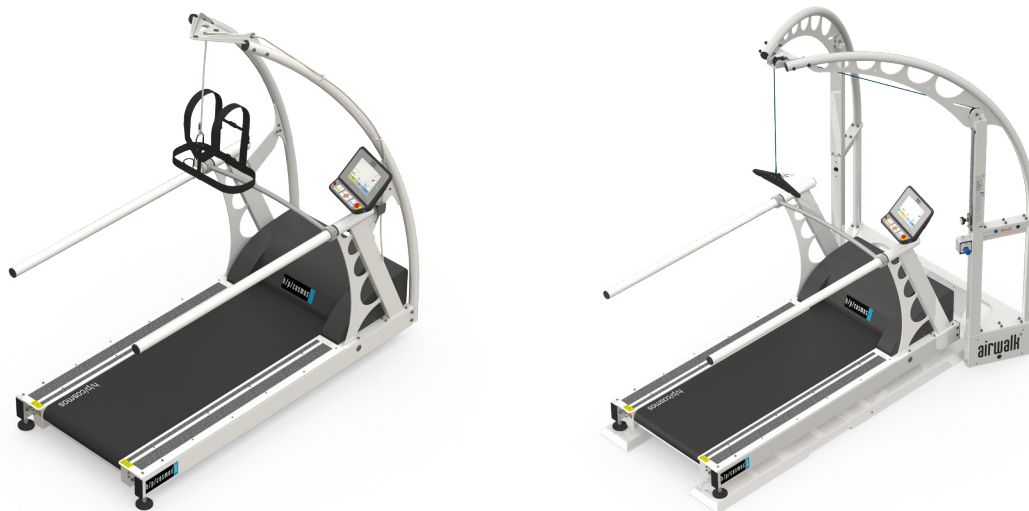
Planning of your custom solution

h/p/cosmos can support you with any technical subject while planning an individual unweighting solution based on your individual location.

Mounting of airwalk® ap lt

The floor/wall/ceiling mounting of the system must be performed by an appropriate specialist contracted by the customer. The final function check has to be performed by an authorized h/p/cosmos technician.



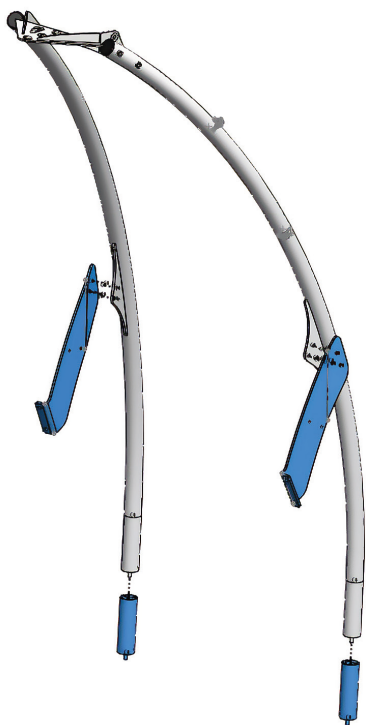


SAFETY ARCH AND AIRWALK® AP

For h/p/cosmos, safety is the first priority. Both the safety arch and the airwalk® ap have been designed to provide utmost security during treadmill training. Depending on your specific needs, we have two solutions for you.

The h/p/cosmos safety arch and airwalk® ap with optional fall stop automatically stop of the running belt in the moment a fall occurs. The chest belt or unweighting vest secures the subject and prevents falling over. The chest belt do not restrict the patient during training.

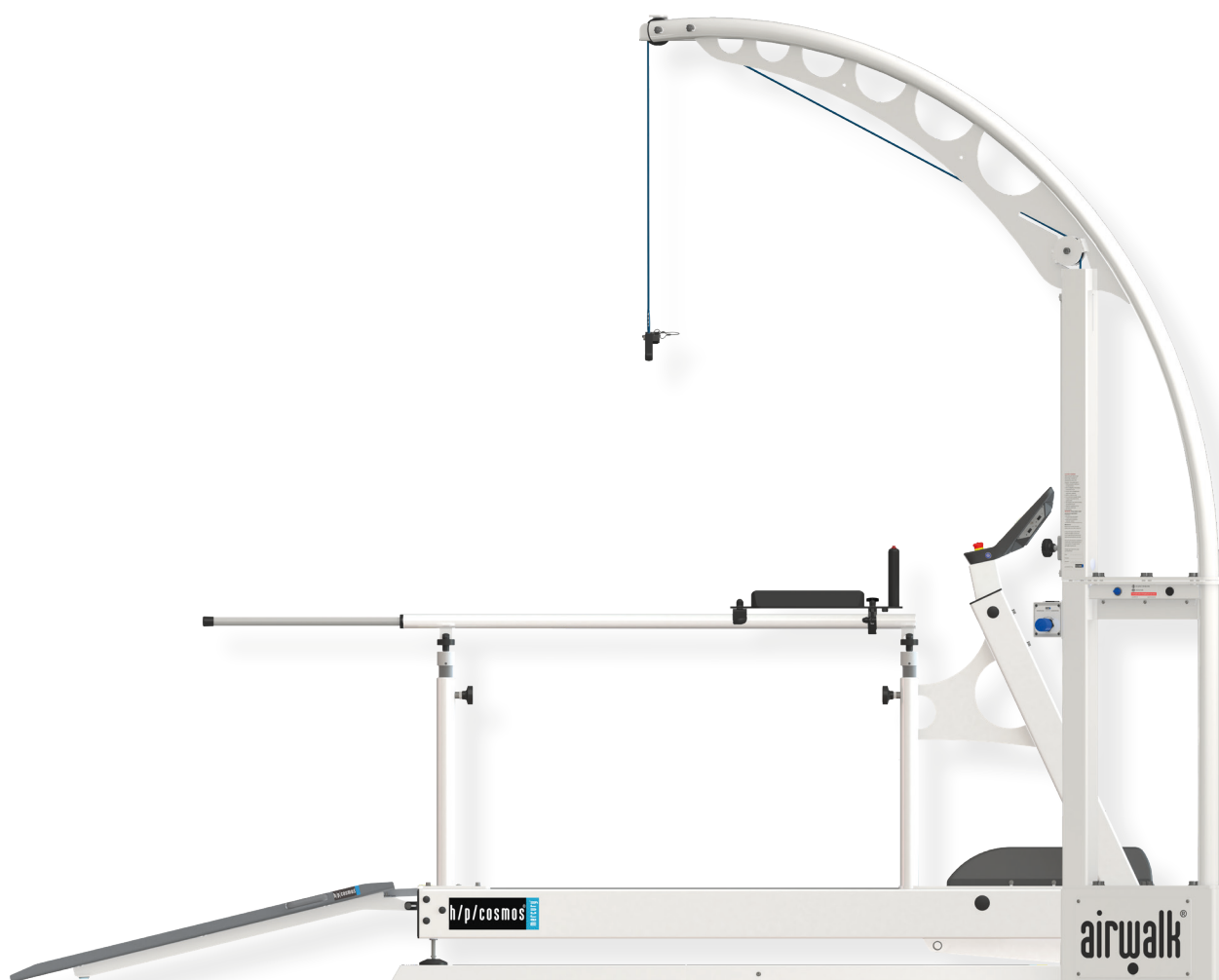
	safety arch	airwalk® ap
retrofit	yes	for treadmills up to pulsar series
mounting	onto the treadmill	external / below
maximum patient weight	up to 300 kg (661lbs)	up to 300 kg (661lbs)
room height minimum:	246 cm (depending on treadmill and elevation)	273 cm (standard height)
additional height upgrade	for patients up to 220cm	individual height versions optional available starting at 250 cm
emergency stop	included	optional
unweighting	-	up to 80 kg (optional up to 120 kg)
available as ceiling mount	Fall prevention system for ceiling mount cos15866-01	Unweighting system for ceiling mount cos30028-It
necessary accessories	-	compressor / compressed air supply
accessories	1x chest belt system size M cos14903-04-M for safety arch harness, 1x carabiner	1 unweighting vest cos10095-vest-M 1 safety harness cos14903-M 2 special carabiners for emergency release; extension slings (2x 10 cm, 2x 18 cm, 2x 45 cm) and carabiners for adaption to body height
optional accessories	chestbelt in further sizes XXS ... XL at extra charge	vest/harness in further sizes XXS ... XL; neoprene shorts size, S, M, L, XL [cos10095-neo] at extra charge



Safety arch extension kit [cos14424-01] for height extension to a maximum user height of 220cm. Also available as retrofit version [cos14424-01ret]



quasar® med with optional long handrails [cos103876] and safety arch [cos10079-01va02]



pluto® med with optional adjustable handrails [cos102010-01va01], airwalk® ap [cos30028] and wheelchair ramp [cos16186-02]





USER APPLICATION MANUAL



Prof. Dr. Cornelia Schlick, physiotherapist and application specialist for gait analysis and therapy wrote the “[User Application Manual](#)” for treadmill therapy in rehabilitation, providing a deeper understanding and knowledge on this system.

Multimedia support

It is supported with video examples for better visualisation including many use cases for the airwalk® ap unweighting device and its accessories. Aside many relevant exercises or illustrations you will find appropriate QR codes to scan and as clickable text links. These will lead you to the relevant example video.

In addition, a YouTube playlist has been created where you can watch all the videos produced in sequence.

Following links will guide you to the matching playlist:



[YouTube](#)



[h/p/cosmos cloud](#)



Purpose and structure of the user manual

The user manual serves as a clinical reference book for users of h/p/cosmos treadmill systems in the field of rehabilitation. The first part introduces the treadmill with its features specific to rehabilitation. This includes for example the (dynamic) body weight support system „airwalk® ap“ and the active gait trainer robowalk®. In the following part, exercises for treadmill therapy in neurological and orthopaedic related gait disorders are suggested. The exercises are sorted according to their degree of difficulty. In addition, different settings of the robowalk® are discussed. The third part contains some case studies, for each of which a possible treatment session is shown.



TORQUALIZER® - RELIABLE ERGOMETERS MADE IN GERMANY

German Engineering since 1988

Benefit from our experience since 1988 in building and servicing standard and customized solutions around the globe.

h/p/cosmos standard

h/p/cosmos has been developing and building treadmills since 1988 in Germany for various fields including fitness, competitive sports, sports medicine, orthopaedic and neurological rehabilitation, sport science, biomechanics, uniformed services, performance diagnostics, cardiopulmonary diagnostics and rehabilitation. This experience, maximum standards in quality and advanced technology are the foundation of our business and reflect in every h/p/cosmos product.

The torqualizer® series is the perfect addition to the existing portfolio of treadmills to support therapists and trainers with a matching series of reliable ergometers for professional use. Correspondingly, all components are manufactured in best quality, jointly creating reliable and durable ergometers. The outstanding level of h/p/cosmos products and service as well as attractive prices form the h/p/cosmos standard.

The perfect match for your cardio circle

To allow a seamless look and feel as well as a perfect integration of h/p/cosmos treadmills into a torqualizer® cardio circle, the pluto® ef med treadmill is equipped with the same UserTerminal as the torqualizer® series.

Your advantages

All torqualizer® 900 ergometers can be ordered according to the planned application either as sports or medical devices (MDD 93/42/EEC certified with CE labeling) and the treadmill pluto® ef med 900 will be released already with the new certification MDR (EU) 2017/745.

With a keen eye on therapeutic demands, a very low step through allows easy access to the ergometers for patients with limited mobility. The 7" TFT touch display with biofeedback indications is easy to handle, clearly readable and grid independent (except for treadmills or when ordering 24 Volt permanent power supply option).

Customer-specific configuration for individual solutions

Ergometers off the peg can be many, at h/p/cosmos you can also get your individualized torqualizer® ergometer with a large selection of options and accessories. Various options and pre-configured packages allow you to customize your ergometer for the planned applications.



h/p/cosmos torqualizer® ef med 900 with 7" TFT display






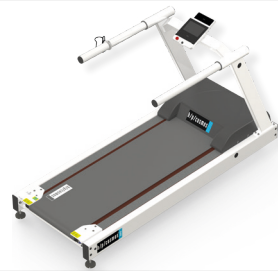


stainless steel length adjustable cranks [cos30021ef-acr] for an easy and tool-free adaption of the ergometer available at extra charge



horizontal seat adjustment allows a perfect adjustment of the recumbent ergometer to the individual needs for small and tall patients

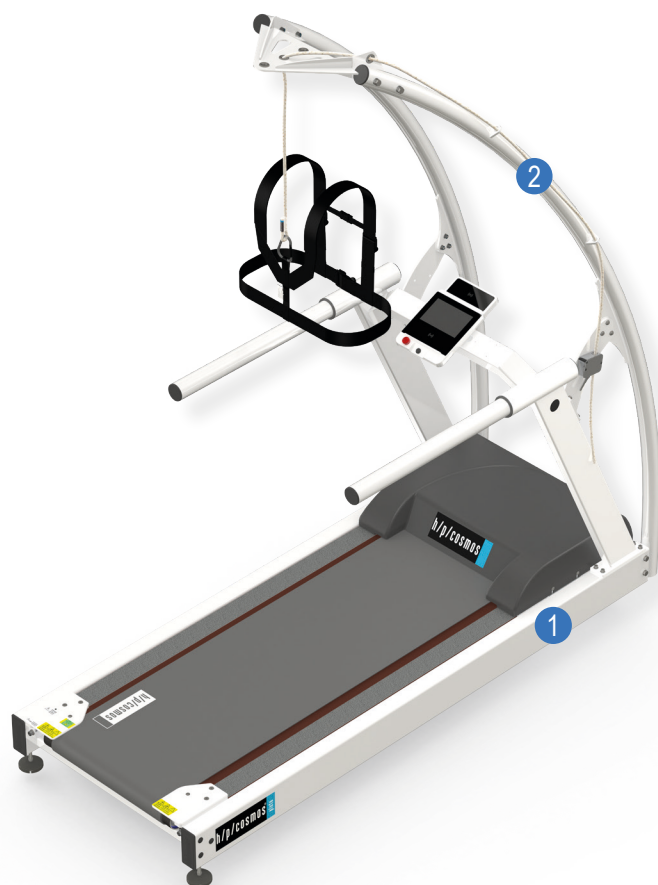
OVERVIEW OF THE H/P/COSMOS TORQUALIZER® SERIES:

	bike-ergometer	torqualizer® cycle ef med 900	torqualizer® cycle ef 900
	order number	cos30021ef-med900	cos30021ef-900
	applications	endurance training cycling	
	functions	7" TFT - capacitive multicolor touch display, high resolution, biofeedback, low step through / easy access, horizontally and vertically adjustable saddle, hybrid POLAR® pulse receiver, optional Bluetooth®, NFC, RFID, optional inductive charging for mobile devices	
	power range*	standard: 15 (med) / 25 (sport) ... 500 watts rpm independent (up to 1,000 watts rpm dependent) optional: 15 (med) / 25 (sport) ... 950 watts rpm independent (up to 1,000 watts rpm dependent)	
	recumbent-ergometer	torqualizer® recumbent ef med 900	torqualizer® recumbent ef 900
	order number	cos30031ef-med900	cos30031ef-900
	applications	endurance training legs / obese trainees / long training sessions	
	functions	7" TFT - capacitive multicolor touch display, high resolution, biofeedback, low step through easy access; horizontal seat adjustment, adjustable backrest, hybrid POLAR® pulse receiver, optional Bluetooth®, NFC, RFID, optional inductive charging for mobile devices	
	power range*	standard: 15 (med) / 25 (sport) ... 500 watts rpm independent (up to 1000 watts rpm dependent) optional: 15 (med) / 25 (sport) ... 950 watts rpm independent (up to 1000 watts rpm dependent)	
	arm-ergometer	torqualizer® arm ef med 900	torqualizer® arm ef 900
	order number	cos30030ef-med900	cos30030ef-900
	applications	endurance training, mobilisation & stabilisation of upper body / arms	
	functions	7" TFT - capacitive multicolor touch display, high resolution, biofeedback, gas pressure supported height adjustment of the drive unit, length-adjustable crank arms, synchronous & asynchronous mode, long seat for optimal positioning, easy dismantling of the seat for wheelchair access, rpm dependent and independent mode, hybrid POLAR® pulse receiver, optional Bluetooth®, NFC, RFID, optional inductive charging for mobile devices	
	power range*	standard: 15 (med) / 25 (sport) ... 500 watts rpm independent (up to 1,000 watts rpm dependent) optional: 15 (med) / 25 (sport) ... 950 watts rpm independent (up to 1,000 watts rpm dependent)	
	cross-ergometer	torqualizer® cross ef med 900	torqualizer® cross ef 900
	order number	cos30032ef-med900	cos30032ef-900
	applications	full body endurance training, easy on the joints	
	functions	7" TFT - capacitive multicolor touch display, high resolution, biofeedback forwards and backwards movement, hybrid POLAR® pulse receiver, rpm limit adjustable for extra safety, optional Bluetooth®, NFC, RFID, inductive charging for mobile devices	
	power range*	standard: 100 ... 500 watts rpm independent (up to 1,000 watts rpm dependent) optional: 100 ... 950 watts rpm independent (up to 1,000 watts rpm dependent)	
	stair-ergometer	torqualizer® stair ef med 900	torqualizer® stair ef 900
	order number	cos30033ef-med900	cos30033ef-900
	applications	endurance training legs / coordination / activity of daily life (ADL)	
	functions	7" TFT - capacitive multicolor touch display, high resolution, biofeedback, POLAR® auto connection system (Bluetooth® Low Energy & 5kHz), pedal independent system, cushioned pedal suspension, automatic weight detection for precise calculation of performance, optional Bluetooth®, NFC, RFID, optional inductive charging for mobile devices	
	treadmill	pluto® ef med 900	pluto® ef 900
	order number	cos31012	cos31011
	applications	endurance training walking and running, stress device for performance testing, gait analysis and gait training	endurance training walking and running
	functions	7" TFT - capacitive multicolor touch display, high resolution, biofeedback, POLAR® auto connection system (Bluetooth® Low Energy & 5kHz), optional Bluetooth®, NFC, RFID, optional inductive charging for mobile devices	

*Power range of all medical torqualizers®: 15 ... 500 watts rpm independent (cross ef med: 100 ... 500 watts rpm independent); 7 watts minimum resistance if the optional 24 Volt permanent power supply option is used, 15 (med) / 25 (sport) ... 950 watts independent (cross ef med 100 ... 950 Watt rpm independent) with performance package (optional 1000 watt rpm dependent at extra charge)

CONFIGURATION PLUTO® EF MED: REHABILITATION AND DIAGNOSTICS

To allow a seamless look and feel for therapists and patients as well as a perfect integration of h/p/cosmos treadmills into a torqualizer® cardio circle, the pluto® ef med treadmill is equipped with the same user terminal as the torqualizer® series. The specific terminal must be originally equipped and cannot be retrofitted to existing pluto® treadmills. Many further h/p/cosmos accessories (e.g. different handrails, safety or unweighting systems) can be retrofitted.



pos.	qty.	order number	product description
1.	1	cos31012	pluto® ef med running surface 150 x 50 cm, speed range 0 ... 22 km/h, elevation 0 ... 25 %, max. user weight 250 kg (optional up to 300 kg available) 7" TFT - capacitive multicolor touch display, high resolution
2.	1	cos10079-01va01	Safety arch 50 with harness & chest belt / stop function, fall protection for all applications (mandatory for high risk applications); running surface 50 cm wide
3.	1	cos102522va03	Packing treadmill 150/50 (SA) , packed part assembled on pallet with cardboard hood, incl. safety arch (L: 274 cm / W: 122 cm / H: 94 cm)
4.	1	cos104392	transport / shipping charge (please specify if truck, sea or air freight; for overseas sea shipment is recommended)
5.	1	cos15732-os	installation, commissioning and instruction through authorized and trained personnel

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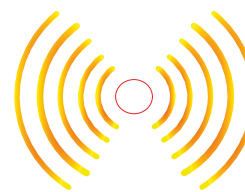
Our recommended upgrades for pluto® ef med:



adjustable handrails [cos102010va05] allow an easy, fast and tool-free adaption of the handrail height and width



standard maximum user weight of 250 kg
can optionally be upgraded
to 300 kg max. user weight



the optional connect package [cos30021ef-con] allows wireless (RFID, NFC, Bluetooth, Barcode) transmission of training data to compatible PC software

CONFIGURATION TORQUALIZER® EF MED 900: THERAPY BASIC



pos.	qty.	order number	product description
1.	1	cos30021ef-med900	torqualizer® cycle ef med 900 hybrid brake system with 15 ... 500 watts, 15 ... 140 rpm, max. user weight 150kg 7" TFT - capacitive multicolor touch display, high resolution, biofeedback
2.	1	cos30021ef-pro	Programme package for series 900 - Plus 7 programs, IPN Test, plus 5 additional tests, full range of functions on motion balance system and serious games
3.	1	cos30021-B-EF-AL-188	Packing torqualizer® for bicycle ef (med) 900 , (L: 125 cm / W: 85 cm / H: 170 cm) packed fully assembled on pallet with metal frame and cardboard hood for bicycle-ergometer
4.	1	cos104392	transport / shipping charge (please specify if truck, sea or air freight; for overseas, sea shipment is recommended)
5.	1	cos15732-os	installation, commissioning and instruction through authorized and trained personnel

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CONFIGURATION TORQUALIZER® EF MED 900: CARDIAC TESTING AND TRAINING



pos.	qty.	order number	product description
1.	1	cos30021ef-med900	torqualizer® cycle ef med 900 hybrid brake system with 15 ... 500 watts, 15 ... 140 rpm, max. user weight 150kg 7" TFT - capacitive multicolor touch display, high resolution, biofeedback
2.	1	cos30021ef-per	All-in Package (includes Performance package with extended max. workload - 950 watts, Programme Package & Connect Package)
3.	1	cos30021ef-900-epc	Power supply for power connection - Power supply 24 Volt
4.	1	cos30021-B-EF-AL-188	Packing torqualizer® for bicycle ef (med) 900 , (L: 125 cm / W: 85 cm / H: 170 cm) packed fully assembled on pallet with metal frame and cardboard hood for bicycle-ergometer
5.	1	cos104392	transport / shipping charge (please specify if truck, sea or air freight; for overseas, sea shipment is recommended)
6.	1	cos15732-os	installation, commissioning and instruction through authorized and trained personnel

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CONFIGURATION TORQUALIZER® RECUMBENT EF MED 900: THERAPY BASIC



pos.	qty.	order number	product description
1.	1	cos30031ef-med900	torqualizer® recumbent ef med 900 hybrid brake system with 15 ... 500 watts, 20 ... 120 rpm, max. user weight 150kg 7" TFT - capacitive multicolor touch display, high resolution, biofeedback
2.	1	cos30021ef-pro	Programme package for medical devices - Plus 7 programmes, IPN Test, plus 5 additional tests, full range of functions on motion balance system and serious games
3.	1	cos30031-B-EF-AL-189	Packing torqualizer® for recumbent ef (med) 900 , (L: 217 cm / W: 79 cm / H: 155 cm) packed fully assembled on pallet with metal frame and cardboard hood for bicycle-ergometer
4.	1	cos104392	transport / shipping charge (please specify if truck, sea or air freight; for overseas, sea shipment is recommended)
5.	1	cos15732-os	installation, commissioning and instruction through authorized and trained personnel

E & OE. Subject to alterations without prior notice. The illustrations may show accessories and items of optional equipment which are not part of standard specification or the recommended configuration.
Subject to our general terms of trade: www.hpcosmos.com



The new handrail system based on the most recent treadmill generation is also pneumatic spring supported for maximum flexibility and ease of use. Therapy seats are optionally available. Illustration similar, design currently under development.

