h/p/cosmos®

therapy & rehabilitation

rehabilitation system robowalk® expander

How does the new h/p/cosmos robowalk® expander work?

First, elastic cables are attached to patient´s legs with comfortable leg cuffs. As the patient walks, the cables at the front assist the movement of the legs with support. The cables at the rear can be used also as resistance and for gait correction training. Both the front and back system can be utilized together for even greater training effects. By adjusting the angle of the support/resistance cables either vertically or horizontally, movement correction is possible. The patented tension adjustment module involves readable scales on each cable for tension monitoring.

- **gait training and gait correction for orthopaedic or neurological patients**
- **gait improvement**
- **motion support**
- **mobilization of spastic patients**
- **supports therapists in manual locomotion therapy**
- **strength and coordination training**

innovative therapy methodology

a complete sophisticated rehabilitation system

Patients in physical therapy often suffer from restricted mobility. For some patients, even stepping onto the treadmill is difficult. The h/p/cosmos® rehabilitation system features a treadmill with a low access step height and extra long handrails that extend the full length of the treadmill. This is the safest way a patient with impaired ability to walk can use a treadmill. A professional wheelchair ramp is available as an accessory, allowing comfortable access onto the running surface for most types of wheelchairs.

The h/p/cosmos mercury® med treadmill system comes with a running surface of L: 150 cm (59.05“) x W: 50 cm (19.68“) which meets the standards for many applications. For special demands larger deck size models like the h/p/cosmos quasar® med, the high performance h/p/cosmos pulsar® 3p or the oversize range h/p/cosmos venus® and h/p/cosmos saturn® with a deck size of up to L: 450 cm (177.17“) x W: 300 cm (118.11“) are available. Custom-made models designed for higher body weights and for special applications are manufactured by h/p/cosmos®.

therapy in the early stages of recovery

The course of therapy should start as early as possible and should be enjoyable for both, the patient and the therapist. For this to be possible, added support is often needed. The h/p/cosmos robowalk® expander rehabilitation-system provides support for the patients in several ways.

supporting movement with the expander

The expander technology benefits the patient and the therapist during treatment by supporting the forward force of movement. In addition, it assists the therapists in moving the patient´s limbs rather than moving them manually. This leads to reduced fatigue in both patient and therapist and will enable extended treatment time leading to successful therapy. The robowalk® expander is a great help for especially challenging work with disabled patients.

individual and reproduceable settings

The h/p/cosmos robowalk® expander is easy to use and therapists will appreciate the simple settings. Forces and angles of tension cables can be set individually via raster holes to match the skills of the patient or the requirements of the therapist. Due to the flexibility of the expander cables, the movement can be set from almost any point in front of or behind the patient. The rear expanders have very different functions and benefits compared to the front expanders. The rear cables do not create traction support like the front cables, but work as a resistance system for muscle training and gait correction. The rear expander cables can even be

set outside the width of the treadmill so that adjustments from the side can be made to the patient´s leg positioning.

Since in many cases it is not required that the therapist works permanently hands on 'contact' with the patient, it allows the therapist to observe the movement of the patient and to observe the treatment progress by viewing the patient from different angles.

Once you have found the perfect setting for a patient you will want to use this at the next visit straight away. Each setting is numbered so that the therapists can easily record each patient´s specific setup for future therapy and training sessions.

relief through body weight support

The patented and individually adjustable h/p/cosmos® arm support gives users the stability and safety that they need.

The manual un-weighting arm support has cushioned U-shaped pads for patient´s forearms and ergonomic handgrips to provide them with the comfort and additional support they need. Additionally the patient can hold the two ergonomic hand grips giving tremendous positive impact on the comfort of the patient. The arm supports also have a positive mental impact on patients empowering them to walk without worrying about the fear of falling. If required, the optional h/p/cosmos® airwalk unweighting systems can unweight up to 160 kg body weight with the help of a body vest.

