h/p/cosmos®

catalogue

therapy & rehabilitation

those who want to learn to walk ... must walk®

[cos100926-01en]

Franz Harrer
President & CEO
co-founder of the year 1988
h/p/cosmos sports & medical gmbh

run ahead of time!®

Dear customers!

It is a great privilege for me to introduce this new catalogue about h/p/cosmos systems and application solutions to you. Since the foundation of h/p/cosmos in the year 1988 our corporation has faced motivating challenges in development and distribution of new products, software and systems for sports, rehabilitation and research applications.

I personally was always driven and highly motivated by the goals, attitude and demands of so many users worldwide. So frequently I had the chance to see many athletes, patients, therapists, scientists and professional users from various fields who were very eager to go beyond their limits.

And it makes me indeed very proud to support achieving the goals of all these people. To see tears of joy in the eyes of people having the chance to walk for their first time after accidents or after walking for their first time in life due to earlier medical problems is a very touching experience which is unique in lifetime.

To see happy faces of athletes who succeeded in competition after years of hard and sometimes painful long exercise and testing periods is reward for all people involved.

Emotions are truly priceless.

Conclusion of the past 23 years of achievement as the President and CEO of h/p/cosmos is I could not imagine any better situation and chance in my life how to serve people and their mission.

I am happy to say that I also found my personal mission.

When reviewing the result of what we could develop and implement within our company history, we can proudly defend our slogan "*run ahead of time*" which became a registered trademark.

Let me take this chance to thank you, all our customers, users, dealers and distributors and all our partners and friends. I feel like we are sharing same values of trust, loyalty and positive commitments within this community and circle. Special thanks goes to all h/p/cosmos employees, staff, suppliers and co-operation partners for always supporting this mission in most professional and ambitious way.

And last but not least I have to thank my family and friends for understanding, support and motivation.

Thank you very much for taking your time to study our latest literature. This catalogue covers the results of years of work in research and development, manufacturing and application know how.

New methodologies and sophisticated system solutions shall serve customers, patients and many people in progress to reach their individual targets.

With cosmic regards

Franz Harrer

PS: Motivating results and latest methodology of applications are also documented on our website and platforms like YouTube and Facebook.

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therapeutic bar training

Those who want to learn to walk ... must walk!®

Your patients desire fast and full recovery. They want to enjoy a pain free and healthy life. The result of your work can help to achieve these goals. Of course, while your expertise and experience is essential, the right choice of tools and methodology is important for the success of the therapy. And it must meet the demands from both patients and therapists!

Physiologically correct walking is one of the most important therapeutic goals. And those who want to learn to walk ... must walk!

Functional gait training for those with a limited ability to walk is only possible with high commitment and involves problems both for therapists and patients.

Those who can not walk overground can not walk on a normal treadmill either. The right treadmill system with specially designed aids and accessories allows a more targeted and more effective therapy. Your patients can train earlier, longer and more frequently with a lower burden to the patient and the therapist. Their treatment is supported and may be more effective and successful.

h/p/cosmos supports the “3 pillars” of success in neurologic rehabilitation

pillar 1: motivating the patient

The robowalk® system uses a safety arch, arm support and un-weighting (body-weight support) help patients to feel safe and secure, giving them the confidence to actively support therapy without the fear of falling.

And also because patients and therapists trust this sophisticated methodology, they are highly motivated.

pillar 2: correct movement pattern / physiological gait

The robowalk® system assists the patients efforts to move. With the help and guidance of the therapist, the patients movement is easier and they are able to learn the correct physiological gait. It can be compared with the power steering of a vehicle.

With the help and guidance of the therapist, the patients movement is easier and they are able to learn the correct physiological gait.

pillar 3: repetition of movement

Patients with neurologic problems (stroke patients for example) often suffer from early fatigue and tire easily. This can create limitations in therapy.

For successful rehabilitation, the patient must repeat the correct movement many times.

For therapists, it can be exhausting to guide the patient’s legs in locomotion therapy, which may limit the success.

The robowalk® system, used with the locomotion treadmill with ergonomic therapist seats is the ideal system to enable the 3rd pillar “repetition of movement” and will help patients walk with the physiological gait pattern.

treadmill ther

physiological gait training - safe and realistic

rapy

treadmill therapy

treadmill therapy

- physiological gait training - safe and realistic
- early initiation of therapy with body weight support
- therapeutic freedom by controlling the treadmill from a variety of positions
- traceable results of treatment by simple documentation

physiological gait training - safe and realistic

- realistic exercises with fall prevention?
- safe access onto the treadmill from wheelchair?
- early start to walking exercises - but how?
- physiological gait training - even with obese patients?

secure access even with crutches and out of a wheelchair

You know the situation: Some of your patients come on crutches or in wheelchairs to their therapy. The first difficulty will follow immediately when your patients access the treadmill their grip is transferred from the walking aids to the handrail. Wheelchair users need a way to support themselves on the handrail when getting up from the wheelchair.

The h/p/cosmos system for rehabilitation has a low entry height and long handrails that extend to the end of the walking surface. Patients with an impaired ability to walk can mount the treadmill more safely. A professional wheelchair ramp is optionally available as an accessory which allows comfortable access onto the running surface for most types of wheelchairs. See picture on page 22.

The h/p/cosmos mercury® med treadmill system comes with a running surface of L: 150cm (59.05“) x W: 50cm (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: 450cm x W: 300cm are available.

Custom-made models designed for higher body weights and for special applications are manufactured by h/p/cosmos.

early start of therapy with body weight support

The course of therapy should start as early as possible and should be enjoyable for both the patient and the therapist. Therefore, body weight support of the patient is necessary in many cases.