LOCOMOTION SYSTEM

The locomotion system is the spearhead of our therapy solutions. For an early and safe start of therapy, the h/p/cosmos locomotion treadmill system can be combined with the unweighting system airwalk® ap. For a safe and fearless access to the treadmill, a wheelchair ramp can be mounted. Furthermore the handrails can contain telescopic extensions which can be pulled out 55 cm (21.65") to give additional stabilisation to the patients when accessing the treadmill. They can assist and hold the handrails in many cases.

Not only the patients profit from this system, also do the therapists who work with the patients. Especially manual gait adjustments of the patient result in a mostly uncomfortable crouching of the therapist, which we address in our systems. Foot rests and movable and rotatable therapist seats allow a near yet safe position for the therapist close to the patients' limbs. The additional keyboard for the treadmill enables a smooth operation without the need of using the terminal while performing manual therapy.



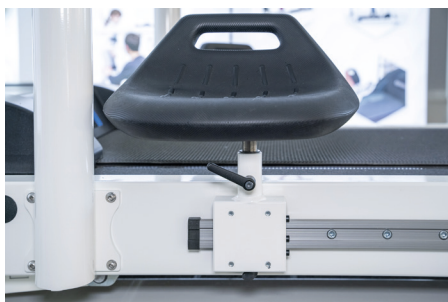
The comfort handrail can smoothly be rotated and is also adjustable in width.



The treadmill system can be equipped with variable footrests for therapists which are included with the seats.



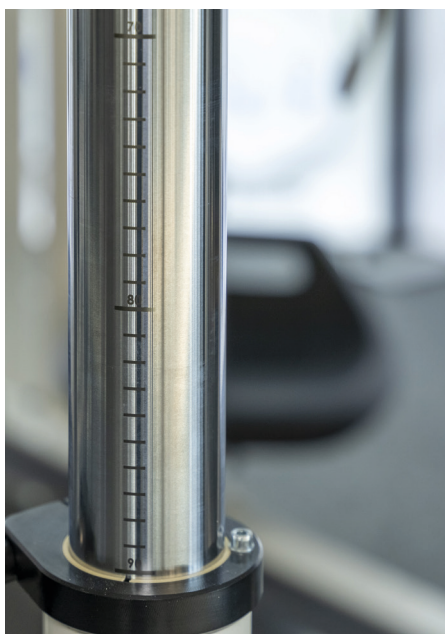
The treadmill system can be equipped with seats for therapists [cos104733_150]



The therapist seats are fully rotatable [cos104733_150]



Handrail system with additional extension rods.



The comfort handrail is gas pressure spring supported and allows a smooth and easy adjustment in height and width.

Why decide for a locomotion® treadmill system?

Due to an unergonomic working position and the difficulty of manually working with the patient's legs the therapists may find it difficult or even impossible to work with normal treadmills in manual locomotion therapy. Especially after several consecutive sessions, the therapists experience fatigue and often pain in shoulders and back.

These problems can get worse when working with spastic patients. It may even lead to an early termination of the therapy. Therefore h/p/cosmos has developed a very sophisticated and ergonomic solution, which also cares for the therapist.

We understand that only motivated and healthy therapists can optimally serve the patient's needs.

The simple to adjust rotatable therapist seats – with lumbar support – and corresponding foot rests on both sides of the treadmill allow the therapist to sit comfortably and firmly positioning themselves optimally.

For locomotion therapy the specially designed seats are positioned very close to the center of the deck, so the posture of the therapists is optimized. No obstructive bars from frames or other obstacles restrict the therapists' access to the patient's legs. To maximise patient safety while avoiding interference with e.g. lateral motion analysis, the h/p/cosmos safety arch and unweighting system airwalk® ap have a "arch" design.

Benefits of locomotion® and optional controls

Altering the speed, changing the elevation and stopping - the therapist must always have access to these functions. Frequently standing up of the therapists during locomotion therapy for re-adjustment of speed and elevation parameters would interrupt the manual motion support to the patient's legs. It would mean confusion and burden to patient and therapist and would make the therapy much less attractive and effective.

To simplify this, the additional keyboard and the additional stop can be placed by the therapist quickly and easily in the desired position. Both controls come with a flexible magnetic attachment and additional velcro strap for secure mounting and fast changing of positions either on the handrails (facing up or down), on the vertical telescope pillars or even on the nearby tubes of the arch shaped unweighting system frame.



Additional keyboard with magnetic attachment and additional velcro strap for secure mounting and fast change of positions either on the handrails or the vertical pillars.



Therapist using the system for manual gait therapy, manually adjusting the speed and elevation with the additional keyboard [cos104551].

Study overview

Stoller, O., de Bruin, E. D., Schindelholz, M., Schuster-Amft, C., de Bie, R. A., & Hunt, K. J. (2014): Cardiopulmonary exercise testing early after stroke using feedback-controlled robotics-assisted treadmill exercise: test-retest reliability and repeatability



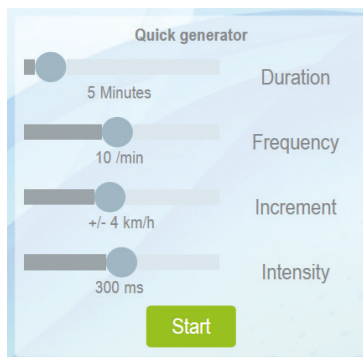
PERTURBATION - INDIVIDUAL APPLICATIONS



Fast perturbation events



Perturbation profiles - switching between selfmade and preset profiles



Quick Generator for a quick and reliable adjustment of perturbation parameters

Research

Because of the majority of fall causes, research has focused on sudden accelerations, decelerations or stops of the treadmill (Kurz et al., 2016; Liu, Bhatt & Pai, 2016; McCrum et al., 2017; Pigman et al., 2019). While slips and trips are the main cause in real life, interferences in other planes can also happen. Science and industry have created various technical equipment, nevertheless they are cost-intensive and realism and relevance are often questionable.

h/p/cosmos perturbation module

The h/p/cosmos perturbation module can provide extremely sudden changes of the speed. This can be as sudden and unexpected, that it is mandatory to use a fall prevention system, such as the h/p/cosmos safety arch with harness or the unweighting system h/p/cosmos airwalk® ap. Due to the powerful motor, the acceleration can be as fast as 17.36 m/sec^2 (for comparison: the sportscar Bugatti Veyron needs 2.6 sec from 0 ... 100 km/h, that equals 15.2 m/sec^2). But most of the perturbation events within a training session will be on a lower level and allow a customized training to a wide spectrum of patients. In due course of the training progress, the intensity can be adjusted with a few clicks.



Random factor

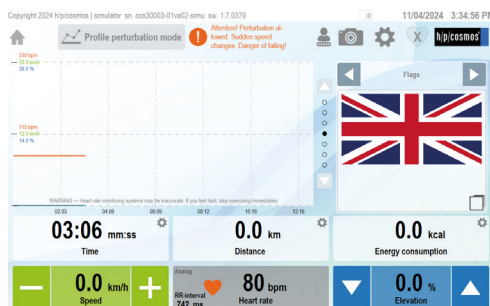
As in the real world the disturbances happen unexpectedly, the h/p/cosmos perturbation "quick generator" module includes a "random factor". Subjects will not predict the exact time or kind of the next event.

Individualization and progression matters

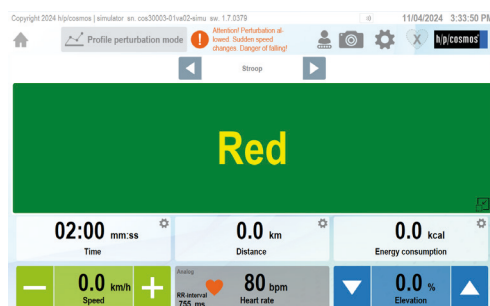
Single perturbation events or complex training sessions can be configured individually, within the profile editor. The fastest way to set up a gait stability training session, is to use the "quick generator". Sliding bars for the total training duration, the frequency and intensity (speed change and length in milliseconds) can be defined easily. If the subjects tolerate the training well, the overall intensity can be increased in a controlled manner.



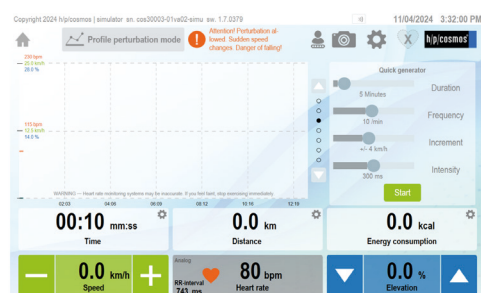
EVIDENCE DRIVEN DEVELOPMENT



Dual Tasking - name the country flag



Dual Tasking - Stroop Test



Quick Generator for quick and reliable adjustment of perturbation parameters

Focus matters

As long as the subjects focus on their perturbed walking task, they will probably learn to handle it. Like in reality, a rather simple task can get difficult if subjects perform a second task (e.g. typing a message on the mobile phone when walking). To create a more difficult and realistic training, the h/p/cosmos perturbation module allows to add dual tasking exercises, to redirect the focus to another task, away from walking. Cognitive tests, such as the Stroop test, simple - medium - hard mathematics, name the country flag, guess the countries capital, logical number sequences and other brain teasers will distract the subject from walking while stimulating the play instinct.

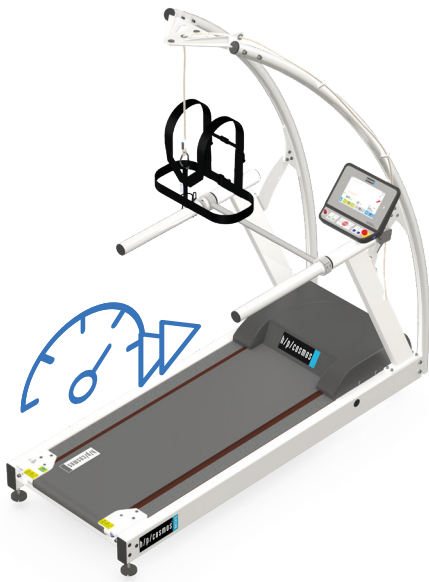
Literature:

Kurz, I., Gimmon, Y., Shapiro, A., Debi, R., Snir, Y., & Melzer, I. (2016) 'Unexpected perturbations training improves balance control and voluntary stepping times in older adults - a double blind randomized control trial', BMC Geriatrics, 16(1), p. 58. Available at: <https://doi.org/10.1186/s12877-016-0223-4>.

Liu, X., Bhatt, T., Pai, Y.-C. (Clive) (2016) 'Intensity and generalization of treadmill slip training: High or low, progressive increase or decrease?', Journal of Biomechanics, 49(2), pp. 135–140. Available at: <https://doi.org/10.1016/j.jbiomech.2015.06.004>.

McCrum, C., Gerards, M. H., Karamanidis, K., Zijlstra, W., & Meijer, K. (2017) 'A systematic review of gait perturbation paradigms for improving reactive stepping responses and falls risk among healthy older adults', European Review of Aging and Physical Activity, 14(1), p. 3. Available at: <https://doi.org/10.1186/s11556-017-0173-7>.

Pigman, J., Reisman, D. S., Pohlig, R. T., Wright, T. R., Crenshaw, J. R. (2019) 'The development and feasibility of treadmill-induced fall recovery training applied to individuals with chronic stroke', BMC Neurology, 19(1), p. 102. Available at: <https://doi.org/10.1186/s12883-019-1320-8>.



PERTURBATION AT A GLANCE



The user friendly interface with touchscreen allows an intuitive operation



Mandatory fall prevention during perturbation with safety arch and chest belt



Perturbation and non-perturbed gait training on the same treadmill

Perturbation as an add-on feature

The perturbation module is an innovative add-on feature to h/p/cosmos treadmills of the latest generation with UserTerminal Touch (Pro). The treadmill can easily be retrofitted with the perturbation module, provided that the treadmill is equipped with either a safety arch or an airwalk® ap unweighting system with emergency stop and harness to prevent subjects from falling.

Overview

Programmable via convenient user interfaces, the perturbation module enables therapists and trainers to perform a wide range of trainings without time consuming configuration or preparation:

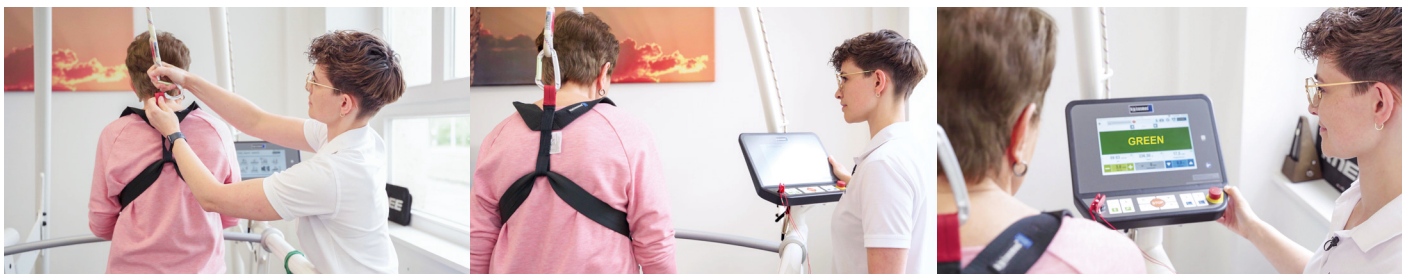
- reactive stability training
- realistic slips and trips pattern in sagittal plane
- short events in milliseconds
- fixed pattern, activated by click
- random pattern for unpredictable trainings
- dual tasking and cognitive tests to distract
- highest patient safety, due to fall-stop and harness

Of course, the treadmill's standard functionalities are retained when the perturbation mode is deactivated, so no additional devices are needed to perform standard therapeutic or performance trainings such as

- non-perturbed rehabilitation training
- endurance training walking or running
- gait analysis e.g. with optionally available pressure distribution
- cardio training
- performance diagnostics



PERTURBATION IN PRACTICE



Gait stability training with an elderly patient with Parkinson's disease



Stability training and gait training with a patient with weakness in foot dorsiflexion



Random perturbation with a geriatric patient to improve his reactive stability



PERTURBATION AT A GLANCE



mercury® med with adjustable handrails [cos102010-01va02],
airwalk® ap unweighting system [cos30028], robowalk® front
[cos104835_aw] and back [cos104836]



mercury® med with adjustable handrails [cos102010-01va02],
airwalk® ap unweighting system [cos30028], robowalk® front
[cos104835_aw], back [cos104836]
and reverse belt rotation [cos101000_reverseva02]

Perturbation training with h/p/cosmos treadmills

Perturbation is a special software mode for sudden and explosive decelerations and accelerations. The perturbation mode is a special option for treadmills with a Touch or Touch Pro Terminal, available at extra charge. The perturbation mode is designed as a special walking and running profile mode. It allows sudden and explosive decelerations and accelerations and very short action intervals, typically ranging from 100 ... 1000 milliseconds.

- Action is defined as speed changes, either a maximal short burst acceleration or deceleration.
- A sudden acceleration is considered to simulate a slip, e.g. on icy roads
- A sudden deceleration or stop is considered to simulate a trip, e.g. on the edge of the carpet
- Also a series of randomized and less sudden intervals can be programmed, in order to provide frequently altered perturbation moments



[Playlist:](#) Example videos of perturbation in gait therapy and webinars on the topic perturbation.

Compatible are all h/p/cosmos treadmills with a Touch (Pro) UserTerminal installed when ordered. Retrofitted Touch (Pro) Terminals are NOT compatible.

Study overview treadmill training with perturbation

Jan Mehrholz 1, Joachim Kugler, Alexander Storch, Marcus Pohl, Bernhard Elsner, Kathleen Hirsch: Treadmill training for patients with Parkinson's disease.

Colleen G Canning 1, Serene S Paul, Alice Nieuwboer: Prevention of falls in Parkinson's disease: a review of fall risk factors and the role of physical interventions

Marissa H G Gerards 1 2, Christopher McCrum 1 3, Avril Mansfield 4 5 6 7, Kenneth Meijer 1: Perturbation-based balance training for falls reduction among older adults: Current evidence and implications for clinical practice

Ulrike Sonja Trampisch 1, Alexander Petrovic 2, Diana Daubert 2, Rainer Wirth : Effects of treadmill slip and trip perturbation-based balance training on falls in community-dwelling older adults (STABILITY): study protocol for a randomised controlled trial.



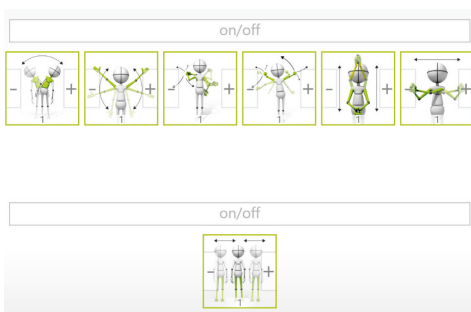
VAST.REHAB - FUNCTIONAL TRAINING WITH VIRTUAL REALITY



Dual tasking including the upper limbs for a full body workout on a treadmill



Create specific trainings in the VAST.Rehab software



Huge task generator with many variations of games, choices for body regions to address, as well as time and difficulty.

VAST.Rehab is a revolutionary training solution for h/p/cosmos treadmills. This innovative technology fuses training, rehabilitation, virtual reality and serious gaming, transforming treadmill workouts into active and diverting dual tasking sessions with engaging experiences. With VAST.Rehab, treadmill training is no longer a tiring routine but a dynamic and exciting journey that stimulates the play instinct.

VAST.Rehab - Functional training with virtual reality

VAST.Rehab allows virtual reality experiences during standing, walking or running on a treadmill. The subject's body will be tracked by a camera while being on the treadmill. As a dual tasking exercise besides walking, the subject needs to fulfil different tasks, involving the upper limbs, body posture or the position on the treadmill.

The VAST.Rehab interfaces

The VAST.Rehab software platform consists of a therapist and a patient panel. Both platforms can be run on the same PC or in case of multiple patient stations on dedicated PCs. The therapist panel allows to create and manage patients. Afterwards the therapist assigns the available selection of trainings as well as personalized training targets. The software also includes features for evaluation, feedback and documentation.

The patient panel is the gamified part of the system right in front of the treadmill on a big TV screen, displaying the patient's games and results.

State of the art gamification

Chose from more than 25 interactive games focussing on varying cognitive and motor tasks. The subject is tracked via a special camera and represented live as an avatar to fulfil motion-activated solutions, such as:

- Change the position on the running deck (left – right) in order to race an ambulance car through the busy streets of a town
- Fold your hands and navigate a spaceship to avoid obstacles
- Throw a ball and hit the tins
- Swing your arms like you were holding a sword to hit funny vampires
- Position your arms like a clock to block balls with a stick



THERAPEUTIC POSSIBILITIES



Example task: swing a sword and defend yourself against vampires



Example task: steer the spaceship via your upper body movement



Example task: balance balls into their targets with your arms

VAST.Rehab uses a wide variety of therapeutic tasks to enable training in all rehabilitation domains:

Musculoskeletal

- Range of motion
- Strength
- Endurance
- Fitness and cardiovascular training

Neurological

- Movement quality (gross and fine motor skills)
- Movement awareness and proprioception
- Bilateral movements in response to bilateral stimulation

Balance and Equilibrium

- Trunk and postural control
- Anticipatory postural responses
- Adequate reactions to stimuli and distractors placed in preplanned or random positions

Technical specifications - What do you need for VAST.Rehab?

- h/p/cosmos treadmill with UserTerminal Touch Pro incl. coscom® v4 (via Ethernet)
- high resolution camera for body detection
- optionally needed to measure and transmit step frequency: speed sensor (cos101000_brake_as) and FTMS interface (cos101000_FTMS)
- State of the art PC system, recommended: h/p/cosmos satellite PC (cos14970-03)
- TV (e.g. cos102397) and TV stand (e.g. cos101624) or wall mount

Minimum system requirements for VAST.Rehab

- Windows 10 | Intel i3 CPU or better | 8 GB RAM
- 2 PC monitors
- available USB, Ethernet and Bluetooth interface
- Utilization of Touch screen is possible



RETURN TO SPORT





RETURN TO SPORTS



Example task: Punch a boxing bag



Using the wireless keyboard with integrated mouse control



Satellite tower as stand alone solution

Return to sports with virtual reality

The VAST.Rehab system in combination with a treadmill and fall prevention can be used for advanced return to sport activities. Since injuries are common in sports a versatile and balanced therapeutic support is necessary maybe even after full recovery for follow-up care. VAST.Rehab combines different exercises for different body goals, all of which can of course be customised in terms of variation, strength, speed and flexibility of the user.