The additional keyboard and additional stop button give both therapist and patient control at all times. Even if the therapist moves the additional keyboard down to the running deck to assist the patient's movement of the legs, the patient still has access to the additional stop button in the hand grip and can stop the treadmill without leaving the safety of the arm support.

patient safety leads to positive results

An important accessory when working with the robowalk expander technology is the h/p/cosmos safety arch with fall stop and chest harness. In case of a fall, the patient will be secured and the treadmill will stop automatically. The comfortable chest harness secures the patient and prevents them from falling forwards without restricting or pinching them. In gait therapy or exercise with children, the safety arch is crucial because only patients who feel secure will be able to perform with the required movement and intensity.

The max. body weight for the safety arch is 200 kg / 441 lbs; the length of the harness is individually adjustable.

system solution robowalk® expander

recommended configuration: h/p/cosmos robowalk® expander

pos.	qty.	order number	product description
1.	1	cos30000va08	**running machine h/p/cosmos mercury® med** running surface 150 x 50 cm, speed 0 ... 22 km/h, elevation 0 ... 25 %, drive motor 3.3 kW, interface port com1 for PC, ECG, ergospirometry-, blood-pressure-monitor system or printer - compatible to most of the systems worldwide, incl. PC software h/p/cosmos para control® for device control and monitoring
2.	1	cos10145	handrail long, 60mm tube diameter, 2 pillars (surcharge)
3.	1	cos10079va01	**safety arch with chest-belt (size M, blue), harness and emergency switch (fall-stop)**
4.	1	cos14903-02-S	chest belt size **S** (red) for h/p/cosmos safety arch
5.	1	cos14903-02-L	chest belt size **L** (yellow) for h/p/cosmos safety arch
6.	1	cos00098100045	reverse belt rotation for downhill simulation
7.	1	cos12013	**h/p/cosmos arm support with 3 joints, adjustable in height and width**
8.	1	cos10107	h/p/cosmos additional stop-button for arm support, right
9.	1	cos100680	h/p/cosmos additional keyboard with 6 keys (START, STOP, +, -, up, down)
10.	1	cos10111-01	mounting for additional keyboard at the arm support
11.	1	cos11750	mounting for additional keyboard at the motor hood, right
12.	1	cos14327	mounting for additional keyboard at the motor hood, left
13.	1	cos30022va01	**h/p/cosmos robowalk® expander front** 150/50
14.	1	cos30023va01	**h/p/cosmos robowalk® expander back** 150/50
15.	2	cos101052	foot straps to lift forefoot
16.	1	cos10071-v4.1.0	h/p/cosmos para control® 4.1 PC software for remote control
17.	1	cos10223	potential equalization cable, 5 m (required for medical systems)
18.	1	cos14795	pallet and cardboard hood packing 50
19.	1	cos60098010021	shipping costs* door to door within Europe, approx, confirmed price on request
20.	1	cos15732	installation & instruction treadmill through local distributor if applicable
21.	1	cos101094	1 day workshop for h/p/cosmos robowalk expander applications
			total price net, excluding VAT, excluding custom duties
			VAT (19 % in Germany, other VAT and/or custom duties may apply in other countries)
			system price h/p/cosmos robowalk® expander solution: please ask your dealer for a quotation