The h/p/cosmos satellite tower

For a sleek and simple setup, the h/p/cosmos satellite tower has been developed. The simple setup and the slim design allow for fast placement and start of the virtual reality experience. No additional table or periphery is needed. If not needed, a storage behind the tower fits the keyboard perfectly. Additional TVs or displays can be connected using HDMI.

VAST.Rehab also available as stand alone setup

The best results will be achieved while using a treadmill for gait therapy or in a return to sport environment, but the use of VAST.Rehab is also possible as standalone version. With this special licence you are able to use the software with your previously purchased equipment from h/p/cosmos or even your own equipment. Note: Since many therapists have different systems with different setups, we can only guarantee the functionality for the setup acquired from h/p/cosmos.

A short video clip using the VAST.Rehab system on the quasar® med treadmill at a therapy centre.

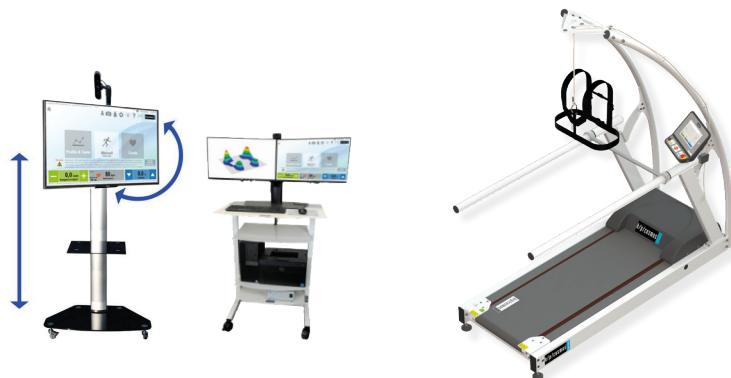
Equipped with the safety arch and speedplate it is a great device for return to sports training.

The video is featuring many games with a wide variety of movements. This is also possible with simultaneous perturbation events.



YouTube

CONFIGURATION MERCURY® MED: FUNCTIONAL TRAINING WITH VIRTUAL REALITY



pos.	qty.	order number	product description
1.	1	cos31042	h/p/cosmos treadmill mercury® med - running surface 150 x 50 cm, speed range 0 ... 22 km/h, elevation 0 ... 25 %, UserTerminal Touch with keyboard and touch display, integrated interface and coscom® v4 protocol
2.	1	cos101000_touch_pro	Upgrade UserTerminal Touch Pro , Upgrade of the UserTerminal Touch Basic to UserTerminal Touch Pro for professional applications and special features
3.		cos102918-01	Handrails long , straight for pluto® and mercury® models with running surface 150 x 50 cm
4.	1	cos10079-01va01	Safety arch 50 with harness & chest belt / stop function, fall protection for all applications (mandatory for high risk applications); running surface 50 cm wide
5.	1	cos104823	VAST.Rehab system software including licence and dongle
6.	1	cos104823_cam	Camera including mounting kit
7.	1	cos14970-03	h/p/cosmos satellite PC med DELL PC, 2x 24" LCD Monitor, COL Laser printer, potential isolation transformer, h/p/cosmos PC-rack with 4 casters
8.	1	cos102397	Monitor TV 50" (with a small monitor stand for table)
9.	1	cos101624	Monitor stand mobile for TV 32-60" monitor stand (without monitor!) for additional TV / monitor (max. load: 30 kg), height: 180 cm.
10.	3	cos60098010002	Labour costs per hour for service engineer
11.	1	cos102522-01va07	Packing treadmill 150/50 (SA), packed part assembled in a wooden box, incl. safety arch (L: 274 cm / W: 122 cm / H: 163 cm)
12.	1	cos60098010021	Transport / shipping charge (please specify if truck, sea or air freight; for overseas sea shipment is recommended)
13.	1	cos10194	Installation, commissioning and instruction through authorised and trained personnel

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ESSENTIAL CONFIGURATION FOR FUNCTIONAL TRAINING WITH VIRTUAL REALITY (ALREADY EXISTING H/P/COSMOS TREADMILL, SAFETY ARCH AND PERIPHERY)



pos.	qty.	order number	product description
1.	1	cos104823	VAST.Rehab system incl. software + licence + dongle
2.	1	cos104823_cam	Camera including mounting kit

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Game: Defend from cute vampires.

A short video clip using the vast system on our treadmill. The person is wearing the harness for the mandatory fall stop with the safety arch.

The video is featuring the games

- "sorter" send the falling balls to the correct target
- "umbrella" save the hippo from weather
- "ambulance" drive through the traffic



YouTube

CASE STUDIES

Therapy example - „return to sport“

After an accident, the way back to the old form can be challenging. Initially, deficits can be diagnosed and documented by a gait analysis with Microgate optogait® before the therapy takes place with body weight support in the airwalk® ap.

The medical treadmill mercury® med with its cushioned running surface and a maximum speed of 22 km/h as well as max. 25% incline is also suitable for athletic patients.

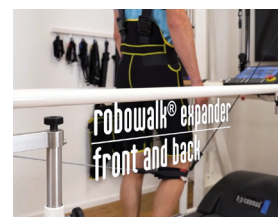
With its optional emergency stop, the airwalk® ap offers additional safety for the patient and at the same time maximum freedom of movement due to the single-point suspension. Thus, side steps, lunges or rotations are possible.

The optional reverse belt rotation of the treadmill enables eccentric training and provides additional stimuli.



The use of h/p/cosmos therapy equipment within a return to sport setting at a therapy center in southern Germany .

[YouTube](#)



Physiotherapy - rehab and functional training

After an injury or a surgery it is very hard to start with a gait training soon, since most patients need a walking aid. These tools may often be physically hindering the patient in developing a proper gait pattern. When the doctor recommends body weight supported training, this early start into rehabilitation can often be done without any further help.

Practising to walk again with body weight support can replace the walking aid and enhance learning to walk again correctly in the very early stages.

Integrated “air cushion mode” allows rehabilitation to start earlier, using task-specific functional exercise without pain whilst the therapist permanently controls the reduced body weight.

Additional therapeutic advancement with robowalk® expander system

Progresses in earlier therapeutic use back to a normal sports schedule can be achieved through full body muscular training based on the different adjustments of the expander system and the correspondingly trained muscles. The therapist can decide which part of the body to train and is able to specify the settings of the expander system for support or resistance at the specific muscle or muscle group.



Frank Haile (Head of Physiotherapy & authorized signatory of VfB Rehawelt) explains the use of the airwalk® ap for Rehab and Functional Training.

[YouTube](#)

CASE STUDIES

h/p/cosmos visits HSH Lamprecht

The interdisciplinary physiotherapy HSH Lamprecht is one of the leading physiotherapy practices in Germany for neurological and orthopaedic rehabilitation.

In a six-part video series: „h/p/cosmos visits HSH Lamprecht“, the HSH Lamprecht team puts the spotlight on their own patients and shows the possibilities of targeted treadmill therapy.

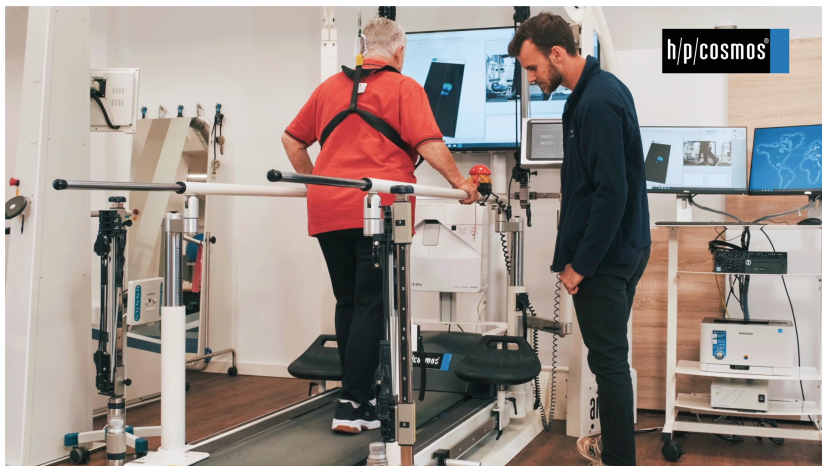
The series cover interviews of long-time patients with many different limitations like multiple sclerosis or cerebral haemorrhage. Also other patients who had major accidents are treated at HSH Lamprechts, but one thing they have all in common. They all are fighting their way back into everyday life.

All patients regained a quality of life and freedom through the personal care and intense training on the treadmill and/or additional training with the unweighting system airwalk® ap.



The use of h/p/cosmos therapy equipment at HSH Lamprecht in Kirchheim unter Teck

[Playlist on Youtube](#)



Patient with Parkinson's disease

For 2 units a week, she actively works against the deterioration of her gait on the treadmill, also relying on the visual stimulation. The virtual reality zebris „Forest Walk“ is not only a great distraction from the physical training, but also offers further advantages for the patient's therapy through dual-tasking. Together with the therapist Simon, the lady was able to curb the symptoms of her progressive Parkinson's disease through intensive treadmill training.



Stroke patient

After a stroke in January 2020, Mr D. fell into a coma. His way out of the wheelchair and back onto his own feet is a very impressive story. The gait therapy takes place under body weight support in the airwalk® ap unweighting system. The single-point suspension and neoprene unweighting shorts allow maximum freedom of movement with simultaneous safety. Additional stability is provided by the height and width adjustable handrail.



RECOMMENDED TREADMILL CONFIGURATIONS FOR THERAPY

Experience in therapy solutions

h/p/cosmos is in business since 1988 and therefore built a huge know-how. In cooperation with leading therapists, the development of treadmills, the adjustment of equipment or new inventions were made according to the markets needs.

Why recommendations?

Based on our experience of almost 40 years of manufacturing and promotion of treadmills for therapy, we have developed a set of recommended configurations. These recommendations can always form the basis for your personal therapeutic device and must be tailored to your specific needs. Some key factors which must be reviewed when deciding for a treadmill system can be:

- Physiotherapists usually work with various kinds of different patients (height, weight, ...) on the treadmill - a versatile and flexible basic treadmill is needed.
- Gait therapy and rehabilitation is in demand of analysing tools to document and visualize progress
- Elderly patients with need for support and/or the possibility for self-support for example via adjustable handrails or arm supports
- Sports rehabilitation is often paired with return to sports activities or the need for advanced speed for sports training in general
- Rehabilitation from diverse diseases like stroke, head injury and more require individual approaches and therefore adjustable systems
- Pediatrics has its own very special needs regarding the height of the small patients

Even though the recommendations fit most needs modern therapy usage - a personal consultation is recommended before acquiring a treadmill. Since every client is different, so are the needs. Since every therapy itself is different for every patient, the treadmill system has to be adjusted accordingly. The h/p/cosmos sales team and also our distributors in your country are trained specifically to support you in finding the best matching solution.



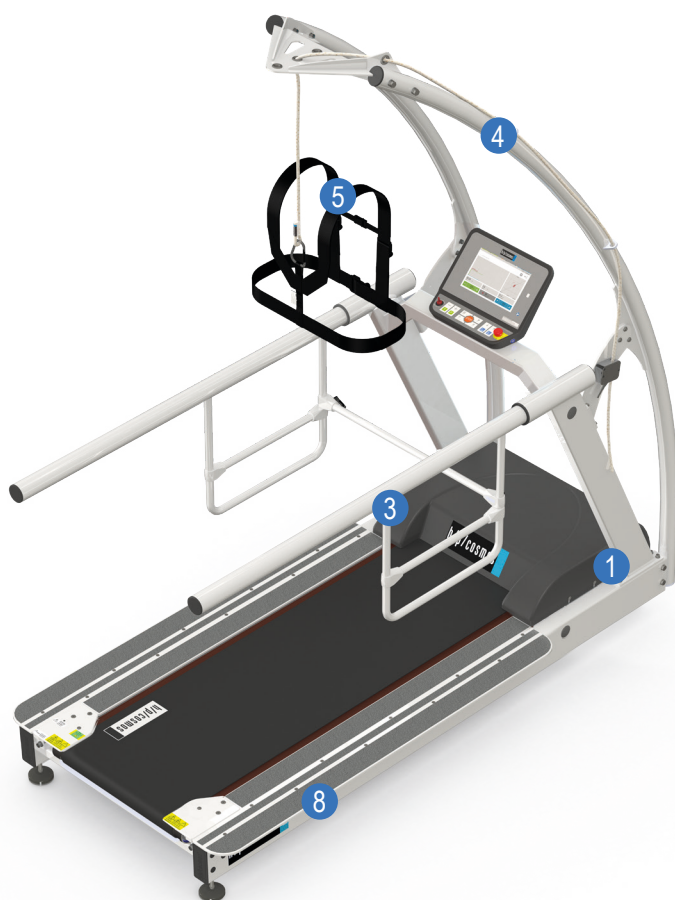
CONFIGURATION PLUTO® MED: GAIT REHABILITATION BASIC



pos.	qty.	order number	product description
1.	1	cos31022	h/p/cosmos treadmill plato® med running surface 150 x 50 cm, speed range 0 ... 22 km/h, elevation 0 ... 25 %, UserTerminal Touch with keyboard and touch display, integrated interface and coscom® v4 protocol
2.	1	cos101000_touch_pro	Upgrade UserTerminal Touch Pro. Upgrade of the UserTerminal Touch Basic to UserTerminal Touch Pro for professional applications and special features
3.	1	cos101000_reverseva01	Reverse treadmill belt rotation, incl. running belt 5mm & belt centering rolls, max. reverse speed: 5 km/h
4.	1	cos102918-01	Handrail long - Handrail pluggable long. Option consists of 2 long handrails (not for USA/Canada)
5.	1	cos102522va01	Packing treadmill 150/50 (SA), packed part assembled on pallet with cardboard hood (L: 230 cm / W: 109 cm / H: 87 cm)
6.	1	cos60098010021	transport / shipping charge (please specify if truck, sea or air freight; for overseas sea shipment is recommended)
7.	1	cos10194	installation, commissioning and instruction through authorised and trained personnel

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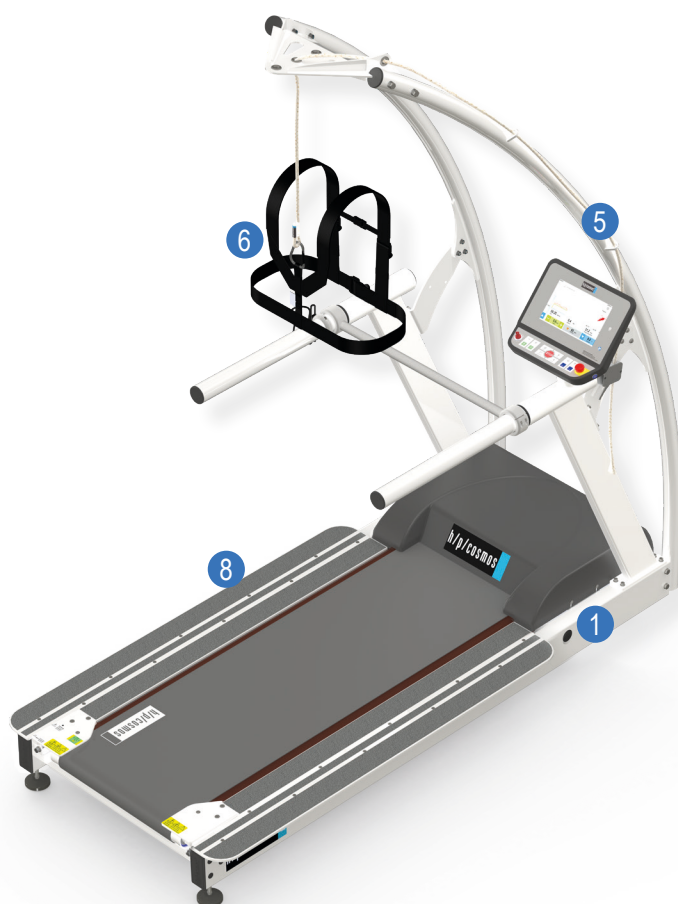
CONFIGURATION PLUTO® MED: GAIT REHABILITATION PEDIATRICS



pos.	qty.	order number	product description
1.	1	cos31022	h/p/cosmos treadmill pluto® med running surface 150 x 50 cm, speed range 0 ... 22 km/h, elevation 0 ... 25 %, UserTerminal Touch with keyboard and touch display, integrated interface and coscom® v4 protocol
2.	1	cos101000_touch_pro	Upgrade UserTerminal Touch Pro. Upgrade of the UserTerminal Touch Basic to UserTerminal Touch Pro for professional applications and special features
3.	1	cos102400-01va02	Handrail pediatric (long version) , pluggable for treadmill 150/50 option consists of 2 side handrails with various grip positions as well as an adjustable cross bar
4.	1	cos10079-01va01	Safety arch 50 with harness & chest belt / stop function, fall protection for all applications (mandatory for high risk applications); running surface 50 cm wide
5.	1	cos14903-04-XXS	Chestbelt XXS for safety arch system - colour code: orange, for chest measurement approx. 45-65 cm
6.	1	cos14903-04-XS	Chestbelt XS for safety arch system - colour code: black, for chest measurement approx. 55-75 cm
7.	1	cos14903-04-S	Chestbelt S for safety arch system - colour code: red, for chest measurement approx. 65-95 cm
8.	1	cos103928	Footboard extra wide (both sides) 150/50 for therapy, diagnostics and safe on and off stepping for gait t training and diagnostics
9.	1	cos102522va03	Packing treadmill 150/50 (SA) , packed part assembled on pallet with cardboard hood, incl. safety arch (L: 274 cm / W: 122 cm / H: 94 cm)
10.	1	cos60098010021	transport / shipping charge (please specify if truck, sea or air freight; for overseas sea shipment is recommended)
11.	1	cos10194	installation, commissioning and instruction through authorised and trained personnel

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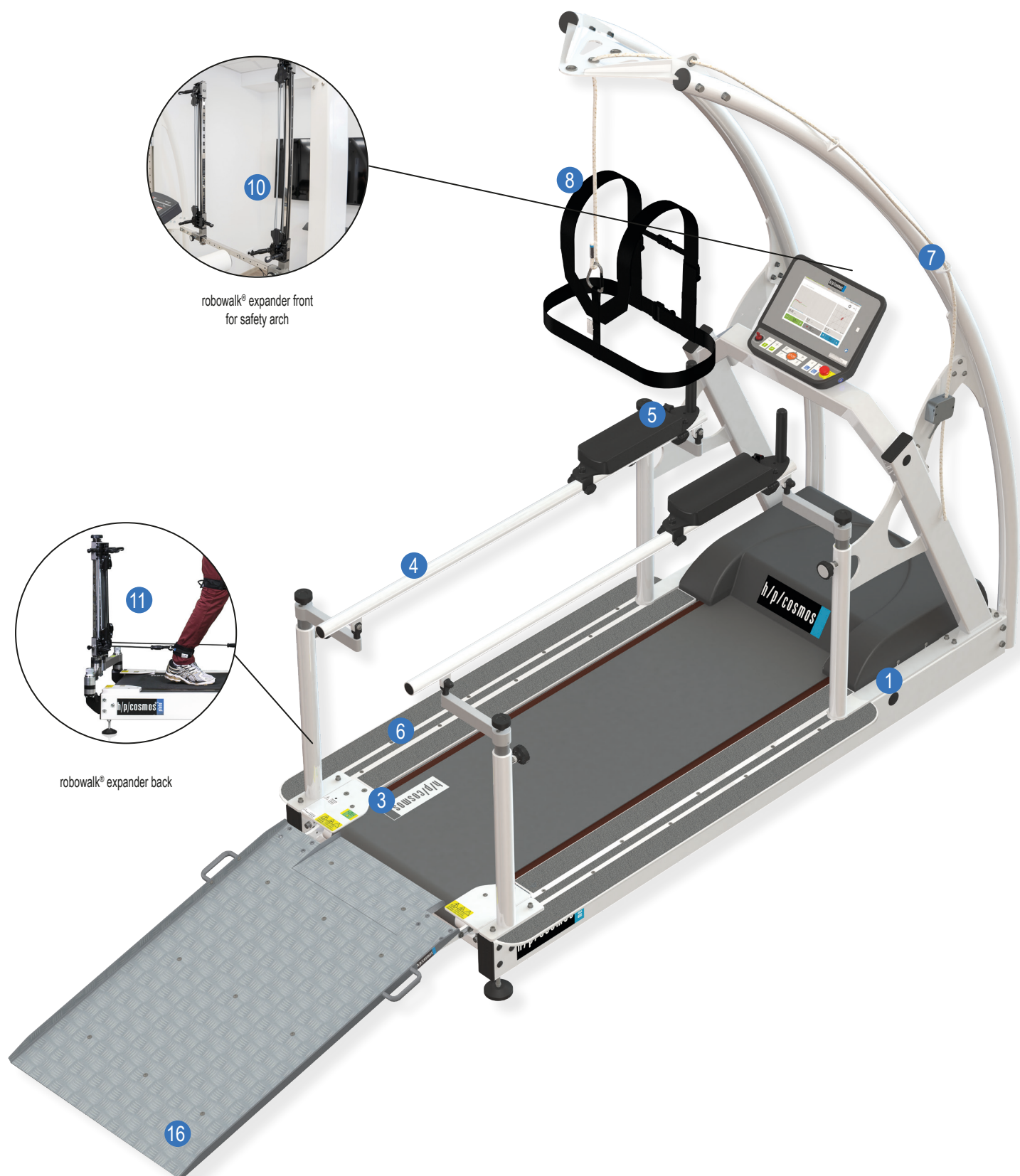
CONFIGURATION MERCURY® MED: DIAGNOSTICS



pos.	qty.	order number	product description
1.	1	cos31042	h/p/cosmos treadmill mercury® med running surface 150 x 50 cm, speed range 0 ... 22 km/h, elevation 0 ... 25 %, UserTerminal Touch with keyboard and touch display, integrated interface and coscom® v4 protocol
2.	1	cos101000_touch_pro	Upgrade UserTerminal Touch Pro , Upgrade of the UserTerminal Touch Basic to UserTerminal Touch Pro for professional applications and special features
3.	1	cos101000_acceleration	Very high acceleration (up to 2.315 m/s²), activation via license key
4.	1	cos101000_metronome	Acoustic cueing for individually setting the cadence target
5.	1	cos10079-01va01	Safety arch 50 with harness & chest belt / stop function, fall protection for all applications (mandatory for high risk applications); running surface 50 cm wide
6.	1	cos14903-04-S	Chestbelt S for safety arch system - colour code: red, for chest measurement approx. 65-95 cm
7.	1	cos14903-04-L	Chestbelt L for safety arch system - colour code: yellow, for chest measurement approx. 105-135 cm
8.	1	cos103928	Footboard extra wide (both sides) 150/50 for therapy, diagnostics and safe on and off stepping for gait t training and diagnostics
9.	1	cos102522va03	Packing treadmill 150/50 (SA) , packed part assembled on pallet with cardboard hood, incl. safety arch (L: 274 cm / W: 122 cm / H: 94 cm)
10.	1	cos60098010021	transport / shipping charge (please specify if truck, sea or air freight; for overseas sea shipment is recommended)
11.	1	cos10194	installation, commissioning and instruction through authorised and trained personnel

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CONFIGURATION MERCURY® MED: GAIT REHABILITATION ADVANCED



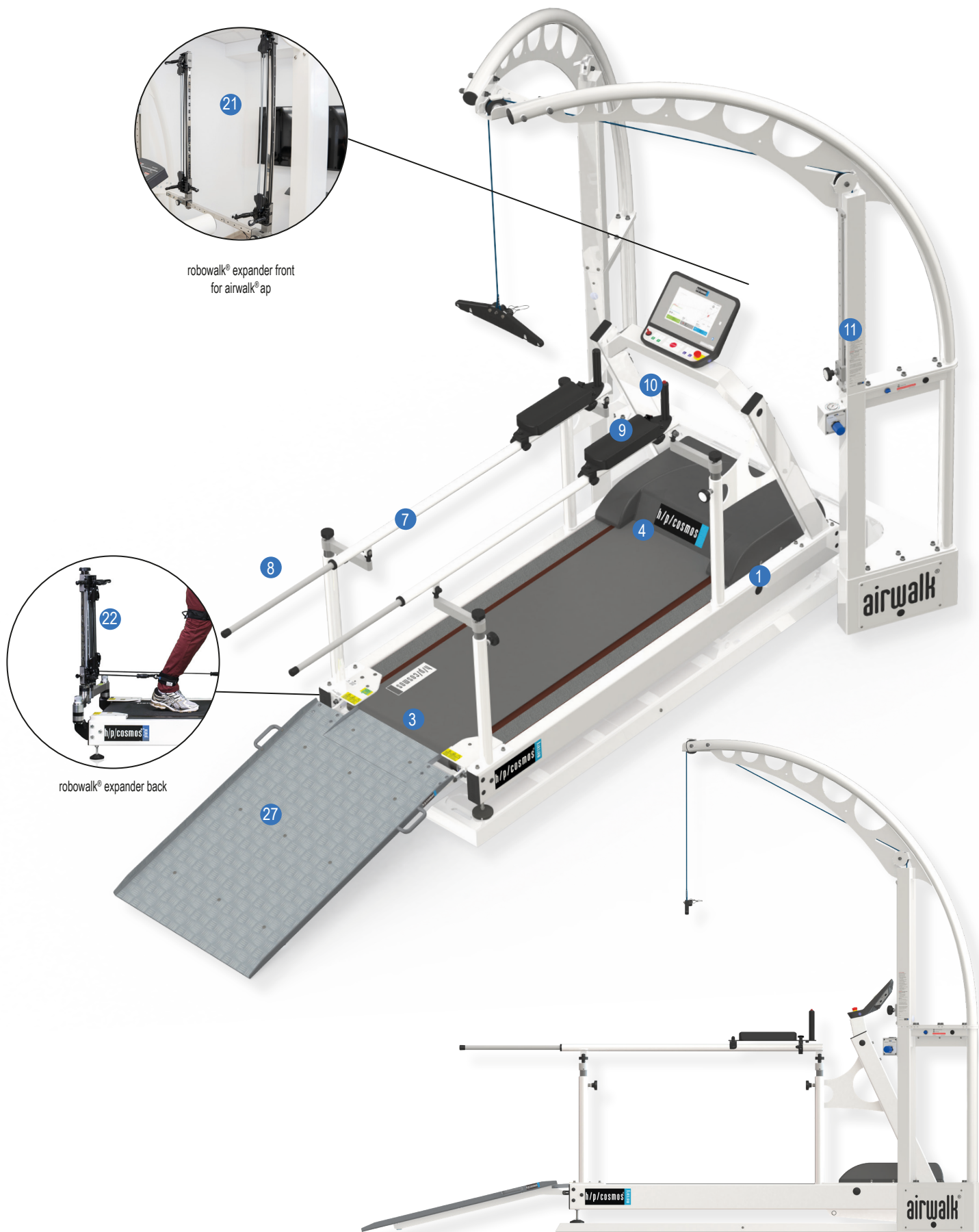
CONFIGURATION MERCURY® MED: GAIT REHABILITATION ADVANCED

pos.	qty.	order number	product description
1.	1	cos31042	h/p/cosmos treadmill mercury® med running surface 150 x 50 cm, speed range 0 ... 22 km/h, elevation 0 ... 25 %, UserTerminal Touch with keyboard and touch display, integrated interface and coscom® v4 protocol
2.	1	cos101000_touch_pro	Upgrade UserTerminal Touch Pro , Upgrade of the UserTerminal Touch Basic to UserTerminal Touch Pro for professional applications and special features
3.	1	cos101000_reverseva02	Reverse treadmill belt rotation , incl. running belt 5mm & belt centering rolls, max. reverse speed: 5 km/h
4.	1	cos102010-01va02	Handrails adjustable 150/50 ; bar length 1500 mm, locking bar for height raster 25 mm for mercury® models 150/50 cm, H: 75 ... 120 cm / W: 38 ... 104 cm
5.	1	cos102560	Arm supports for handrails adjustable ; forearm support with hand grip for adjustable handrails
6.	1	cos103928	Footboard extra wide (both sides) 150/50 for safe on and off stepping during fitness trainings and exercises. For speed & sprint training safety arch is an obligatory requirement.
7.	1	cos10079-01va01	Safety arch 50 with harness & chest belt / stop function, fall protection for all applications (mandatory for high risk applications); running surface 50 cm wide
8.	1	cos14903-04-S	Chestbelt S for safety arch system colour code: red, for chest measurement approx. 65-95 cm
9.	1	cos14903-04-L	Chestbelt L for safety arch system colour code: yellow, for chest measurement approx. 105-135 cm
10.	1	cos104835_50	robowalk® expander front for treadmills with safety arch
11.	1	cos104836	robowalk® expander back (rear)
12.	1	cos101050-S	Leg cuff thigh S (250 - 390 mm), 1 pair
13.	1	cos101050-M	Leg cuff thigh M (350 - 510 mm), 1 pair
14.	1	cos101050-L	Leg cuff thigh L (490 - 750mm), 1 pair
15.	1	cos101051-XS	Leg cuff shank XS (140 - 270mm), 1 pair
16.	1	cos16186-02	Wheelchair ramp (L: 125 cm x W: 80 cm) enables the patients' wheelchair to be pushed onto the treadmill
17.	1	cos102522va03	Packing treadmill 150/50 (SA) , packed part assembled on pallet with cardboard hood, incl. safety arch (L: 274 cm / W: 122 cm / H: 94 cm)
18.	1	cos60098010021	transport / shipping charge (please specify if truck, sea or air freight; for overseas sea shipment is recommended)
19.	1	cos10194	installation, commissioning and instruction through authorised and trained personnel

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CONFIGURATION MERCURY® MED: GAIT REHABILITATION PROFESSIONAL

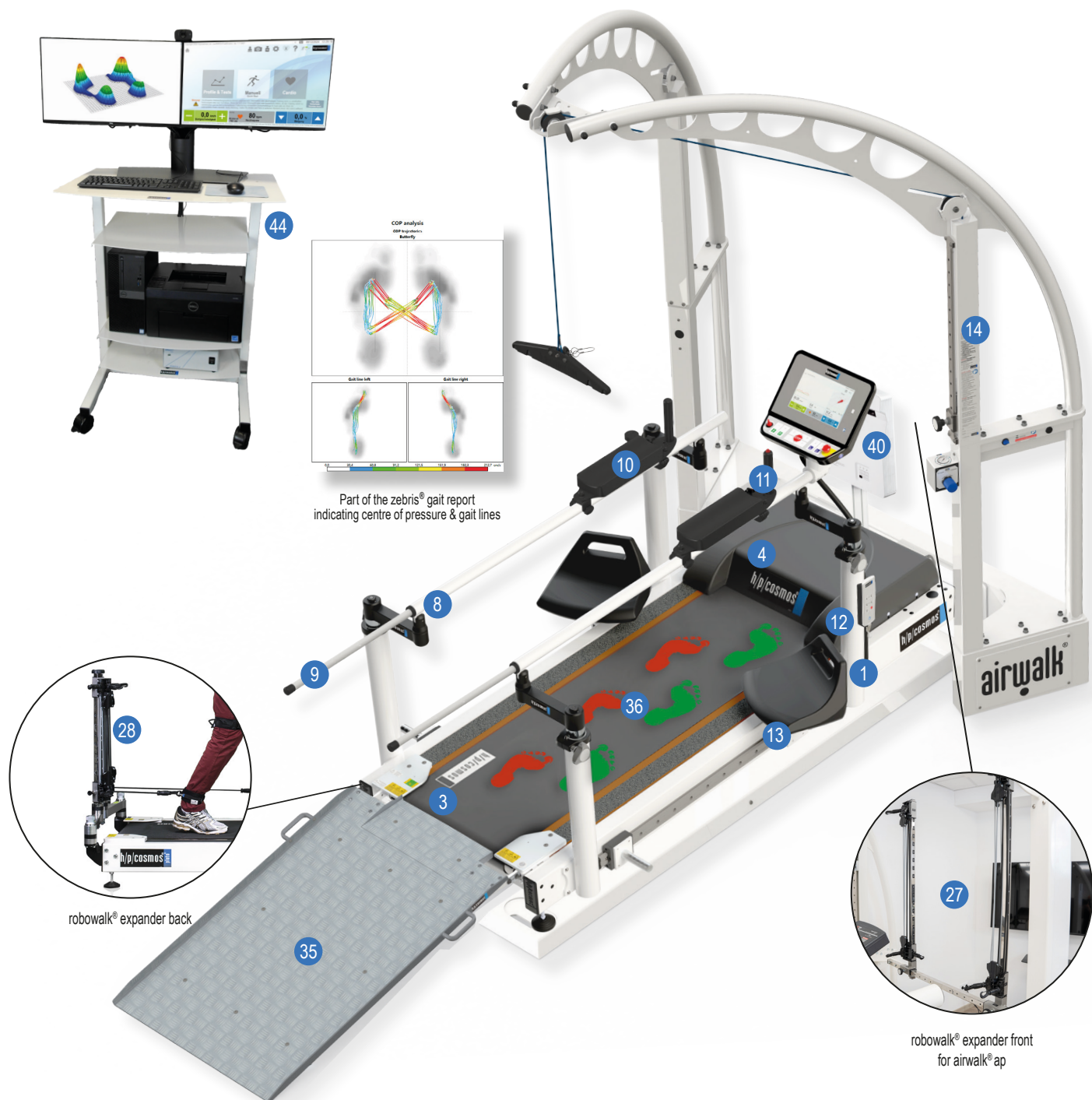


CONFIGURATION MERCURY® MED: GAIT REHABILITATION PROFESSIONAL

pos.	qty.	order number	product description
1.	1	cos31042	h/p/cosmos treadmill mercury® med running surface 150 x 50 cm, speed range 0 ... 22 km/h, elevation 0 ... 25 %, UserTerminal Touch with keyboard and touch display, integrated interface and coscom® v4 protocol
2.	1	cos101000_touch_pro	Upgrade UserTerminal Touch Pro , Upgrade of the UserTerminal Touch Basic to UserTerminal Touch Pro for professional applications and special features
3.	1	cos101000_reverseva02	Reverse treadmill belt rotation , incl. running belt 5mm & belt centering rolls, max. reverse speed: 5 km/h
4.	1	cos104173	Motor brake ; prevents the majority of belt movement at target speed = "0" (e.g. treadmill stop/pause), with exception of a few cm / inch.
5.	1	cos101000_metronome	Acoustic cueing for individually setting the cadence target
6.	1	cos101000_FTMS	Bluetooth FTMS Interface for UserTerminal Touch Pro ; user terminal Bluetooth FTMS interface for connecting e.g. software Zwift or Kinomap FTMS = FiTness Machine Service protocol
7.	1	cos102010-01va02	Handrails adjustable 150/50 ; bar length 1500 mm, locking bar for height raster 25 mm for mercury® models 150/50 cm, H: 75 ... 120 cm / W: 38 ... 104 cm
8.	1	cos102899	Extension rods for adjustable handrail D= 25 mm offer another 550 mm length to the back
9.	1	cos102560	Arm supports for handrails adjustable , forearm support with hand grip for adjustable handrails
10.	1	cos10107	Additional stop-button right , stop-button for hand grip in the arm support, right hand side
11.	1	cos30028	airwalk® ap , unweighting device dynamic up to ca. 80 kg, compressor or compressed air supply required (max. 250 kg / 551 lbs body weight), incl. chest belt size M
12.	1	cos103058	Compressor for airwalk® ap , 8 bar
13.	1	cos102342-01	Emergency stop for airwalk® ap , additional function of airwalk® ap also as fall prevention system (safety arch) with autom. treadmill belt stop
14.	1	cos100432-01	Extension sling set 60 cm for h/p/cosmos airwalk® ap, i.e. for small subjects (children) in airwalk® vest XS
15.	1	cos102785-01	Express sling/loop 18 cm , 1x express sling/loop 18 cm for extension of pulling rope
16.	1	cos10095-vest-S	Vest S for h/p/cosmos airwalk® (all models) , size S (thorax circumference: 85-92 cm), colour code red
17.	1	cos10095-vest-L	Vest L for h/p/cosmos airwalk® (all models) , size L (thorax circumference: 106-114 cm), colour code green
18.	1	cos10095-neo-S	Neoprene shorts S for h/p/cosmos airwalk® (all models) , size S (waist: 55-92 cm)
19.	1	cos10095-neo-M	Neoprene shorts M for h/p/cosmos airwalk® (all models) , size M (waist: 93-105 cm)
20.	1	cos10095-neo-L	Neoprene shorts L for h/p/cosmos airwalk® (all models) , size L (waist: 106-114 cm)
21.	1	cos104835_aw	robowalk® expander front for treadmills with airwalk® ap
22.	1	cos104836	robowalk® expander back (rear)
23.	1	cos101050-S	Leg cuff thigh S (250 - 390 mm), 1 pair
24.	1	cos101050-M	Leg cuff thigh M (350 - 510 mm), 1 pair
25.	1	cos101050-L	Leg cuff thigh L (490 - 750mm), 1 pair
26.	1	cos101051-XS	Leg cuff shank XS (140 - 270mm), 1 pair
27.	1	cos16186-02	Wheelchair ramp (L: 125 cm x W: 80 cm) enables the patients' wheelchair to be pushed onto the treadmill
28.	1	cos100770	XLR Y-splitter 2 female / 1 male / 3-pin , external-stop distributor adapter cable
29.	1	cos102522va04	Packing treadmill 150/50 , full assembled with cardboard hood (L: 230 cm / W: 109 cm / H: 169 cm)
30.	1	cos102538va02	Packing airwalk® ap , part assembled, packed part assembled on pallet with cardboard hood (L: 230 cm / W: 109 cm / H: 90 cm)
31.	1	cos15732-os	Installation Overseas mercury® med onsite at customer's facility , incl. traveling, hotel, labour costs and training
32.	1	cos100925-os	Installation Overseas airwalk® ap onsite at customer's facility , incl. traveling, hotel, labour costs and training
33.	1	cos101094	1-day application workshop , includes costs for specialist / referent. Not including flight, logistics, hotel, etc.

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CONFIGURATION MERCURY® MED: GAIT REHABILITATION PREMIUM



pos.	qty.	order number	product description
1.	1	cos31042	h/p/cosmos treadmill mercury® med running surface 150 x 50 cm, speed range 0 ... 22 km/h, elevation 0 ... 25 %, UserTerminal Touch with keyboard and touch display, integrated interface and coscom® v4 protocol
2.	1	cos101000_touch_pro	Upgrade UserTerminal Touch Pro , Upgrade of the UserTerminal Touch Basic to UserTerminal Touch Pro for professional applications and special features
3.	1	cos101000_reverseva02	Reverse treadmill belt rotation , incl. running belt 5mm & belt centering rolls, max. reverse speed: 5 km/h
4.	1	cos104173	Motor brake ; prevents the majority of belt movement at target speed = "0" (e.g. treadmill stop/pause), with exception of a few cm / inch.
5.	1	cos101000_metronome	Acoustic cueing for individually setting the cadence target
6.	1	cos101000_FTMS	Bluetooth FTMS Interface for UserTerminal Touch Pro ; user terminal Bluetooth FTMS interface for connecting e.g. software Zwift or Kinomap FTMS = FiTness Machine Service protocol
7.	1	cos101000sw_pert-V1.0	Perturbation software for sudden deceleration and acceleration of the treadmill belt speed respectively of the belt.
8.	1	cos104732_150	Handrails adjustable comfort 150/50 bar length 1500 mm, clamp for continuous adjustment 150/50 cm, H: 70 ... 114 cm / W: 47 ... 138 cm, expected to be available in Q3/2025

CONFIGURATION MERCURY® MED: GAIT REHABILITATION PREMIUM

9.	1	cos102899	Extension rods for adjustable handrail D= 25 mm offer another 550 mm length to the back
10.	1	cos102560	Arm supports for handrails adjustable , forearm support with hand grip for adjustable handrails
11.	1	cos101107	Additional stop-button right , stop-button for hand grip in the arm support, right hand side
12.	1	cos104551	Additional keyboard with magnet holder UserTerminal 10.1" Touch ; mobile remote control with 6 keys with a approx. 2 m coiled cord - with magnet holder for all handrails
13.	1	cos104733_150	Therapist seats with foot rests for both sides of the treadmill (Only for initial equipment)
14.	1	cos30028	airwalk® ap , unweighting device dynamic up to approx. 80 kg, compressor or compressed air supply required (max. 250 kg / 551 lbs body weight), incl. vest & chest belt size M
15.	1	cos103058	Compressor for airwalk® ap , 8 bar
16.	1	cos102342-01	Emergency stop for airwalk® ap , additional function of airwalk® ap also as fall prevention system (safety arch) with autom. treadmill belt stop
17.	1	cos100432-01	Extension sling set 60 cm for h/p/cosmos airwalk® ap, i.e. for small subjects (children) in airwalk® vest XS
18.	1	cos102785-01	Express sling/loop 18 cm, 1x express sling/loop 18 cm for extension of pulling rope
19.	1	cos10095-vest-S	Vest S for h/p/cosmos airwalk® (all models) , size S (thorax circumference: 85-92 cm), colour code red
20.	1	cos10095-vest-M	Vest M for h/p/cosmos airwalk® (all models) , size M (thorax circumference: 93-105 cm), colour code yellow
21.	1	cos10095-vest-L	Vest L for h/p/cosmos airwalk® (all models) , size L (thorax circumference: 106-114 cm), colour code green
22.	1	cos10095-vest-XL	Vest XL for h/p/cosmos airwalk® (all models) , size XL (thorax circumference: 116-130 cm), colour code blue
23.	1	cos10095-neo-S	Neoprene shorts S for h/p/cosmos airwalk® (all models) , size S (waist: 55-92 cm)
24.	1	cos10095-neo-M	Neoprene shorts M for h/p/cosmos airwalk® (all models) , size M (waist: 93-105 cm)
25.	1	cos10095-neo-L	Neoprene shorts L for h/p/cosmos airwalk® (all models) , size L (waist: 106-114 cm)
26.	1	cos10095-neo-XL	Neoprene shorts XL for h/p/cosmos airwalk® (all models) , size XL (waist: 115-123 cm)
27.	1	cos104835_aw	robowalk® expander front for treadmills with safety arch
28.	1	cos104836	robowalk® expander back (rear)
29.	1	cos101050-S	Leg cuff thigh S (250 - 390 mm), 1 pair
30.	1	cos101050-M	Leg cuff thigh M (350 - 510 mm), 1 pair
31.	1	cos101050-L	Leg cuff thigh L (490 - 750mm), 1 pair
32.	1	cos101051-XS	Leg cuff shank XS (140 - 270mm), 1 pair
33.	1	cos101745	robowalk® manual pulling unit with 125 cm expander rope, 1 pair of expander manual pulling units 125 cm (incl. 1 noose and 1 thigh cuff)
34.	1	cos101748-01	Universal noose robowalk®
35.	1	cos16186-02	Wheelchair ramp (L: 125 cm x W: 80 cm) enables the patients' wheelchair to be pushed onto the treadmill
36.	1	cos100990-01	zebris® FDM pressure measuring platform 2i , upgrade for mercury® running deck 150/50, without treadmill; option pressure distribution platform 111.8 x 49.5 cm, 3.432 sensors, 120 Hz, price only valid for initial fitting-out, incl. software zebris FDM for gait analysis
37.	1	cos100385d	zebris® SyncCam (camera without stand); video camera 30 Hz, synchronization cable, USB cable and power supply - without light system
38.	1	cos100385b	zebris® stand for SyncCam or SyncLightCam (mobile); mobile stand for SyncCam and SyncLightCam with integrated cable fixation
39.	1	cos100384	zebris® FDM-Stance Modul ; extra software module for stance & balance analysis for instrumented biomechanic treadmill or platform stand alone
40.	1	cos101291-01	zebris® visual stimulation upgrade for 150/50 (Rehawalk®); video projector, mounting and software for gait training through step projection on h/p/cosmos treadmill 150/50 cm
41.	1	cos101062	zebris® software-module virtual training (without monitor!) interactive gait training on a virtual forest path incl. five gait modules in different levels of difficulty for augmented feedback on the instrumented h/p/cosmos treadmill (without monitor, without stand)
42.	1	cos104588	zebris® software-Extension LiveGait® ; Real-time display of various gait parameters during walking on the treadmill. Feedback training by setting reference values
43.	1	cos104589	zebris® software-Extension 7-Zones Report ; Software extension for dividing the foot load surface area of the left and right side of the body into 7 zones
44.	1	cos14970-03	h/p/cosmos satellite PC med DELL PC, 2x 24" LCD Monitor, COL Laser printer, potential isolation transformer, h/p/cosmos PC-rack with 4 casters
45.	1	cos102397	LCD monitor TV 50" (with a small monitor stand for table) for example for SpeedLab®, gaitway® display or for the virtual training module of zebris®
46.	1	cos101624	Monitor stand mobile for LCD TV 32-60" monitor stand (without monitor!) for additional TV / monitor (max. load: 30 kg), height: 180 cm.
47.	1	cos100770	XLR Y-splitter 2 female / 1 male / 3-pin , external-stop distributor adapter cable
48.	3	cos60098010004	Service engineer system specialist and software for installation, maintenance and repairs in the factory h/p/cosmos
49.	1	cos102522va04	Packing treadmill 150/50 , full assembled with cardboard hood (L: 230 cm / W: 109 cm / H: 169 cm)
50.	1	cos102538-02va02	Packing airwalk® ap , part assembled, packed part assembled on pallet with cardboard hood
51.	1	cos15732-os	Transport / Installation mercury® med Overseas onsite at customer's facility, incl. traveling, hotel, labour costs and training
52.	1	cos100925-os	Transport / Installation airwalk® ap , Overseas onsite at customer's facility, incl. traveling, hotel, labour costs and training
53.	1	cos101094	1-day application workshop , includes costs for specialist / referent. Not including flight, logistics, hotel, etc.