specifications: h/p/cosmos robowalk® expander system

running machine:	**h/p/cosmos mercury® med**
order number:	cos30000va08
applications:	running for sports, sports medicine, cardiology, rehabilitation, stress tests & medicine, WITH UserTerminal (display & keyboard), MCU5. stand alone or remote control via interface.
running surface:	L: 150 cm (59.05“) W: 50 cm (19.68“) access H: 18 cm (7.09“) - shock load reduction for the joints - belt surface with non slip material, - max. permissible load: 200 kg (440 lbs)
speed range:	0...22.0 km/h (0...6.1 m/s) (0...13.6 mph) special speed up to 30 km/h on request.
acceleration:	7 levels (3...131 sec. from 0 to max. speed) also for deceleration (for manual or program mode)
elevation:	0...25 % (0...14.0°) adjustable electr., resolution 0.1 % (-25 %...+25 % when using optional reverse belt rotation).
running direction:	switch for reversing running belt direction (option, extra charge); running belt must be adjusted for reverse belt rotation. Max. permissible reverse speed 5 km/h if no safety-harness with fall-stop prevention system is used.
motor system:	3.3 kW (4.5 HP) 3-phase A.C. motor, (maintenance free and brushless 20 years warranty on main drive motor)
power transmission:	frequency inverter, poly-V-belt, very quiet operation
safety systems: CE 0123	CE0123; guideline 93/42/EEC+GL 2007/47/EC; MDD; machinery directive 2006/42/EC; DIN EN 60601-1; DIN EN 60601-1-1; DIN EN 60601-1-2 (EMC approved); DIN EN 60601-1-4; DIN EN 60601-1-6; DIN EN 62304; DIN EN 62353; EN 957-1; EN 957-6; DIN EN ISO 9001; DIN EN ISO 14971; DIN EN ISO 13485; emergency-off-switch (mains off), potential equalisation bolt, transformer for potential-isolation from the mains
safety class / -category:	I / IP20 / B
classification:	IIb medical device / SIA (EN 957)
leakage current:	0.2 mA
ambient condition:	+10...+40 °C (-30...+50°C on request) 30...70 % humidity (up to 100 % on request) 700...1060 hPa barometric pressure 3,000 m (~10,000 ft) max. altitude without pressurization
data (resolutions):	6 LCD displays, 4 LEDs for operation modes, 20 LEDs for display of units & profile no, steps, etc. speed (0.1 km/h or m/sec or m/min or mph), time (00:00) in hours, minutes & seconds, elevation (0.1% or degrees) distance (1 meter... 999.9 km or miles), METS (1 MET) program step/number, energy (1 kJ/kcal), fitness index (1) power (1 Watt), heart rate (1 bpm /beat per minute)
heart rate monitoring:	POLAR wireless (option extra charge), 1 channel receiver ECG-accurate measurement and display beat-to-beat; automatic control of speed and elevation according to programmed target heart rate („cardio mode“)
digital interface:	1 x RS 232 com1 with 9600 bps: incl. PC-protocol, h/p/cosmos coscom® & printer protocol serial. option extra charge: USB-RS232-converter; com2; com3 with 115.200 bps
programs:	42 programs / profiles - 6 exercise profiles (scalable, 131 variations) - 28 test profiles (UKK 2km walktest, Bruce, graded test, Naughton, Ellestad, Gardner, etc.) - 8 free definable programs with 40 progr. steps each
free PC software:	h/p/cosmos para control® for display & remote control incl. 1 x RS232 interface cable 5 m
software (extra charge):	h/p/cosmos para graphics®, h/p/cosmos para analysis® & h/p/cosmos para motion®. PC software for monitoring, recording & analysis.
accessory (free of charge):	external emergency stop & remote control keyboard magnetic fastening, user manual, service box including special oil, 5m PE-cable
colour of frame:	grey aluminium RAL 9007 (powder coated)
handrails:	steel tube handrails 60 mm diameter on both sides
voltage supply:	230 Volt AC 1~/N/PE 50/60 Hz 15A fuse, dedicated line
size of frame:	L: 210 cm (82.67“) B: 82 cm (32.28“) H: 136 cm (53.53“)
net weight:	approx. 200 kg (440 lbs)
gross weight:	approx. 300...350 kg (660...770 lbs)

Optionally available at extra charge: Special frame colours, other handrail designs, special specifications, special voltage supply, special deck sizes and accessories. Weight and package specifications can deviate according to options, accessories and packing. E&OE. Subject to alterations without prior notice.
Warning! Commissioning and instruction only to be conducted by h/p/cosmos trained and authorized personnel. For special applications, at higher speeds or for subjects with higher risk of falling, or if there is not enough safety space behind the treadmill, a fall prevention system (e.g. safety arch with harness & chest belt) is obligatory.
Keep min. L: 2 m (78.74“) x W: 1 m (39.37“) safety space behind treadmills!
No children on or near to treadmills.

specifications: h/p/cosmos robowalk® expander

h/p/cosmos robowalk® expander F 150/50
order number: cos30022va01
The h/p/cosmos robowalk® expander F is an elastic cable system for an h/p/cosmos running machine mounted at the front for providing traction support.