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CONFIGURATION QUASAR® MED: GAIT REHABILITATION & RETURN TO SPORTS



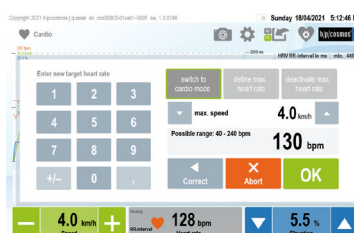
CONFIGURATION QUASAR® MED: GAIT REHABILITATION & RETURN TO SPORTS

pos.	qty.	order number	product description
1.	1	cos30003-01va02	h/p/cosmos treadmill quasar® med running surface 170 x 65 cm, speed range 0 ... 25 km/h, elevation 0 ... 28 %, UserTerminal Touch Pro with keyboard and display, integrated interface and coscom® v4 protocol
2.	1	cos101000_reverseva05	Reverse belt rotation (downhill), incl. belt centering rolls, max. reverse speed: 5 km/h, with safety arch: 10 km/h
3.	1	cos103975	Special speed 0 ... 30 km/h
4.	1	cos101000_NFC	NFC / RFID module
5.	1	cos101000_metronome	Acoustic cueing for individually setting the cadence target
6.	1	cos16586	Footboard left extra wide (speed) 170/65
7.	1	cos102288	Footboard right extra wide (speed) 170/65
8.	1	cos30028	airwalk® ap , unweighting device dynamic up to approx. 80 kg, compressor or compressed air supply required (max. 250 kg / 551 lbs body weight), incl. chest belt size M
9.	1	cos103058	Compressor for airwalk® ap , 8 bar
10.	1	cos102342-01	Emergency stop for airwalk® ap , additional function of airwalk® ap also as fall prevention system (safety arch) with autom. treadmill belt stop
11.	1	cos100432-01	Extension sling set 60 cm for h/p/cosmos airwalk® ap, i.e. for small subjects (children) in airwalk® vest XS
12.	1	cos102785-01	Express sling/loop 18 cm , 1x express sling/loop 18 cm for extension of pulling rope
13.	1	cos10095-vest-S	Vest S for h/p/cosmos airwalk® (all models) , size S (thorax circumference: 85-92 cm), colour code red
14.	1	cos10095-vest-L	Vest L for h/p/cosmos airwalk® (all models) , size L (thorax circumference: 106-114 cm), colour code green
15.	1	cos10095-neo-S	neoprene shorts for airwalk® , size S (waist: 55-92 cm)
16.	1	cos10095-neo-M	neoprene shorts for airwalk® , size M (waist: 93-105 cm)
17.	1	cos10095-neo-L	neoprene shorts for airwalk® , size L (waist: 106-114 cm)
18.	1	cos10095-neo-XL	neoprene shorts for airwalk® , size XL (waist: 115-123 cm)
19.	1	cos10177	Packing treadmill 170&190/65(SA) , packed part assembled on pallet with cardboard hood, incl. safety arch (L: 274 cm / W: 122 cm / H: 94 cm)
20.	1	cos102538va02	Packing airwalk® ap , part assembled, packed part assembled on pallet with cardboard hood (L: 230 cm / W: 109 cm / H: 90 cm)
21.	1	cos15733-os	Installation Overseas quasar® med onsite at customer's facility , incl. traveling, hotel, labour costs and training treadmill
22.	1	cos100925-os	Installation Overseas airwalk® ap onsite at customer's facility , incl. traveling, hotel, labour costs and training

E & OE. Subject to alterations without prior notice. The illustrations may show accessories and items of optional equipment which are not part of standard specification or the recommended configuration. Subject to our general terms of trade: www.hpcosmos.com



The UserTerminal touch summary screen shows all relevant data of the workout including average and max. speed, elevation, duration and heart rate as well as biomechanical indicators as step lengths and cadence.

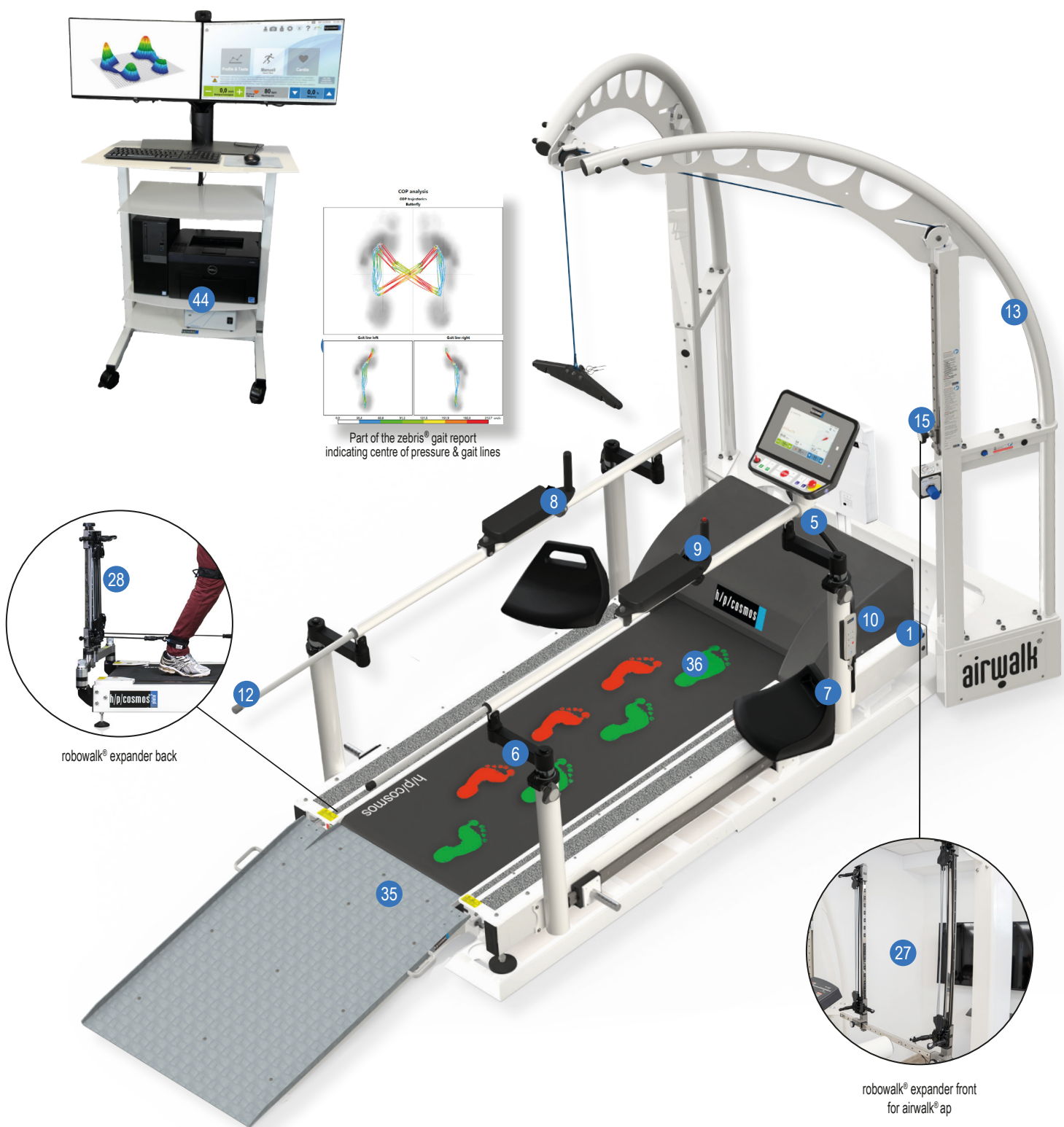


Cardio mode allows target heart rate in combination with maximum speed range definition for controlling the physical load by means of a combination of speed & elevation.



Summary report can be saved in PDF and .csv format with automatically generated informative and editable file name to the connected USB stick.

CONFIGURATION QUASAR® MED: GAIT REHABILITATION PREMIUM



pos.	qty.	order number	product description
1.	1	cos30003-01va02	h/p/cosmos treadmill quasar® med running surface 170 x 65 cm, speed range 0 ... 25 km/h, elevation 0 ... 28 %, UserTerminal Touch Pro with keyboard and display, integrated interface and coscom® v4 protocol
2.	1	cos101000_reverseva05	Reverse belt rotation (downhill) , incl. belt centering rolls, max. reverse speed: 5 km/h, with safety arch: 10 km/h
3.	1	cos101000_brake	Motor brake ; prevents the majority of belt movement at target speed = "0" (e.g. treadmill stop/pause), with exception of a few cm / inch.
4.	1	cos101000sw_pert-V1.0	Perturbation software for sudden deceleration and acceleration of the treadmill belt speed respectively of the belt.
5.	1	cos101000_metronome	Acoustic cueing for individually setting the cadence target

CONFIGURATION QUASAR® MED: GAIT REHABILITATION PREMIUM

6.	1	cos104732_170	Comfort-handrails adjustable in height and width bar length 1700 mm, clamp for continuous adjustment 170/65 cm, H: 70 ... 114 cm / W: 62 ... 153 cm, expected to be available in Q3/2025
7.	1	cos104733_170	Therapist seats 170/65 , adjustable therapist seats and footrests for manual locomotion therapy. Expected to be available in Q2 / 2025
8.	1	cos102560	Arm supports for handrails adjustable , Forearm support with hand grip for adjustable handrails
9.	1	cos10107	Additional stop-button right , stop-button for hand grip in the arm support, right hand side
10.	1	cos100815-01	Additional keyboard with magnet holder , mobile remote control with 6 keys with a approx. 2 m coiled cord - with magnet holder for all handrails
11.	1	cos100816	Extension cable for additional keyboard , Spiral cable extendable to 2 meters
12.	1	cos102899	Extension rods for adjustable handrail D= 25 mm offer another 550 mm length to the back
13.	1	cos30028	airwalk® ap , unweighting device dynamic up to approx. 80 kg, compressor or compressed air supply required (max. 250 kg / 551 lbs body weight), incl. chest belt size M
14.	1	cos103058	Compressor for airwalk® ap , 8 bar
15.	1	cos102342-01	Emergency stop for airwalk® ap , additional function of airwalk® ap also as fall prevention system (safety arch) with autom. treadmill belt stop
16.	1	cos100432-01	Extension sling set 60 cm for h/p/cosmos airwalk® ap, i.e. for small subjects (children) in airwalk® vest XS
17.	1	cos102785-01	Express sling/loop 18 cm , 1x express sling/loop 18 cm for extension of pulling rope
18.	1	cos10095-vest-S	Vest S for h/p/cosmos airwalk® (all models) , size S (thorax circumference: 85-92 cm), colour code red
19.	1	cos10095-vest-M	Vest M for h/p/cosmos airwalk® (all models) , size M (thorax circumference: 93-105 cm), colour code yellow
20.	1	cos10095-vest-L	Vest L for h/p/cosmos airwalk® (all models) , size L (thorax circumference: 106-114 cm), colour code green
21.	1	cos10095-vest-XL	Vest XL for h/p/cosmos airwalk® (all models) , size XL (thorax circumference: 116-130 cm), colour code blue
22.	1	cos10095-neo-S	neoprene shorts for airwalk® , size S (waist: 55-92 cm)
23.	1	cos10095-neo-M	neoprene shorts for airwalk® , size M (waist: 93-105 cm)
24.	1	cos10095-neo-L	neoprene shorts for airwalk® , size L (waist: 106-114 cm)
25.	1	cos10095-neo-XL	neoprene shorts for airwalk® , size XL (waist: 115-123 cm)
26.	1	cos105135	airwalk® ap mount for TouchPro , only in conjunction with the comfort handrails cos104732_xxx
27.	1	cos104835_aw	robowalk® expander front for treadmills with safety arch
28.	1	cos104836	robowalk® expander back (rear)
29.	1	cos101050-S	Leg cuff thigh S (250 - 390 mm), 1 pair
30.	1	cos101050-M	Leg cuff thigh M (350 - 510 mm), 1 pair
31.	1	cos101050-L	Leg cuff thigh L (490 - 750mm), 1 pair
32.	1	cos101051-XS	Leg cuff shank XS (140 - 270mm), 1 pair
33.	1	cos101745	robowalk® manual pulling unit with 125 cm expander rope, 1 pair of expander manual pulling units 125 cm (incl. 1 noose and 1 thigh cuff)
34.	1	cos101748-01	Universal noose robowalk®
35.	1	cos16186-02	Wheelchair ramp (L: 125 cm x W: 80 cm) enables the patients' wheelchair to be pushed onto the treadmill
36.	1	cos102292	zebris® FDM pressure measuring platform 2i , upgrade for running deck 170/65, without treadmill; option pressure distribution platform 132.1 x 55.9 cm, 4.576 sensors, 120 Hz, price only valid for initial fitting-out, incl. software zebris FDM for gait analysis
37.	1	cos100385i	zebris® SyncCam HS (camera without stand); video camera 60 fps Full HD (1920x1080), 90 fps HD (1920x720), 120fps VGA (640x480)
38.	1	cos100385b	zebris® stand for SyncCam or SyncLightCam (mobile); mobile stand for SyncCam and SyncLightCam with integrated cable fixation
39.	1	cos100384	zebris® FDM-Stance Modul ; extra software module for stance & balance analysis for instrumented biomechanic treadmill or platform stand alone
40.	1	cos101291-01	zebris® visual stimulation upgrade for 170/65 (Rehawalk®); video projector, mounting and software for gait training through step projection on h/p/cosmos treadmill 170/65 cm
41.	1	cos101062	zebris® software-module virtual training (without monitor!) interactive gait training on a virtual forest path incl. five gait modules in different levels of difficulty for augmented feedback on the instrumented h/p/cosmos treadmill (without monitor, without stand)
42.	1	cos104588	zebris® software-Extension LiveGait® ; Real-time display of various gait parameters during walking on the treadmill. Feedback training by setting reference values
43.	1	cos104589	zebris® software-Extension 7-Zones Report ; Software extension for dividing the foot load surface area of the left and right side of the body into 7 zones
44.	1	cos14970-03	h/p/cosmos satellite PC med DELL PC, 2x 24" LCD Monitor, COL Laser printer, potential isolation transformer, h/p/cosmos PC-rack with 4 casters
45.	1	cos102397	LCD monitor TV 50" (with a small monitor stand for table) for example for SpeedLab®, gaitway® display or for the virtual training module of zebris®
46.	1	cos101624	Monitor stand mobile for LCD TV 32-60" monitor stand (without monitor!) for additional TV / monitor (max. load: 30 kg), height: 180 cm.
47.	1	cos100770	XLR Y-splitter 2 female / 1 male / 3-pin , external-stop distributor adapter cable
48.	3	cos60098010004	Service engineer system specialist and software for installation, maintenance and repairs in the factory h/p/cosmos
49.	1	cos10177	Packing treadmill 170&190/65(SA) , packed part assembled on pallet with cardboard hood, incl. safety arch (L: 274 cm / W: 122 cm / H: 94 cm)
50.	1	cos102538va02	Packing airwalk® ap , part assembled, packed part assembled on pallet with cardboard hood (L: 230 cm / W: 109 cm / H: 90 cm)
51.	1	cos15733-os	Installation Overseas quasar® med onsite at customer's facility , incl. traveling, hotel, labour costs and training treadmill
52.	1	cos100925-os	Installation Overseas airwalk® ap onsite at customer's facility , incl. traveling, hotel, labour costs and training
53.	1	cos101094	1-day application workshop , includes costs for specialist / referent. Not including flight, logistics, hotel, etc.

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treadmill	pluto® med
manufacturer:	h/p/cosmos sports & medical gmbh / Germany
country of origin:	Germany
EUDAMED SRN:	DE-MF-000006147
order number:	cos31022
UDI-DI	40505880036616 / GS1
Basic UDI-DI:	4050588cos31000R4
product family:	treadmill h/p/cosmos 150/50 G7
EMDN Code:	Z129006: Treadmills for physiotherapy and/or diagnostic uses
UMDNS Code:	14-141 Running Machine
GMDN Code:	33015 EXERCISER, TREADMILL, LINE-POWERED
applications:	endurance training walking and running stress device for performance testing, gait analysis and gait training
control:	UserTerminal with keyboard and touch display, alternatively via integrated interface coscom® v4
running deck:	L x W: 150 x 50 cm (4' 11.1" x 1' 7.6") access height: 23 cm (9.1") - running belt with slip resistant surface - max. permissible load: 250 kg (551 lbs) - max. permissible load: 300 kg (660 lbs) at extra charge
speed range:	0.0 ... 22.0 km/h (0.0 ... 6.1 m/s) (0.0 ... 13.6 mph)
acceleration:	7 acceleration / deceleration levels (0.053 ... 2.315 m/s²) levels 1 to 4 enabled, levels 5 to 7 at extra charge
elevation:	0 ... 25 % (0 ... 14.0°) motorized adjustment (-25 % ... +25 % when using optional reverse belt rotation)
running direction:	reverse belt rotation at extra charge without fall prevention the max. speed for reverse belt rotation is limited to 5 km/h (3.1 mph)
drive motor:	2.2 kW (3 HP) 3-phase AC motor, maintenance free and brushless For high-performance applications we recommend models with a 3-phase 3x400 Volt power supply and a running surface min. 190/65 cm
power transmission:	frequency inverter, poly-V-belt, very quiet operation
safety systems:	CE 0123; medical device regulation MDR (EU) 2017/745, machinery regulation (EU) 2023/1230; IEC 60601-1; EN 60601-1-2 (EMC tested); ISO 20957-1; ISO 20957-6; EN 14971; emergency-stop mushroom push button (drives power off) emergency-stop with pull-cord and clip, potential equalization bolt; transformer for potential-isolation from the mains
degree of protection:	appliance class I ⚡ / type B ⚡ / IP 20
classification:	medical device risk class IIb according to MDR, active therapeutic medical device and active diagnostic medical device
usage class:	S, I according to ISO 20957-1
accuracy class:	A (high accuracy) according to ISO 20957-6
earth leakage current:	< 0.2 mA
ambient condition:	temperature: +5 ... +40 °C (-30 ... +50 °C on request) humidity: 0 ... 85 % (up to 100 % on request) air pressure: 700 ... 1,060 hPa; 3,000 m (~10,000 ft) max altitude without pressurization
display (resolution):	25.9 cm / 10.1" (1280x800), color touch display
parameter: (It-devices via PC)	speed, time, elevation, distance, heart rate, heart rate variability energy consumption, altitude, power, pace, METs, diagram view of heart rate and load parameter, parameter export to USB
units:	metric / imperial
heart rate monitoring:	heart rate receiver included, BLE - Bluetooth® automatic control of speed and elevation according to programmed target heart rate („cardio mode")
interfaces:	LAN / RJ45, RS232, USB RFID / NFC Reader (optional at extra charge) Bluetooth® (optional at extra charge)
programs: (It-devices via PC)	programs / profiles (predefined) - exercise profiles (scalable) - many test profiles (UKK Walktest, Conconi, Graded test, Gardner, Naughton, Ellestad, Cooper, Balke, Bruce, etc.) - freely definable programs also for further processing

PC software (incl.):	h/p/cosmos para control® for display & remote control;
accessories (incl.):	instruction for use on USB stick, service kit, 5 m LAN cable, 5 m PE-cable
frame color:	pure white RAL 9010 (powder coated)
handrails:	steel tube handrails Ø 60 mm on both sides, over min. 1/3 of treadmill length, other handrail designs optional at extra charge
voltage supply:	200 ... 240 Volt AC 1~/N/PE 50/60 Hz 16 A fuse dedicated circuit, line and protection
dimensions:	L x W x H: 210 x 86 x 139 cm (6' 10.7" x 2' 9.86" x 4' 1.67")
mass of device:	approx. 240 kg (530 lbs)
packing size:	approx. L x W x H: 230 x 110 x 90 cm (7' 6.6" x 3' 7.3" x 2' 11.4") depending on accessories and requirements
mass of packaging:	approx. 75 ... 265 kg (165 ... 585 lbs) depending on accessories and requirements



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Optionally available at extra charge are special frame colours, other handrail designs, special voltage supply, other options and accessories. Weight and package specifications can deviate according to options, accessories packing and way of transport. Please consider the natural and physical performance limitations of the single phase 230 volt power supply. The single phase 230 volt power supply is sufficient up to normal fitness or therapy applications. For all special high performance applications (speed running, controlled jump-ons, sidesteps, heavy subjects at higher speed, extreme elevations, etc.), we recommend models with a 3-phase, 3x400 volt power supply (for example model h/p/cosmos quasar med 3p, pulsar 3p, venus or saturn).

Warning! Installation, commissioning, instruction, maintenance and repair work only to be conducted by h/p/cosmos trained and authorised personnel. For treadmills with oversized deck (width >65cm), for children, special applications, without sufficient safety space behind the treadmill, for subjects and / or patients with health or other limitations (e.g. visual impairment, etc.), for running at high speed and / or for all individuals, where a fall triggers a dangerous risk of injury or death (e.g. newly operated hip patients, invasive probes, etc.), a fall prevention system is obligatory (e.g. safety arch with chest belt and harness or a weight support system). For more information see the instructions for use. Safety space behind the treadmill: min. L: 2 m (6ft 6.74") x treadmill width. Children are only allowed to be on the treadmill, if under permanent supervision and secured by a fall prevention system.



SPECIFICATIONS MERCURY® MED

treadmill	mercury® med
manufacturer:	h/p/cosmos sports & medical gmbh / Germany
country of origin:	Germany
EUDAMED SRN:	DE-MF-000006147
order number:	cos31042
UDI-DI	40505880037460 / GS1
Basic UDI-DI:	4050588cos31000R4
product family:	treadmill h/p/cosmos 150/50 G7
EMDN Code:	Z129006: Treadmills for physiotherapy and/or diagnostic uses
UMDNS Code:	14-141 Running Machine
GMDN Code:	33015 EXERCISER, TREADMILL, LINE-POWERED
applications:	endurance training walking and running, stress device for performance testing, gait analysis and gait training
control:	UserTerminal with keyboard and touch display, alternatively via integrated interface coscom® v4
running deck:	L x W: 150 x 50 cm (4' 11.1" x 1' 7.6") access height: 23 cm (9.1") - shock load reduction for the joints - running belt with slip resistant surface - reinforced running belt with profiled surface, 5 mm thick - max. permissible load: 300 kg (660 lbs)
speed range:	0.0 ... 22.0 km/h (0.0 ... 6.1 m/s) (0.0 ... 13.6 mph)
acceleration:	7 acceleration / deceleration levels (0.053 ... 2.315 m/s²) levels 1 to 4 enabled, levels 5 to 7 at extra charge
elevation:	0 ... 25 % (0 ... 14.0°) motorized adjustment (-25 % ... +25 % when using optional reverse belt rotation)
running direction:	reverse belt rotation at extra charge, without fall prevention the max. speed for reverse belt rotation is limited to 5 km/h (3.1 mph)
drive motor:	2.2 kW (3 HP) 3-phase AC motor, maintenance free and brushless, 20 years warranty on main drive motor. For high-performance applications we recommend models with a 3-phase 3x400 Volt power supply and a running surface min. 190/65 cm
power transmission:	frequency inverter, poly-V-belt, very quiet operation
safety systems:	CE 0123; medical device regulation MDR (EU) 2017/745, machinery regulation (EU) 2023/1230; IEC 60601-1; EN 60601-1-2 (EMC tested); ISO 20957-1; ISO 20957-6; EN 14971; emergency-stop mushroom push button (drives power off) emergency-stop with pull-cord and clip, potential equalization bolt; transformer for potential-isolation from the mains
degree of protection:	appliance class I  / type B  / IP 20
classification:	medical device risk class IIb according to MDR, active therapeutic medical device and active diagnostic medical device
usage class:	S, I according to ISO 20957-1
accuracy class:	A (high accuracy) according to ISO 20957-6
earth leakage current:	< 0.2 mA
ambient condition:	temperature: +5 ... +40 °C (-30 ... +50 °C on request) humidity: 0 ... 85 % (up to 100 % on request) air pressure: 700 ... 1,060 hPa; 3,000 m (~10,000 ft) max altitude without pressurization
display (resolution):	25.9 cm / 10.1" (1280x800), color touch display
parameter: (It-devices via PC)	speed, time, elevation, distance, heart rate, heart rate variability energy consumption, altitude, power, pace, METs, diagram view of heart rate and load parameter, parameter export to USB
units:	metric / imperial
heart rate monitoring:	heart rate receiver included, BLE - Bluetooth® automatic control of speed and elevation according to programmed target heart rate („cardio mode“)
interfaces:	LAN / RJ45, RS232, USB RFID / NFC Reader (optional at extra charge) Bluetooth® (optional at extra charge)
programs: (It-devices via PC)	programs / profiles (predefined) - exercise profiles (scalable) - many test profiles (UKK Walktest, Conconi, Graded test, Gardner, Naughton, Ellestad, Cooper, Balke, Bruce, etc.) - freely definable programs also for further processing

PC software (incl.):	h/p/cosmos para control® for display & remote control;
accessories (incl.):	instruction for use on USB stick, service kit, 5 m LAN cable, 5 m PE-cable
frame color:	pure white RAL 9010 (powder coated)
handrails:	steel tube handrails Ø 60 mm on both sides, over min. 1/3 of treadmill length, other handrail designs optional at extra charge
voltage supply:	200 ... 240 Volt AC 1~/N/PE 50/60 Hz 16 A fuse dedicated circuit, line and protection
dimensions:	L x W x H: 210 x 93 x 149 cm (6' 10.7" x 3' 0.61" x 4' 10.66")
mass of device:	approx. 240 kg (530 lbs)
packing size:	approx. L x W x H: 230 x 110 x 90 cm (7' 6.6" x 3' 7.3" x 2' 11.4") depending on accessories and requirements
mass of packaging:	approx. 75 ... 265 kg (165 ... 585 lbs) depending on accessories and requirements

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Optionally available at extra charge are special frame colours, other handrail designs, special voltage supply, other options and accessories. Weight and package specifications can deviate according to options, accessories packing and way of transport. Please consider the natural and physical performance limitations of the single phase 230 volt power supply. The single phase 230 volt power supply is sufficient up to normal fitness or therapy applications. For all special high performance applications (speed running, controlled jump-ons, sidesteps, heavy subjects at higher speed, extreme elevations, etc.), we recommend models with a 3-phase, 3x400 volt power supply (for example model h/p/cosmos quasar med 3p, pulsar 3p, venus or saturn).

Warning! Installation, commissioning, instruction, maintenance and repair work only to be conducted by h/p/cosmos trained and authorised personnel. For treadmills with oversized deck (width >65cm), for children, special applications, without sufficient safety space behind the treadmill, for subjects and / or patients with health or other limitations (e.g. visual impairment, etc.), for running at high speed and / or for all individuals, where a fall triggers a dangerous risk of injury or death (e.g. newly operated hip patients, invasive probes, etc.), a fall prevention system is obligatory (e.g. safety arch with chest belt and harness or a weight support system). For more information see the instructions for use. Safety space behind the treadmill: min. L: 2 m (6ft 6.74") x treadmill width. Children are only allowed to be on the treadmill, if under permanent supervision and secured by a fall prevention system.



SPECIFICATIONS QUASAR® MED

model name:	quasar® med
manufacturer:	h/p/cosmos sports & medical gmbh / Germany
country of origin:	Germany
EUDAMED SRN:	DE-MF-000006147
order number:	cos30003-01va02
UDI-DI:	40505880029540 / GS1
Basic UDI-DI:	4050588cos30003-015X
product family:	treadmill h/p/cosmos 170-190/65 MCU6
EMDN Code:	Z129006: Treadmills for physiotherapy and/or diagnostic uses
UMDNS Code:	14-141 Running Machine
GMDN Code:	33015 EXERCISER, TREADMILL, LINE-POWERED
applications:	endurance training walking and running, stress device for performance testing, gait analysis and gait training
control:	via UserTerminal Touch Pro with keyboard, touch display and Windows® 10 operating system, integrated interface coscom® v4
running surface:	L: 170 cm (5ft 6.9") B: 65 cm (2ft 1.6") access height: 23 cm (9.06") - shock load reduction for the joints - running belt with slip resistant surface - reinforced running belt with profiled surface, 5 mm thick - max. permissible load: 300 kg (660 lbs)
speed range:	0 ... 25.0 km/h (0 ... 6.9 m/s) (0 ... 15.5 mph) special speed available at extra charge: 0 ... 10 km/h (0 ... 6.2 mph) 0 ... 30 km/h (0 ... 18.6 mph)
acceleration:	7 acceleration / deceleration levels between 131 s and 3 s from 0 to max. or from max. to 0; equals 0.053 ... 2.315 m/s² programmable via para control® PC software
elevation:	0 % ... +28.0 % (-15.6° ... 15.6°) motorized adjustment, (-28 % ... +28 % when using reverse belt rotation)
running direction:	reverse belt rotation at extra charge, max. permissible reverse speed 5 km/h (3.1 mph) if no safety-harness with fall-stop prevention system is used.
motor systems:	3.3 kW (4.5 HP) 3-phase AC motor, maintenance free and brushless; 20 years warranty on main drive motor. For high-performance applications, we recommend models with a 3-phase 3x400 volt power supply and a running surface min. 190/65cm.
power transmission:	frequency inverter, poly-V-belt, very quiet operation
safety:	CE 0123; medical device regulation MDR (EU) 2017/745; machinery directive 2006/42/EC; IEC 60601-1; EN 60601-1-2 (EMC tested); EN 14971; ISO 20957-1; EN 957-6; emergency-stop mushroom push button (for drive system power-off), emergency-stop switch (safety lanyard with actuator, pull-cord and clip); potential equalization bolt; transformer for potential-isolation from the mains.
degree of protection:	appliance class I (⊕) / type B ⚡ / IP 20
classification:	medical device risk class IIb according to MDR, active therapeutic medical device and active diagnostic medical device
usage class:	S, I according to ISO 20957-1
accuracy class:	A (high accuracy) according to EN 957-6
earth leakage current:	≤ 0.2 mA
ambient condition:	temperature: +10 ... +40 °C (-30 ... +50 °C on request) humidity: 20 ... 85% (up to 100 % on request) air pressure: 700 ... 1060 hPa; 3,000 m (~10,000 ft) max. altitude without pressurization
display (resolutions) paramter:	25.9 cm/10.1" (1280x800), color touch display parameter: speed, time, elevation, distance, METS, energy consumption, altitude, power, pace, heart rate, heart rate variability (digital and scatter diagram), diagram view of heart rate and load parameter parameter export to .pdf and .csv tables to USB
resolution:	1 decimal place
units:	metric / imperial

heart rate monitoring:	heart rate receiver included (Bluetooth®), automatic control of speed and elevation according to programmed target heart rate ("cardio mode")
digital interface:	4x USB 2.0 (1x USB 3.0 internal) 1x LAN / RJ45, 1x RS232, 1x connection for safety arch fall stop RFID / NFC® Reader (optional at extra charge) Bluetooth®, WiFi / WLAN (optional at extra charge)
programs:	18 programs / profiles (predefined) - 8 exercise profiles (scalable) - 10 test profiles (UKK 2 km Walktest, Conconi, Graded test, Naughton, Ellestad, Cooper, Balke, etc.) - min. 100 free definable programs import / export of profiles from / to USB stick also for further processing
PC software (incl.):	h/p/cosmos para control® for display & remote control
accessory (incl.):	instruction for use on USB stick, drinking bottle holder, service box, special oil, 5 m LAN cable, 5 m PE potential equalization cable POLAR® H10 heart rate chest belt (Bluetooth®)
colour of frame:	pure white RAL 9010 (powder coated)
handrails:	steel tube handrails Ø 60 mm on both sides, over min. 1/3 of treadmill length with front-handrail crossbar other handrail designs at extra charge
power supply:	230 Volt AC 1~N/PE 50/60 Hz 15 ... 16A fuse; dedicated circuit, line and protection;
dimensions:	L x W x H: 230 cm x 105 x 149 cm (7ft 6.6" x 3ft 5.3" x 4ft 10.7")
mass of device:	approx. 335 kg (740 lbs)
packing size:	approx. 275 x 125 x 95 cm (9' 0.3" x 4' 1.2" x 3' 1.4") depending on accessories and requirements
mass of packaging:	75 ... 265 kg (165 ... 585 lbs) depending on accessories and requirements

E&OE. Subject to alterations without prior notice.

Optionally available at extra charge are special frame colours, other handrail designs, special voltage supply, other options and accessories. Weight and package specifications can deviate according to options, accessories packing and way of transport. Please consider the natural and physical performance limitations of the single phase 230 volt power supply. The single phase 230 volt power supply is sufficient up to normal fitness or therapy applications. For all special high performance applications (speed running, controlled jump-ons, sidesteps, heavy subjects at higher speed, extreme elevations, etc.), we recommend models with a 3-phase, 3x400 volt power supply (for example model h/p/cosmos quasar med 3p, pulsar 3p, venus or saturn).

Warning! Installation, commissioning, instruction, maintenance and repair work only to be conducted by h/p/cosmos trained and authorised personnel. For treadmills with oversized deck (width >65cm), for children, special applications, without sufficient safety space behind the treadmill, for subjects and / or patients with health or other limitations (e.g. visual impairment, etc.), for running at high speed and / or for all individuals, where a fall triggers a dangerous risk of injury or death (e.g. newly operated hip patients, invasive probes, etc.), a fall prevention system is obligatory (e.g. safety arch with chest belt and harness or a weight support system). For more information see the instructions for use. Safety space behind the treadmill: min. L: 2 m (6ft 6.74") x treadmill width. Children are only allowed to be on the treadmill, if under permanent supervision and secured by a fall prevention system.



SPECIFICATIONS AIRWALK® AP

model name:	h/p/cosmos airwalk® ap
manufacturer:	h/p/cosmos sports & medical gmbh / Germany
country of origin:	Germany
EUDAMED SRN:	DE-MF-000006147
order number:	cos30028
UDI-DI	40505880023050 / GS1
Basic UDI-DI:	4050588cos30028RK / GS1
product family:	body weight support device
EMDN Code:	Z120602, Y050201
UMDNS Code:	11-623
GMDN Code:	58876
applications:	body weight support (during treadmill therapy/training) fall protection (during treadmill therapy/training) unweighted and/or secured balance training unweighted and/or secured functional and gait training overspeed/hyperspeed and excess frequency training
control:	pneumatic valve with rotary knob
max. body weight:	250 kg (551 lbs) valid for frame and rope textiles such as vest and shorts excluded
max. body height:	200 cm (6,5 ft.) (standard) 225 cm (7,4 ft.) (optionally at extra charge) possible restrictions with treadmill inclination >10%
body weight support:	dynamic, continuously adjustable at 6 bar: max. 50 kg (110 lbs) at 8 bar: max. 70 kg (150 lbs) at 10 bar: max. 90 kg (200 lbs) optionally at extra charge at 8 bar: max. 120 kg (265 lbs) vertical amplitude approx. 70 cm (2.3 ft.) max. rotation 1 x 360°
safety systems:	CE medical device regulation (EU) 2017/745; machinery directive 2006/42/EG; ISO 20957-1; EN 14971; EN ISO 13485
classification:	medical device risk class I according to MDR, active therapeutic medical device
usage class:	S, I according to ISO 20957-1
ambient conditions:	temperature: +10 ... +30 °C; humidity: 30 ... 75 %; air pressure: 700 ... 1060 hPa
display:	analog manometer on device (standard)
resolution:	approx. 5 kg (10 lbs)
accessories (incl.)	instructions for use, 1 unweighting vest cos10095-vest-M (size M, thorax circumference 93 ... 105 cm) 1 safety harness cos14903-M (size M, chest circumference 85 ... 115 cm) further sizes XXS ... XL at extra charge neoprene pants size. S, M, L at extra charge [cos10095-neo] 2 special carabiners for emergency release; extension slings (2x 10 cm, 2x 18 cm, 2x 45 cm) and carabiners for adaption to body height
compatibility:	h/p/cosmos treadmills pluto®, mercury®, locomotion®, quasar®, pulsar® external devices only with written confirmation by h/p/cosmos treadmill not within scope of delivery
frame color:	standard: pure white RAL 9010 (powder coated)
comp. air supply:	coupling plug acc. to ISO4414
size of frame:	L: 236 ... 276 cm (7.7 ... 9.1 ft.) (depending on treadmill) W: 177 cm (5.8 ft.) H: 273 cm (9.0 ft.) (standard) individual height (e.g. 248 cm or 298 cm) optionally at extra charge
net weight:	approx. 310 kg (683 lbs)
optionally available:	compressor 0 ... 8 bar (0 ... 116 psi) (cos103058) attention: 8 bar pressure correspond to max. 70 kg support compressor 0 ... 10 bar (0 ... 145 psi) (cos103016) 10 bar compressor incl. soundproofing hood

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Weight and dimensions may differ depending on accessories.



Alternative: connection to existing compressed air system with 8 ... 10 bar.

Furthermore optionally available at extra charge: emergency stop for running belt of an h/p/cosmos treadmill, pneumatic spring mode, robowalk expander, max. body weight support 160 / 240 kg (353 / 529 lbs), special frame colours, other options and accessories.

Warning! Installation, commissioning, instruction, maintenance and repair work only to be conducted by h/p/cosmos trained and authorised personnel. Inspect the rope (cos 102317) at least once a month visually for wear or damage. Rope has to be replaced annually or even earlier at first sign of wear or damage. For any application where falling might cause an unacceptable risk (e.g. newly operated hip patients, invasive probes, osteoporosis, etc.) the subject has to be secured by a safety harness [cos14903] additionally. For more information see the instructions for use.