h/p/cosmos robowalk® expander B 150/50
order number: cos30023va01
The h/p/cosmos robowalk® expander B is an elastic cable system for an h/p/cosmos running machine mounted at the rear for providing traction resistance.

classification: CE 0123	I medical device / SI (EN 957)
number of cables:	4 cables at front (2 black, 2 grey) 4 cables at rear (2 black, 2 grey)
max. traction support:	approx. 3 kg (6.6 lbs) for black cables approx. 5 kg (11.0 lbs) for grey cables
max. force for cables:	10 kg (22.0 lbs)
cable diameters:	6 mm
extension range front:	black: 0 ... 160 cm (0 ... 63.0 inch) grey: 0 ... 150 cm (0 ... 59.1 inch)
extension range rear:	black: 0 ... 105 cm (0 ... 41.3 inch) grey: 0 ... 95 cm (0 ... 37.4 inch)
adjustment range front:	11 ... 51 cm (4.3 ... 20.1 inch) in width 60 ... 150 cm (23.6 ... 59.1 inch) in height
adjustment range rear:	24 ... 135 cm (9.4 ... 53.1 inch) in width 20 ... 75 cm (7.9 ... 29.5 inch) in height

The subject‘s legs are attached to the elastic cables with cuffs. During the walking exercise on the treadmill the elastic cables give movement support or resistance. By adjusting the angle of support/resistance either vertically or horizontally movement correction is possible. The patented tension adjustment module involves readable scales on each cable for tension monitoring.

Examples of use include:
motion support, mobilization, locomotion, gait training and gait correction for orthopaedic or neurological problems, coordination and functional training, strength and endurance training.

Compatibility with other h/p/cosmos treadmill models on request.
When ordering please specify the serial number of the treadmill.
The system is not compatible with treadmills from other manufacturers.

The traction device is based on the patented Bodyspider Technology.
See patents EP1221331 and WO9823334. Further patents are pending.
robowalk® is a registered and protected trade mark of Franz Harrer.

Warnings! A safety system to prevent from falling must be used when using the h/p/cosmos robowalk® expander. We recommend the h/p/cosmos safety arch with chest belt, rope and automatic stop of the treadmill or an unweighting system that prevents from falling. The exercise permanently has to be supervised by a physiotherapist or a medical doctor in the field of orthopaedics and/or neurology. Cables and cuffs must not be used for the patient‘s hands, but for the legs only. Disregard of warnings and/or the use of the h/p/cosmos robowalk® expander without a fall protection system is strictly prohibited and may lead to accidents and injuries with fatal consequences. Replace expander cables every 12 months or earlier in case of first sign of wear.

Other applications for which h/p/cosmos is the specialist for high performance systems:

WARRANTY: If an h/p/cosmos product does not operate properly, h/p/cosmos will repair or replace it at no charge, for up to one year from shipment date. Furthermore registration and a documented maintenance record (for example through maintenance contract or through authorized technicians) will extend the warranty for treadmill parts only to 3 years and 20 years on treadmill drive motor and main treadmill frame breakage. In the course of replacement or repair, h/p/cosmos may send you written recommendations of how to prevent re-occurrence of a problem. h/p/cosmos reserves the right to withdraw the warranty if the recommendations are not followed. The customer is responsible for transport charges both to and from h/p/cosmos in all cases, local service may be available for which labour may be charged. This warranty is exclusive and in lieu of all other warranties whether written, oral or implied, including the warranty of fitness for any particular purpose. h/p/cosmos' liability is, in all cases, limited to the replacement price of its product. h/p/cosmos shall not be liable for any other damages, whether indirect, consequential or incidental arising from the sale or use of its product. h/p/cosmos may modify this warranty by signing a specific written description of any modifications.

SAFETY: Please make sure that you read the user manual before operating any item of h/p/cosmos equipment, it contains both operating instruction and service requirements. Clinical staff should instruct their patients, and fitness staff or other professional staff should instruct their members and users in the use, safety and warnings of the equipment before use. Make sure that you have read and understood the safety requirements before using the equipment.