SPECIFICATIONS PLUTO® EF MED 900

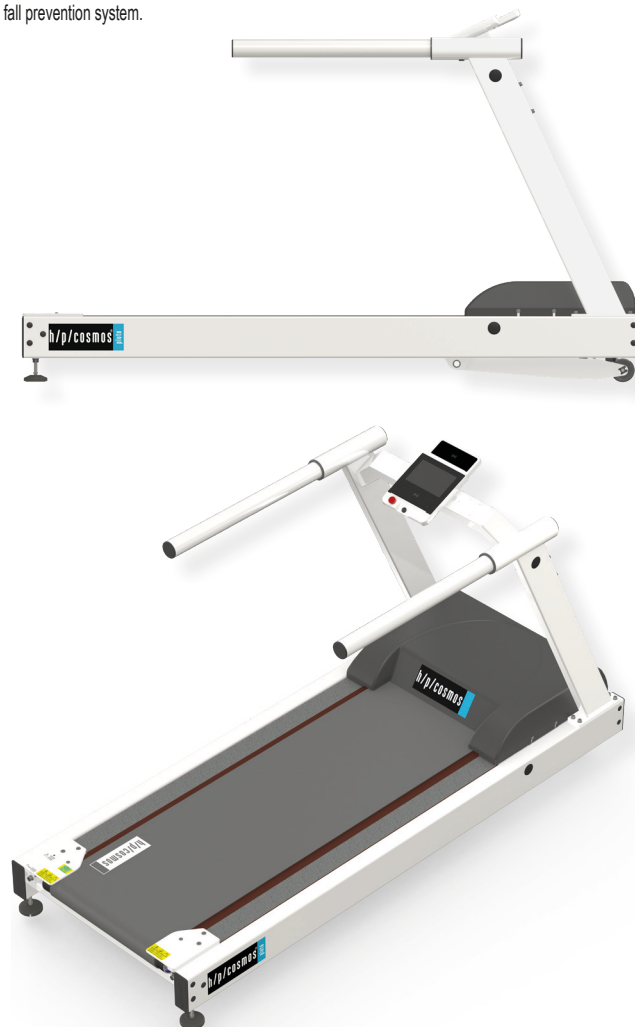
treadmill	pluto® ef med
manufacturer:	h/p/cosmos sports & medical gmbh / Germany
country of origin:	Germany
EUDAMED SRN:	DE-MF-000006147
order number:	cos31012
UDI-DI	40505880036234 / GS1
Basic UDI-DI:	4050588cos31000R4
product family:	treadmill h/p/cosmos 150/50 G7
EMDN Code:	Z129006: Treadmills for physiotherapy and/or diagnostic uses
UMDNS Code:	14-141 Running Machine
GMDN Code:	33015 EXERCISER, TREADMILL, LINE-POWERED
applications:	endurance training walking and running, stress device for performance testing, gait analysis and gait training
control:	UserTerminal with touch display, alternatively via integrated interface coscom® v4
running deck:	L x W: 150 x 50 cm (4' 11.1" x 1' 7.6") access height: 23 cm (9.1") - running belt with slip resistant surface - max. permissible load: 250 kg (551 lbs) - max. permissible load: 300 kg (660 lbs) at extra charge
speed range:	0.0 ... 22.0 km/h (0.0 ... 6.1 m/s) (0.0 ... 13.6 mph)
acceleration:	1 acceleration / deceleration level
elevation:	0 ... 25 % (0 ... 14.0°) motorized adjustment (-25 % ... +25 % when using optional reverse belt rotation)
running direction:	reverse belt rotation at extra charge without fall prevention the max. speed for reverse belt rotation is limited to 5 km/h (3.1 mph)
drive motor:	2.2 kW (3 HP) 3-phase AC motor, maintenance free and brushless For high-performance applications we recommend models with a 3-phase 3x400 Volt power supply and a running surface min. 190/65 cm
power transmission:	frequency inverter, poly-V-belt, very quiet operation
safety systems:	CE 0123; medical device regulation MDR (EU) 2017/745, machinery regulation (EU) 2023/1230; IEC 60601-1; EN 60601-1-2 (EMC tested); ISO 20957-1; ISO 20957-6; EN 14971; emergency-stop mushroom push button (drives power off) emergency-stop with pull-cord and clip, potential equalization bolt; transformer for potential-isolation from the mains
degree of protection:	appliance class I  / type B  / IP 20
classification:	medical device risk class IIb according to MDR, active therapeutic medical device and active diagnostic medical device
usage class:	S, I according to ISO 20957-1
accuracy class:	A (high accuracy) according to ISO 20957-6
earth leakage current:	< 0.2 mA
ambient condition:	temperature: +5 ... +40 °C (-30 ... +50 °C on request) humidity: 0 ... 85 % (up to 100 % on request) air pressure: 700 ... 1,060 hPa; 3,000 m (~10,000 ft) max altitude without pressurization
display (resolution):	7" TFT capacitive color touch display
parameter: (It-devices via PC)	speed, time, elevation, distance, heart rate, heart rate variability
units:	metric
heart rate monitoring:	heart rate receiver included, 5 kHz + BLE (Bluetooth)® automatic control of speed and elevation according to programmed target heart rate ("cardio mode")
interfaces:	via optional "connect package" RFID / NFC Reader (optional at extra charge) Bluetooth® (optional at extra charge)
programs: (It-devices via PC)	Standard: Quick, Time, Pulse ("Cardio Mode") optional via „program package“ Watt sensitive, Therapy, Interval, K-Cal, Hills, Distance
PC software (incl.):	h/p/cosmos para control® for display & remote control;
accessories (incl.):	instruction for use on USB stick, service kit, 5 m LAN cable, 5 m PE-cable
frame color:	pure white RAL 9010 (powder coated)

handrails:	steel tube handrails Ø 60 mm on both sides, over min. 1/3 of treadmill length, other handrail designs optional at extra charge
voltage supply:	200 ... 240 Volt AC 1~/N/PE 50/60 Hz 16 A fuse dedicated circuit, line and protection
dimensions:	L x W x H: 210 x 86 x 129 cm (6' 10.7" x 2' 9.86" x 4' 1.28")
mass of device:	approx. 240 kg (530 lbs)
packing size:	approx. L x W x H: 230 x 110 x 90 cm (7' 6.6" x 3' 7.3" x 2' 11.4") depending on accessories and requirements
mass of packaging:	approx. 75 ... 265 kg (165 ... 585 lbs) depending on accessories and requirements
mass of device:	device approx. 240 kg (530 lbs)
mass of packaging:	75 ... 265 kg (165 ... 585 lbs) depending on requirement

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Weight and dimensions may differ depending on accessories.

Optionally available at extra charge are special frame colours, other handrail designs, special voltage supply, other options and accessories. Weight and package specifications can deviate according to options, accessories packing and way of transport. E&OE. Subject to alterations without prior notice. Please consider the natural and physical performance limitations of the single phase 230 volt power supply. The single phase 230 volt power supply is sufficient up to normal fitness or therapy applications. For all special high performance applications (speed running, controlled jump-ons, sidesteps, heavy subjects at higher speed, extreme elevations, etc.), we recommend models with a 3-phase, 3x400 volt power supply ((for example model h/p/cosmos quasar® med 3p, pulsar® 3p, venus® or saturn®).

Warning! Installation, commissioning, instruction, maintenance and repair work only to be conducted by h/p/cosmos trained and authorized personnel. For treadmills with oversized deck (width >65cm), for children, special applications, without sufficient safety space behind the treadmill, for subjects and / or patients with health or other limitations (e.g. visual impairment, etc.), for running at high speed and / or for all individuals, where a fall triggers a dangerous risk of injury or death (e.g. newly operated hip patients, invasive probes, etc.), a fall prevention system is obligatory (e.g. safety arch with chest belt and harness or a weight support system). For more information see the instructions for use. Safety space behind the treadmill: min. L: 2 m (6ft 6.74") x treadmill width. Children are only allowed to be on the treadmill, if under permanent supervision and secured by a fall prevention system.



bike-ergometer	torqualizer® cycle ef med 900	torqualizer® cycle ef 900
manufacturer:	emotion fitness GmbH & Co. KG / Germany	emotion fitness GmbH & Co. KG / Germany
order number:	cos30021ef-med900	cos30021ef-900
applications:	endurance training cycling, stress device for performance testing	endurance training cycling, stress device for performance testing
functions:	7" TFT – capacitive touch display, high resolution coloured display with Bio-Feedback; easy step-through; easy to handle; horizontally and vertically adjustable saddle; Polar® - auto connection system	7" TFT – capacitive touch display, high resolution coloured display with Bio-Feedback; easy step-through; easy to handle; horizontally and vertically adjustable saddle; Polar® - auto connection system
max. user weight:	150 kg / 330 lbs (optional 200 kg / 440 lbs available at extra charge)	150 kg / 330 lbs (optional 200 kg / 440 lbs available at extra charge)
voltage supply:	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option
control:	via UserTerminal with keyboard & display	via UserTerminal with keyboard & display
power range:	15 ... 500 watts rpm independent (up to 1,000 watts rpm dependent) 15 ... 950 watts rpm independent (up to 1,000 watts rpm dependent) at extra charge starting from 7 watts with additional external power supply	25 ... 500 watts rpm independent (up to 1,000 watts rpm dependent) 25 ... 950 watts rpm independent (up to 1,000 watts rpm dependent) at extra charge starting from 7 watts with additional external power supply
speed range:	15 ... 140 rpm	15 ... 140 rpm
brake:	hybrid-brake-system (HBS)	hybrid-brake-system (HBS)
safety:	CE 0633; MDD 93/42/EEC, Class IIa, DIN EN ISO 20957-1; DIN EN ISO 20957-5; DIN EN 60601-1; DIN EN 60601-1-2; Not UL-certified. Device not for sale in Canada and the USA.	CE: DIN EN ISO 20957-1; DIN EN ISO 20957-5; Not UL-certified. Device not for sale in Canada and the USA.
classification:	medical device risk class IIa according to MDD, therapeutic medical device and diagnostic medical device	sports and fitness device; not for medical, not for therapeutical applications
usage class:	S, I according to ISO 20957-1	S, I according to ISO 20957-1
accuracy class:	A (high accuracy) according to DIN EN ISO 20957-1	A (high accuracy) according to DIN EN ISO 20957-1
digital interface:	optional Bluetooth®, NFC, RFID	optional Bluetooth®, NFC, RFID
programs:	quick start, time, pulse, optional program package available	quick start, time, pulse, optional program package available
colour of frame:	white aluminum RAL 9006 (powder coated)	white aluminum RAL 9006 (powder coated)
size of frame:	L x W x H: 119 x 65 x 145 cm (3ft 10.85" x 2ft 1.6" x 4ft 9")	L x W x H: 119 x 65 x 145 cm (3ft 10.85" x 2ft 1.6" x 4ft 9")
net. weight:	device approx. 58 kg (128 lbs)	device approx. 58 kg (128 lbs)
gross weight:	depending on package mode chosen (land, sea, air)	depending on package mode chosen (land, sea, air)

Weight and dimensions may differ depending on accessories.

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arm-ergometer	torqualizer® arm ef med 900	torqualizer® arm ef 900
manufacturer:	emotion fitness GmbH & Co. KG / Germany	emotion fitness GmbH & Co. KG / Germany
order number:	cos30030ef-med900	cos30030ef-900
applications:	endurance training upper body / arms	endurance training upper body / arms
functions:	easy to handle, 7" TFT – capacitive touch display, high resolution coloured display with Bio-Feedback; easy step-through, easily removable seat; length adjustable crank arm (with synchronous mode), bi-directional drive; Polar® - auto connection system	easy to handle, 7" TFT – capacitive touch display, high resolution coloured display with Bio-Feedback; easy step-through, easily removable seat; length adjustable crank arm (with synchronous mode), bi-directional drive; Polar® - auto connection system
max. user weight:	150 kg / 330 lbs (optional 200 kg / 440 lbs available at extra charge)	150 kg / 330 lbs (optional 200 kg / 440 lbs available at extra charge)
voltage supply:	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option
control:	via UserTerminal with keyboard & display	via UserTerminal with keyboard & display
power range:	15 ... 500 watts rpm independent (up to 1,000 watts rpm dependent) 15 ... 550 watts rpm independent (up to 1,000 watts rpm dependent) at extra charge starting from 7 watts with additional external power supply	25 ... 500 watts rpm independent (up to 1,000 watts rpm dependent) 25 ... 550 watts rpm independent (up to 1,000 watts rpm dependent) at extra charge starting from 7 watts with additional external power supply
speed range:	15 ... 140 rpm	15 ... 140 rpm
brake:	hybrid-brake-system (HBS)	hybrid-brake-system (HBS)
safety:	CE 0633; MDD 93/42/ECC, Class IIa, DIN EN ISO 20957-1; DIN EN ISO 20957-5; DIN EN 60601-1; DIN EN 60601-1-2; Not UL-certified. Device not for sale in Canada and the USA.	CE; DIN EN ISO 20957-1; DIN EN ISO 20957-5; Not UL-certified. Device not for sale in Canada and the USA.
classification:	medical device risk class IIa according to MDD, therapeutic medical device and diagnostic medical device	sports and fitness device; not for medical, not for therapeutic applications
usage class:	S, I according to ISO 20957-1	S, I according to ISO 20957-1
accuracy class:	A (high accuracy) according to DIN EN ISO 20957-1	A (high accuracy) according to DIN EN ISO 20957-1
digital interface:	optional Bluetooth®, NFC, RFID	optional Bluetooth®, NFC, RFID
programs:	quick start, time, pulse, optional program package available	quick start, time, pulse, optional program package available
colour of frame:	white aluminum RAL 9006 (powder coated)	white aluminum RAL 9006 (powder coated)
size of frame:	L x W x H: 116 x 77 x 155 cm (3ft 9.6" x 2ft 6.3" x 5ft 1")	L x W x H: 116 x 77 x 155 cm (3ft 9.6" x 2ft 6.3" x 5ft 1")
net. weight:	device approx. 98 kg (216.1 lbs)	device approx. 98 kg (216.1 lbs)

Weight and dimensions may differ depending on accessories.

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bike-ergometer	torqualizer® recumbent med 900	torqualizer® recumbent 900
manufacturer:	emotion fitness GmbH & Co. KG / Germany	emotion fitness GmbH & Co. KG / Germany
order number:	cos30031ef-med900	cos30031ef-900
applications:	endurance training legs, obese patients, long training session	endurance training legs, obese trainees, long training session
functions:	7" TFT – capacitive touch display, high resolution coloured display, with biofeedback, easy access, horizontal seat adjustment, adjustable backrest, grid independent, Polar® - auto connection system	7" TFT – capacitive touch display, high resolution coloured display, with biofeedback, easy access, horizontal seat adjustment, adjustable backrest, grid independent, Polar® - auto connection system
max. user weight:	150 kg (330 lbs), optional 200 / 250 kg (440 / 551 lbs) available at extra charge	150 kg (330 lbs), optional 200 / 250 kg (440 / 551 lbs) available at extra charge
voltage supply:	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option
control:	via UserTerminal with keyboard & display	via UserTerminal with keyboard & display
power range:	15 ... 500 watts rpm independent (up to 1,000 watts rpm dependent) 15 ... 950 watts rpm independent (up to 1,000 watts rpm dependent) at extra charge starting from 7 watts with additional external power supply	25 ... 500 watts rpm independent (up to 1,000 watts rpm dependent) 25 ... 950 watts rpm independent (up to 1,000 watts rpm dependent) at extra charge starting from 7 watts with additional external power supply
speed range:	15 ... 140 rpm	15 ... 140 rpm
brake:	hybrid-brake-system (HBS)	hybrid-brake-system (HBS)
safety:	CE 0633; MDD 93/42/EEC, Class IIa, DIN EN ISO 20957-1; DIN EN ISO 20957-5; DIN EN 60601-1; DIN EN 60601-1-2; Not UL-certified. Device not for sale in Canada and the USA.	CE; DIN EN ISO 20957-1; DIN EN ISO 20957-5; DIN EN 60601-1-2. Not UL-certified. Device not for sale in Canada and the USA.
classification:	medical device risk class IIa according to MDD, therapeutic medical device and diagnostic medical device	sports and fitness device; not for medical, not for therapeutic applications
usage class:	S, I according to ISO 20957-1	S, I according to ISO 20957-1
accuracy class:	A (high accuracy) according to DIN EN ISO 20957-1	A (high accuracy) according to DIN EN ISO 20957-1
digital interface:	optional Bluetooth®, NFC, RFID	optional Bluetooth®, NFC, RFID
programs:	quick start, time, pulse, optional therapy package available	quick start, time, pulse, optional therapy package available
colour of frame:	white aluminum RAL 9006 (powder coated)	white aluminum RAL 9006 (powder coated)
size of frame:	L x W x H: 173 x 65 x 133 cm (5ft 8.11" x 2ft 1.59" x 4ft 4.36") L x W x H with boosted 250 kg: 173 x 78 x 133 cm (5ft 8.11" x 2ft 6.7" x 4ft 4.36")	L x W x H: 173 x 65 x 133 cm (5ft 8.11" x 2ft 1.59" x 4ft 4.36") L x W x H with boosted 250 kg: 173 x 78 x 133 cm (5ft 8.11" x 2ft 6.7" x 4ft 4.36")
net. weight:	device approx. 80 kg (176.4 lbs) with boosted 250 kg: approx. 104 kg (230lbs)	device approx. 80 kg (176.4 lbs) with boosted 250 kg: approx. 104 kg (230lbs)

Weight and dimensions may differ depending on accessories.

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arm-ergometer	torqualizer® arm ef med 900 wall model	torqualizer® arm ef 900 wall model
manufacturer:	emotion fitness GmbH & Co. KG / Germany	emotion fitness GmbH & Co. KG / Germany
order number:	cos30030ef-med900-wm	cos30030ef-900-wm
applications:	endurance training upper body / arms	endurance training upper body / arms
functions:	easy to handle, 7" TFT – capacitive touch display, high resolution coloured display with Bio-Feedback; length adjustable crank arm (with synchronous mode), bi-directional drive; Polar® - auto connection system	easy to handle, 7" TFT – capacitive touch display, high resolution coloured display with Bio-Feedback; length adjustable crank arm (with synchronous mode), bi-directional drive; Polar® - auto connection system
voltage supply:	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option
control:	via UserTerminal with keyboard & display	via UserTerminal with keyboard & display
power range:	15 ... 500 watts rpm independent (up to 1,000 watts rpm dependent) 15 ... 550 watts rpm independent (up to 1,000 watts rpm dependent) starting from 7 watts with additional external power supply	25 ... 500 watts rpm independent (up to 1,000 watts rpm dependent) 25 ... 550 watts rpm independent (up to 1,000 watts rpm dependent) at extra charge starting from 7 watts with additional external power supply
speed range:	15 ... 140 rpm	15 ... 140 rpm
brake:	hybrid-brake-system (HBS)	hybrid-brake-system (HBS)
safety:	CE 0633; MDD 93/42/ECC, Class IIa, DIN EN ISO 20957-1; DIN EN ISO 20957-5; DIN EN 60601-1; DIN EN 60601-1-2; Not UL-certified. Device not for sale in Canada and the USA.	CE; DIN EN ISO 20957-1; DIN EN ISO 20957-5; Not UL-certified. Device not for sale in Canada and the USA.
classification:	medical device risk class IIa according to MDD, therapeutic medical device and diagnostic medical device	sports and fitness device; not for medical, not for therapeutic applications
usage class:	S, I according to ISO 20957-1	S, I according to ISO 20957-1
accuracy class:	A (high accuracy) according to DIN EN ISO 20957-1	A (high accuracy) according to DIN EN ISO 20957-1
digital interface:	optional Bluetooth®, NFC, RFID	optional Bluetooth®, NFC, RFID
programs:	quick start, time, pulse, optional program package available	quick start, time, pulse, optional program package available
colour of frame:	white aluminum RAL 9006 (powder coated)	white aluminum RAL 9006 (powder coated)
size of frame:	L x W x H: 63 x 56 x 155 cm (2ft 0.8" x 1ft 10" x 5ft 1")	L x W x H: 63 x 56 x 155 cm (2ft 0.8" x 1ft 10" x 5ft 1")
net. weight:	device approx. 48 kg (105.9 lbs)	device approx. 48 kg (105.9 lbs)

Weight and dimensions may differ depending on accessories.

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cross-ergometer	torqualizer® cross med 900	torqualizer® cross 900
manufacturer:	emotion fitness GmbH & Co. KG / Germany	emotion fitness GmbH & Co. KG / Germany
order number:	cos30032ef-med900	cos30032ef-900
applications:	full body endurance training, easy on the joints	full body endurance training, easy on the joints
functions:	7" TFT – capacitive touch display, high resolution coloured display with Bio-Feedback; easy step-through; easy to handle; horizontally and vertically adjustable saddle; Polar® - auto connection system	7" TFT – capacitive touch display, high resolution coloured display with Bio-Feedback; easy step-through; easy to handle; horizontally and vertically adjustable saddle; Polar® - auto connection system
max. user weight:	150 kg / 330 lbs (optional 200 kg / 440 lbs available at extra charge)	150 kg / 330 lbs (optional 200 kg / 440 lbs available at extra charge)
voltage supply:	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option
control:	via UserTerminal with keyboard & display	via UserTerminal with keyboard & display
power range:	100 ... 500 watts rpm independent (up to 1,000 watts rpm dependent) 100 ... 950 watts rpm independent with performance package starting from 7 watts with additional external power supply optional display of brake wattage with 15 watts initial break resistance;	100 ... 500 watts rpm independent (up to 1,000 watts rpm dependent) 100 ... 950 watts rpm independent with performance package starting from 7 watts with additional external power supply optional display of brake wattage with 15 watts initial break resistance;
speed range:	15 ... 140 rpm	15 ... 140 rpm
brake:	hybrid-brake-system (HBS)	hybrid-brake-system (HBS)
safety:	CE 0633; MDD 93/42/ECC, Class IIa, DIN EN ISO 20957-1; DIN EN ISO 20957-9; DIN EN 60601-1; DIN EN 60601-1-2; Not UL-certified. Device not for sale in Canada and the USA.	CE; DIN EN ISO 20957-1; DIN EN ISO 20957-9; Not UL-certified. Device not for sale in Canada and the USA.
classification:	medical device risk class IIa according to 93/42 EEC, therapeutic medical device and diagnostic medical device	sports and fitness device; not for medical, not for therapeutic applications
usage class:	S, I according to ISO 20957-1	S, I according to ISO 20957-1
accuracy class:	A (high accuracy) according to DIN EN ISO 20957-1	A (high accuracy) according to DIN EN ISO 20957-1
digital interface:	optional Bluetooth®, NFC, RFID	optional Bluetooth®, NFC, RFID
programs:	quick start, time, heart rate, optional therapy package available	quick start, watts, heart rate, optional comfort package available
colour of frame:	white aluminum RAL 9006 (powder coated)	white aluminum RAL 9006 (powder coated)
size of frame:	L x W x H: 200 x 65 x 169 cm (6ft 6.7" x 2ft 1.5" x 5ft 6.5")	L x W x H: 200 x 65 x 169 cm (6ft 6.7" x 2ft 1.5" x 5ft 6.5")
net. weight:	device approx. 101 kg (223 lbs)	device approx. 101 kg (223 lbs)

Weight and dimensions may differ depending on accessories.

E & OE. Subject to alterations without prior notice. The illustrations may show accessories and items of optional equipment which are not part of standard specification or the recommended configuration.
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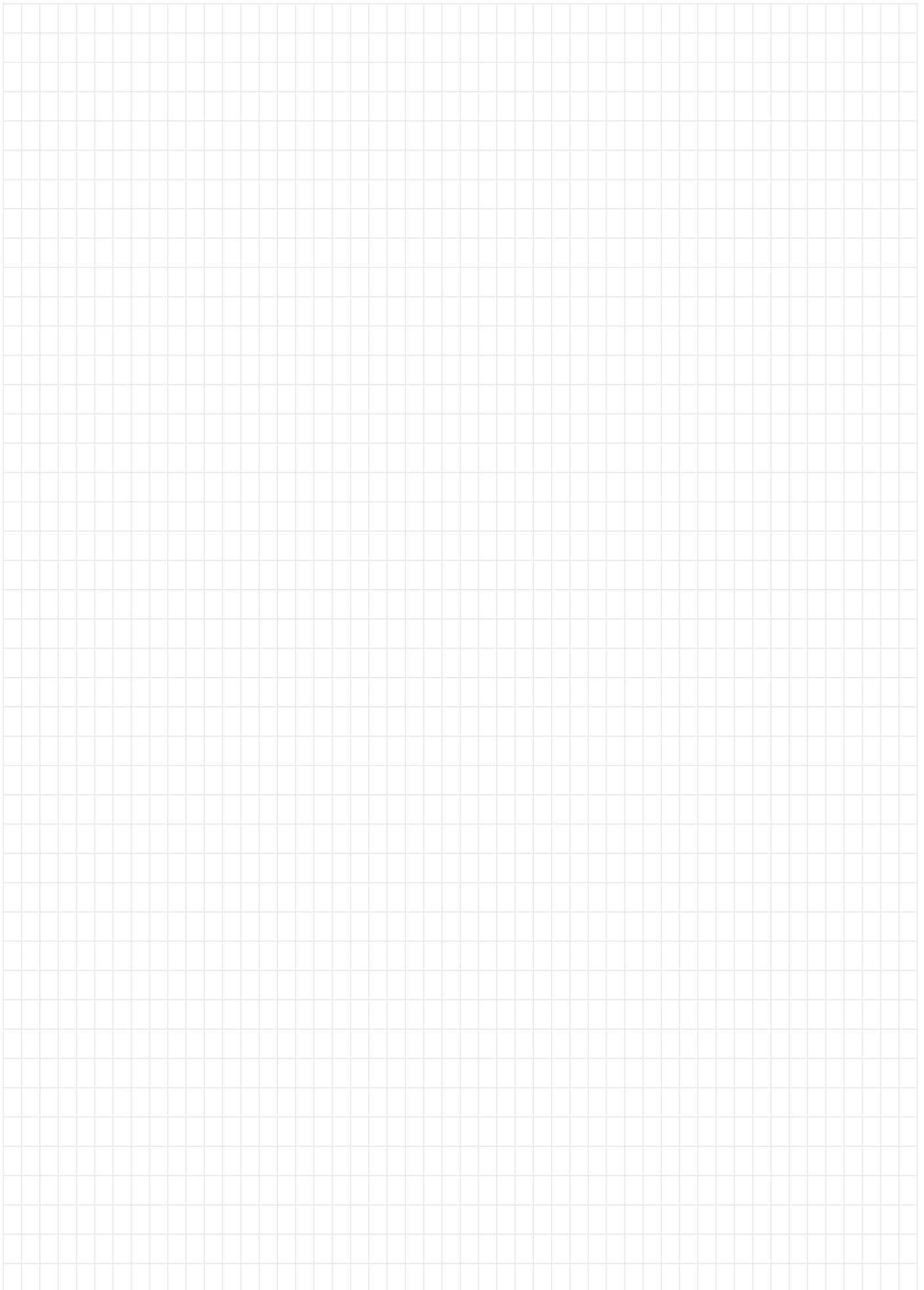
stair-ergometer	torqualizer® stair ef med 900	torqualizer® stair ef 900
manufacturer:	emotion fitness GmbH & Co. KG / Germany	emotion fitness GmbH & Co. KG / Germany
order number:	cos30033ef-med900	cos30033ef-900
applications:	endurance training legs, coordination, activity of daily life (ADL)	endurance training legs, coordination, activity of daily life (ADL)
functions:	7" TFT – capacitive touch display, high resolution coloured display with biofeedback, Polar® - auto connection system, pedal independent system, cushioned pedal suspension, automatic weight detection for precise calculation of performance	7" TFT – capacitive touch display, high resolution coloured display with biofeedback, Polar® - auto connection system, pedal independent system, cushioned pedal suspension, automatic weight detection for precise calculation of performance
max. user weight:	150 kg	150 kg
voltage supply:	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option	torqualizer® ergometer is grid independent, except when ordering 24 Volt permanent power supply option
control:	via UserTerminal with keyboard & display	via UserTerminal with keyboard & display
power range:	Isokinetic mode of operation for 4 ... 27 m / min falling speed	Isokinetic mode of operation for 4 ... 27 m / min falling speed
brake:	hybrid-brake-system (HBS)	hybrid-brake-system (HBS)
motor system:	calibrated drive unit	calibrated drive unit
safety:	CE 0633; MDD 93/42/ECC, Class IIa, DIN EN ISO 20957-1; DIN EN ISO 20957-8; DIN EN 60601-1; DIN EN 60601-1-2; Not UL-certified. Device not for sale in Canada and the USA.	CE; DIN EN ISO 20957-1; DIN EN ISO 20957-8; Not UL-certified. Device not for sale in Canada and the USA.
classification:	medical device risk class IIa according to MDD, therapeutic medical device and diagnostic medical device	sports and fitness device; not for medical, not for therapeutic applications
usage class:	S, I according to ISO 20957-1	S, I according to ISO 20957-1
accuracy class:	A (high accuracy) according to DIN EN ISO 20957-1	A (high accuracy) according to DIN EN ISO 20957-1
digital interface:	optional Bluetooth®, NFC, RFID	optional Bluetooth®, NFC, RFID
programs:	quick start, time, pulse, optional program package available	quick start, watts, heart rate, optional program package available
colour of frame:	white aluminum RAL 9006 (powder coated)	white aluminum RAL 9006 (powder coated)
size of frame:	L x W x H: 102 x 73 x 160 cm (3ft 4.1" x 2ft 4.7" x 5ft 3")	L x W x H: 102 x 73 x 160 cm (3ft 4.1" x 2ft 4.7" x 5ft 3")
net. weight:	device approx. 79 kg (175 lbs)	device approx. 79 kg (175 lbs)

Weight and dimensions may differ depending on accessories.

E & OE. Subject to alterations without prior notice. The illustrations may show accessories and items of optional equipment which are not part of standard specification or the recommended configuration. Subject to our general terms of trade: www.hpcosmos.com



SPACE FOR YOUR NOTES:



h/p/cosmos® treadmills	order number	running surface l/w	speed	elevation	power supply *	UserTerminal display	CE
pluto® lt med	cos31002	150 / 50 cm	0 ... 22 km/h	0 ... 25 %	200 ... 240 Volt AC 1~ / 16 Amp.	no	CE 0123
pluto® med	cos31022	150 / 50 cm	0 ... 22 km/h	0 ... 25 %	200 ... 240 Volt AC 1~ / 16 Amp.	10,1" touch & keyboard	CE 0123
pluto® ef med (emotion fitness touch-display)	cos31012	150 / 50 cm	0 ... 22 km/h	0 ... 25 %	200 ... 240 Volt AC 1~ / 16 Amp.	7" touch	CE 0123
stratos® med	cos31032	150 / 50 cm	0 ... 22 km/h	0 %	200 ... 240 Volt AC 1~ / 16 Amp.	10,1" touch & keyboard	CE 0123
mercury® med	cos31042	150 / 50 cm	0 ... 22 km/h	0 ... 25 %	200 ... 240 Volt AC 1~ / 16 Amp.	10,1" touch & keyboard	CE 0123
stellar® med, with UserTerminal 10,1" TouchPro	cos30003-01va06	170 / 65 cm	0 ... 25 km/h	0 %	230 Volt AC 1~ / 15 Amp.	10,1" touch & keyboard	CE 0123
quasar® med, with UserTerminal 10,1" TouchPro	cos30003-01va02	170 / 65 cm	0 ... 25 km/h	0 ... 28 %	230 Volt AC 1~ / 15 Amp.	10,1" touch & keyboard	CE 0123
stellar® med 190/65, with UserTerminal 10,1" TouchPro	cos30004-01va06	190 / 65 cm	0 ... 25 km/h	0 %	230 Volt AC 1~ / 15 Amp.	10,1" touch & keyboard	CE 0123
pulsar® med, with UserTerminal 10,1" TouchPro	cos30004-01va02	190 / 65 cm	0 ... 25 km/h	-25 ... +25 %	230 Volt AC 1~ / 15 Amp.	10,1" touch & keyboard	CE 0123

Treadmills for climate chambers available on request (for all sizes as an option at extra charge for climatic conditions from -35°C ... +55°C and 20% ... 95% humidity) with external UserTerminal.

h/p/cosmos® neurological rehabilitation treadmills	order number	with adjustable handrails, therapists seats on both sides and foot rest				UserTerminal display	CE
locomotion® 150/50 DE med	cos30001-01va02	150 / 50 cm	0 ... 10 km/h	-25 ... +25 %	230 Volt AC 1~ / 15 Amp.	15,6" touch	CE 0123
locomotion® 190/65-3p DE med	cos30024va04	190 / 65 cm	0 ... 25 km/h	-25 ... +25 %	400 Volt AC 3~ / 15 Amp.	15,6" touch	CE 0123

h/p/cosmos® high-performance treadmills	order number	running surface l/w	speed	elevation	power supply *	UserTerminal display	CE
quasar® med 3p, with MCU5 (6 displays)	cos30003va26	170 / 65 cm	0 ... 40 km/h	0 ... 28 %	400 Volt AC 3~ / 15 Amp.	yes	CE 0123
pulsar® lt 3p med, with MCU5	cos30004va02	190 / 65 cm	0 ... 40 km/h	-25 ... +25 %	400 Volt AC 3~ / 15 Amp.	no	CE 0123
pulsar® med 3p, with MCU5 (6 displays)	cos30004va04	190 / 65 cm	0 ... 40 km/h	-25 ... +25 %	400 Volt AC 3~ / 15 Amp.	yes	CE 0123

h/p/cosmos® oversize treadmills	order number	running surface l/w	speed	elevation	power supply *	UserTerminal display	CE
venus® 200/75	cos30005-01va05	200 / 75 cm	0 ... 40 km/h	-35 ... +35 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
venus® 200/75 r	cos30005-01va06	200 / 75 cm	0 ... 40 km/h	-35 ... +35 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
venus® 200/100	cos30006-01va05	200 / 100 cm	0 ... 40 km/h	-35 ... +35 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
venus® 200/100 r	cos30006-01va06	200 / 100 cm	0 ... 40 km/h	-35 ... +35 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
saturn® 250/75	cos30007-01va05	250 / 75 cm	0 ... 40 km/h	-27 ... +27 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
saturn® 250/75 r	cos30007-01va06	250 / 75 cm	0 ... 40 km/h	-27 ... +27 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
saturn® 250/100	cos30008-01va05	250 / 100 cm	0 ... 40 km/h	-27 ... +27 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
saturn® 250/100 r	cos30008-01va06	250 / 100 cm	0 ... 40 km/h	-27 ... +27 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
saturn® 250/125 rs	cos30009-01va03	250 / 125 cm	0 ... 40 km/h	-27 ... +27 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
saturn® 300/75	cos30010-01va05	300 / 75 cm	0 ... 40 km/h	-27 ... +27 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
saturn® 300/75 r	cos30010-01va06	300 / 75 cm	0 ... 40 km/h	-27 ... +27 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
saturn® 300/100	cos30011-01va05	300 / 100 cm	0 ... 40 km/h	-27 ... +27 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
saturn® 300/100 r	cos30011-01va06	300 / 100 cm	0 ... 40 km/h	-27 ... +27 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123
saturn® 300/125 rs	cos30012-01va03	300 / 125 cm	0 ... 40 km/h	-27 ... +27 %	400 Volt AC 3~ / 32 Amp.	15" touch	CE 0123

Further oversize treadmills and specialised running machines with custom dimensions and specifications available on request.

Treadmills for climate chambers available on request (for all sizes as an option at extra charge for climatic conditions from -35°C ... +55°C and 20% ... 95% humidity) with external UserTerminal.

h/p/cosmos® biomechanics treadmills	with pressure measurement plates & gait analysis software (medical PC & printer not included)					UserTerminal display	CE
stratos® med	cos31032	150 / 50 cm	0 ... 22 km/h	optional	200 ... 240 Volt AC 1~ / 16 Amp.	10,1" touch & keyboard	CE 0123
+ gaitway 3d med biomechanic-upgrade + 3 component (Fx,y,z) force measurement, requires additional subframe: [cos102999_subframe] / [cos102999_subframe_elev], with or without elevation	cos102999_150-50_MCU6va02						
stellar® med, with UserTerminal 10,1" TouchPro	cos30003-01va06	170 / 65 cm	0 ... 25 km/h	optional	230 Volt AC 1~ / 15 Amp.	10,1" touch & keyboard	CE 0123
+ gaitway 3d med biomechanic-upgrade + 3 component (Fx,y,z) force measurement, requires additional subframe: [cos102999_subframe] / [cos102999_subframe_elev], with or without elevation	cos102999_170-65_MCU6va02						

Further biomechanic upgrades for example with pressure distribution sensor plates, see gaitway, noraxon, zebris.

h/p/cosmos® torqualizer® med ergometer series	order number	brake system	power range** optionally 750 W	rpm 1/min speed range	power supply *	max. user weight	CE
torqualizer® med 1200 with UserTerminal 10,1" TouchPro (Approval pending)	cos30021va02	hybrid	7 ... 950 watts **	20 ... >140 rpm **	100 ... 240 volts AC / 6 Amp.	200 kg	Approval pending
torqualizer® cycle ef med 900	cos30021ef-med900	hybrid	15 ... 500 watts	15 ... 140 rpm	grid independent (cordless)	150 kg	CE 0633
torqualizer® arm ef med 900 stand model incl. crank lever adjustable in length	cos30030ef-med900	hybrid	15 ... 500 watts	15 ... 140 rpm	grid independent (cordless)	150 kg	CE 0633
torqualizer® arm ef med 900 wall model incl. crank lever adjustable in length	cos30030ef-med900-wm	hybrid	15 ... 500 watts	15 ... 140 rpm	grid independent (cordless)	150 kg	CE 0633
torqualizer® recumbent ef med 900	cos30031ef-med900	hybrid	15 ... 500 watts	15 ... 140 rpm	grid independent (cordless)	150 kg	CE 0633
torqualizer® cross ef med 900	cos30032ef-med900	hybrid	(15) 100 ... 500 watts	15 ... 140 rpm	grid independent (cordless)	150 kg	CE 0633
torqualizer® stair ef med 900	cos30033ef-med900	hybrid	sinking rate	4 ... 27 m/min	grid independent (cordless)	150 kg	CE 0633

All options for torqualizers see torqualizer.

* We recommend a dedicated line 3 phase power connection (400 Volt AC3~/N/PE 50/60 Hz 16 to 32A fuse) and 3-phase device for high speed, fast acceleration, special applications and for heavier subjects due to higher performance. For all single phase powered treadmills the natural performance limitations of single phase voltage supply apply due to the law of physics. For professional performance diagnostics, athletic training and high performance applications we strongly recommend running machines with 3-phase voltage power supply from model size min. pulsar 3p, venus or saturn. ** measured and calibrated up to 900 watts. Depending on gearings and revolutions per minute. Tolerances may occur on loads above 900 watts.

h/p/cosmos® treadmills	order number	running surface l/w	speed	elevation	power supply *	UserTerminal display	CE
pluto® lt sport	cos31001	150 / 50 cm	0 ... 22 km/h	0 ... 25 %	200 ... 240 Volt AC 1~ / 16 Amp.	no	CE
pluto® sport	cos31021	150 / 50 cm	0 ... 22 km/h	0 ... 25 %	200 ... 240 Volt AC 1~ / 16 Amp.	10,1" touch & keyboard	CE
pluto® ef sport (emotion fitness touch-display)	cos31011	150 / 50 cm	0 ... 22 km/h	0 ... 25 %	200 ... 240 Volt AC 1~ / 16 Amp.	7" touch	CE
stratos® sport	cos31031	150 / 50 cm	0 ... 22 km/h	0 %	200 ... 240 Volt AC 1~ / 16 Amp.	10,1" touch & keyboard	CE
mercury® sport	cos31041	150 / 50 cm	0 ... 22 km/h	0 ... 25 %	200 ... 240 Volt AC 1~ / 16 Amp.	10,1" touch & keyboard	CE
stellar®, with UserTerminal 10,1" TouchPro	cos30003-01va05	170 / 65 cm	0 ... 25 km/h	0 %	230 Volt AC 1~ / 15 Amp.	10,1" touch & keyboard	CE
quasar®, with UserTerminal 10,1" TouchPro	cos30003-01va01	170 / 65 cm	0 ... 25 km/h	0 ... 28 %	230 Volt AC 1~ / 15 Amp.	10,1" touch & keyboard	CE
stellar® sport 190/65, with UserTerminal 10,1" TouchPro	cos30004-01va05	190 / 65 cm	0 ... 25 km/h	0 %	230 Volt AC 1~ / 15 Amp.	10,1" touch & keyboard	CE
pulsar® sport, with UserTerminal 10,1" TouchPro	cos30004-01va01	190 / 65 cm	0 ... 25 km/h	-25 ... +25 %	230 Volt AC 1~ / 15 Amp.	10,1" touch & keyboard	CE
saturn® 450/300 rs sport, with UserTerminal 10,1" TouchPro	cos30013-02va01	450 / 300 cm	0 ... 40 km/h	-4 ... +25 %	400 Volt AC 3~ / 64 Amp.	10,1" touch & keyboard	CE

h/p/cosmos® biomechanics treadmills	with pressure measurement plates & gait analysis software (medical PC & printer not included)					UserTerminal display	CE
stratos® sport	cos31031	150 / 50 cm	0 ... 22 km/h	optional	200 ... 240 Volt AC 1~ / 16 Amp.	10,1" touch & keyboard	CE
+ gaitway 3d sport biomechanic-upgrade + 3 component (Fx,y,z) force measurement, requires additional subframe: [cos102999_subframe] / [cos102999_subframe_elev], with or without elevation	cos102999_150-50_MCU6va01						
stellar®, with UserTerminal 10,1" TouchPro	cos30003-01va05	170 / 65 cm	0 ... 25 km/h	optional	230 Volt AC 1~ / 15 Amp.	10,1" touch & keyboard	CE
+ gaitway 3d sport biomechanic-upgrade + 3 component (Fx,y,z) force measurement, requires additional subframe: [cos102999_subframe] / [cos102999_subframe_elev], with or without elevation	cos102999_170-65_MCU6va01						
pulsar® sport 3p, with MCU5 (6 displays)	cos30004va07	190 / 65 cm	0 ... 40 km/h	optional	400 Volt AC 3~ / 15 Amp.	yes	CE
+ gaitway 3d biomechanics upgrade 3 component (Fx,y,z) force measurement requires additional subframe: [cos102999_subframe] / [cos102999_subframe_elev], with or without elevation	cos102999_190-65						

Further biomechanic upgrades for example with pressure distribution sensor plates, see gaitway, noraxon, zebris.

h/p/cosmos® ladder ergometer	order number	height of climb: 235cm, rung width: 49.5cm / interval: 24.4cm	power supply *	UserTerminal display	CE
discovery®	cos30014va02	"endless" ladder ergometer for climbing	230 Volt AC 1~ / 15 Amp.	yes	CE

h/p/cosmos® sprint trainer / rope traction device	order number	traction force- and traction resistance-training	power supply *	UserTerminal display	CE
comet®	cos30015va01	sprint trainer concentric/eccentric. 180 meter rope, 1-phase	230 Volt AC 1~ / 15 Amp.	yes	CE
comet® 3p	cos30015va02	sprint trainer concentric/eccentric. 180 meter rope, 3-phase	400 Volt AC 3~ / 15 Amp.	yes	CE

h/p/cosmos® torqualizer® ergometer series	order number	brake system	power** optionally 750 W	rpm 1/min speed range	power supply *	max. user weight	CE
torqualizer® 1200 with UserTerminal 10,1" TouchPro (Approval pending)	cos30021va01	hybrid	7 ... 950 watts **	20 ... >140 rpm **	100 ... 240 volts AC / 6 Amp.	200 kg	Approval pending
torqualizer® cycle ef 900	cos30021ef-900	hybrid	25 ... 500 watts	15 ... 140 rpm	grid independent (cordless)	150 kg	CE
torqualizer® arm ef 900 stand model incl. crank lever adjustable in length	cos30030ef-900	hybrid	25 ... 500 watts	15 ... 140 rpm	grid independent (cordless)	150 kg	CE
torqualizer® arm ef 900 wall model incl. crank lever adjustable in length	cos30030ef-900-wm	hybrid	25 ... 500 watts	15 ... 140 rpm	grid independent (cordless)	150 kg	CE
torqualizer® recumbent ef 900	cos30031ef-900	hybrid	25 ... 500 watts	15 ... 140 rpm	grid independent (cordless)	150 kg	CE
torqualizer® cross ef 900	cos30032ef-900	hybrid	(15) 100 ... 500 watts	15 ... 140 rpm	grid independent (cordless)	150 kg	CE
torqualizer® stair ef 900	cos30033ef-900	hybrid	sinking rate	4 ... 27 m/min	grid independent (cordless)	150 kg	CE

All options for torqualizers, see torqualizer.

* We recommend a dedicated line 3 phase power connection (400 Volt AC3~/N/PE 50/60 Hz 16 to 32A fuse) and 3-phase device for high speed, fast acceleration, special applications and for heavier subjects due to higher performance. For all single phase powered treadmills the natural performance limitations of single phase voltage supply apply due to the law of physics. For professional performance diagnostics, athletic training and high performance applications we strongly recommend running machines with 3-phase voltage power supply from model size min. pulsar 3p, venus or saturn. ** measured and calibrated up to 900 watts. Depending on gearings and revolutions per minute. Tolerances may occur on loads above 900 watts.



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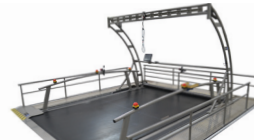
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pulsar® med



inline skating
saturn® 300/125r



functional training
pulsar® med + robowalk®



**cross country skiing
skating / biathlon**
saturn® 450/300rs



wheelchair
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bike ergometer
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**biomechanics
gait parameters**
optogait

rehabilitation



active gait correction
robowalk® expander / mercury® med



senior fitness
mercury®



orthopaedic rehabilitation
mercury® med / arm support / airwalk® ap



cardiac rehabilitation
mercury® med



**body weight supported
treadmill therapy**
airwalk® ap / mercury® med



angiology
mercury® med



gait analysis / biomechanics
gaitway® 3d with force and
pressure measurement



**cardiovascular stress
testing / CPET**
mercury® med



locomotion therapy
locomotion® med 150/50



bike ergometer
torqualizer® 1200
medical certification pending

special applications



**environmental & climate
chambers**
quasar® med with
external UserTerminal



biomechanics
gaitway® 3d



military / army
quasar® special version



speed training
sprint trainer comet®



**fire fighter ladder
training & fitness**
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