LIABILITY: Failure to comply with the conditions listed below shall absolve h/p/cosmos sports & medical gmbh from any responsibility for the safety, reliability and performance of this equipment. Each operator must read and understand the user manual before using the equipment for the first time. Each user must be instructed in the proper use of the equipment and its accessories. The electrical and mechanical installation of the equipment must comply with the local or national requirements and all installation guides from all respective manuals delivered with the equipment. The equipment must be used in accordance with the instructions for use. We recommend that operators of h/p/cosmos equipment are trained and certified by h/p/cosmos or their appointed agents before use of the equipment. Please contact h/p/cosmos for further details.

All h/p/cosmos running machines are manufactured by h/p/cosmos in Nussdorf-Traunstein/Germany. Accessories may be imported goods.
Abbreviations: lt = without terminal (no display and no keyboard), r = for bicycle and wheelchair use. Wheelchair stabilizer is obligatory and is optional accessory! rs = ski & spikes use.
UMDNS-Code: 14-141 running machines / customs tariff no. sports running machines: 9506 9110 / customs tariff no. medical running machines: 9018 1910

* Use dedicated power supply with dedicated fuse for each running machine (treadmill). 230 volts 16 A types may also be operated at 220 or 240 volts 15 A. Special voltages available.
We recommend a dedicated line 3 phase 400 volt connection and 3-phase treadmill for high speed, fast acceleration and for heavier subjects due to higher performance.

EU, MDD & REGULATORY AFFAIRS INFORMATION: Devices of the sports category must not be used for medical applications. When linking medical treadmills with other devices (ECG, PC, etc.) then only potential isolated interfaces are allowed. Accessory equipment connected to the analog and digital interfaces must be certified according to the respective IEC standards, e.g. IEC 950 for data processing equipment and DIN EN 60601-1 for medical equipment. Furthermore all configurations shall comply with the valid version of the system standard DIN EN 60601-1-1 and EN 62304. Everybody who connects additional equipment to the signal input port or signal output port or via any other linkage possibility, configures a medical system and is therefore responsible that the system complies with the requirements of the valid version of the system standard DIN EN 60601-1-1. (MDD: 13.6.c, DIN EN 60601-1: 6.8.2.c, 19.2.b, 19.2.c). All equipment within a medical system and with metal housing must be linked with potential equalization cables in star form and then connected to the potential equalization bar of the medical used room.

All norms and standards listed in this brochure refer to validity date (year/month) as is was standard at the time/date when this brochure/document was printed. In case there was a transitional period of 2 valid norm editions at that time, then please ask h/p/cosmos or refer to the details as stipulated on the CE declaration of conformity of the product for the precisely validity/issue date of the norm/standard.

DISCLAIMER: All system configurations in this brochure are non binding and may not neccessarily meet all demands of the user's and/or patient´s and/or subject's application and needs. h/p/cosmos is not liable for any mismatch and/or deviation. For a more precisely system configuration recommendation please send precisely demands to h/p/cosmos in writing.

All technical specifications, descriptions, equipment options and images of devices, options and accessories are not binding, and do not represent any guarantee of features and may differ from the product and delivery.

All pictures and configurations shown in this brochure are not binding and may deviate from standard version of the delivered equipment and/or may be available only at extra charge and/or may have been replaced by modified version and/or supply may have been stopped meanwhile.

DELIVERY: The delivery (manufacturing) time for h/p/cosmos running machines up to deck size 190/65cm is 2 to 3 weeks in general. Other models and devices on request. Shipment time 2 to 7 days in Europe and 3 to 5 weeks via sea freight for overseas. Shipment time 2 to 7 days approx. for air freight.

PRICES: All prices net, EXW (ex works) h/p/cosmos factory Germany, in EURO. Valid from 01.05.2011 until 30.04.2012 only for Germany. Prices in other countries can vary significantly. Transport, packing, VAT, import taxes, custom duties, L/C and bank fees, installation and instruction are not included. Possession of this price list or brochure does not constitute an offer to sell; it is for information only. Property and ownership of goods shall remain with the seller and shall not pass to the buyer until full payment of the price has been received. Full terms of trading available on request. E & OE. Subject to alterations without prior notice.

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