The patented and individually adjustable h/p/cosmos arm supports allow for this type of weight support and give both stability and safety.

Supporting the elbows on the firm but cushioned and U-shaped arm support and additionally holding the two ergonomic hand grips has tremendous positive impact on the comfort of the patient. It psychologically boosts the motivation to walk with fewer worries of stumbling or fear of failure and pain. Thus, the results of therapy can be improved significantly! The arm support is also frequently used for stroke patients or seniors without the need of un-weighting.

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, 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.

As soon as the progress of therapy allows, you can simply fold away the arm support and continue to use the system as a „normal“ treadmill without restriction.

physiological gait training even with obese patients

The correct therapy treadmill must be able to start at very low speeds for obese patients as they can often only walk very slowly. Likewise patients with limited walking ability also need a slow and smooth start without any juddering.

The h/p/cosmos mercury® med treadmill is approved for patients weighing up to 200 kg (440 lbs, higher weight possible on request) and the powerful 3.3 kW (4.5 HP) drive motor allows a slow, patient-friendly start at speeds from 0.1 km/h. So all your patients can start their therapy slowly and more safely. Max. weight load on arm support is 140 kg (280 lbs).

simple operation and control for both patient and therapist

Adjusting the speed and elevation or an immediate stop: both the therapist and patient need access to these functions at all times. The operation of the h/p/cosmos mercury® med is simple: it begins with start and with stop the treadmill stops, two buttons for speed (+ and -) and two more for elevation. This operation is clear for the therapist and the patient. The necessary safety for successful and stressless therapy.

more freedom of therapy by flexible control options

During therapy the therapist often needs to guide the patient's legs to optimise their movement. In doing so there is no access to the UserTerminal (control panel with keyboard and display) on the handrail. The additional keyboard can be mounted on the arm support for the patient, or either on the left or right of the motor hood.

Even when the therapist is working with the patient's legs in an ergonomic position, he can control the treadmill start, stop, speed and elevation functions. An additional stop button is incorporated in the hand grip for the patient.

optionally: biomechanical-module

Optionally the h/p/cosmos mercury® med treadmill can be equipped with sophisticated force plates and additional gait analysis software.

You can find more details on page 25.

downhill to success
optimal fall prevention through eccentric training

Walking downhill is often a difficult exercise for many patients and is frequently avoided. This can lead to accidents later on through lack of practice. Therefore practicing walking downhill in a safer therapeutic environment and utilizing modern accessories is a useful tool for fall prevention. The reverse belt rotation function allows your patients to practice their downhill walking in a convenient and supervised environment. Eccentric training causes an intense training stimulus. At the same time the demands on the cardiovascular system are not so high compared to walking uphill.

For those patients who have a weakness of the dorsiflexors, steep downhill training allows smoother walking and therefore effective training because the forefoot doesn't need to be lifted. Downhill walking widens the scope of applications and therapies for various other indications and goals.

traceable results of treatment through fast documentation

The results of the treatment course should be well documented. This is not just important for patients and families, but also for the participating doctors and insurance companies. Good documentation must be readily available and easy to interpret.

As soon as the therapy session has finished and the stop button is pressed the h/p/cosmos satellite print, which is connected directly to the treadmill, prints the complete documentation. This allows easy and quick to understand documentation of treatment progress without significant expenditure of time. All relevant exercise results and data such as duration, speed, elevation, distance, heart rate, fitness index, date, time and even treadmill serial number for traceability are included in the printout, even without using any PC or software. Just write the patient's name and remarks by hand.

recommended configuration treadmill therapy h/p/cosmos mercury® med

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	handrails long, 2 pillars (surcharge) as shown on picture above
3.	1	cos00098100045	reverse belt rotation for downhill simulation
4.	1	cos00098010025	2nd interface port COM2 for PC, ECG-, ergospirometry-, blood-pressure-monitor system or printer
5.	1	cos00097010035	interface cable RS232, 10 m
6.	1	cos12013	h/p/cosmos arm support with 3 joints, adjustable in height and width (patent no.: DE19916508A1)
7.	1	cos10107	h/p/cosmos additional stop-button for arm support, right
8.	1	cos100680	h/p/cosmos additional keyboard for arm support and for remote control, 6 keys, 2 m cable
9.	1	cos10111-01	mounting for additional keyboard on arm support
10.	1	cos11750	mounting for additional keyboard at the motor hood, right
11.	1	cos14327	mounting for additional keyboard at the motor hood, left
12.	1	cos14954	h/p/cosmos satellite print - printer-set for direct documentation without PC, incl. laser printer, RS232 interface converter with cable, printer rack/stand made of steel
13.	1	cos10223	potential equalization cable, 5 m (required for medical systems)
14.	1	cos10085	packing pallet & cardboard hood
15.	1	cos60098010021	shipping costs door to door within Europe, confirmed price on request
16.	1	cos15732-os/-eu	installation & instruction treadmill
			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 solution for treadmill therapy: please ask your dealer for a quotation

Please refer to the information about prices, conditions, illustrations and recommended system configurations which can be found on page 48.

specifications h/p/cosmos mercury® med

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 and/or remote control via interface.
running surface:	L: 150 cm (59.05“) W: 50 cm (19.68“) access height H: 18 cm (7.09“) - shock load reduction for the joints - belt surface with non slip material - max. permissible load: 200 kg (440 lbs) up to 400 kg (880 lbs) on request
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; directive 93/42/EEC + 2007/47/EC; MDD; machinery directive 2006/42/EC; EN 60601-1; EN 60601-1-1; EN 60601-1-2 (EMC approved); EN 60601-1-4; EN 60601-1-6; EN 62304; EN 62353; EN 957-1; EN 957-6; ISO 9001; EN ISO 14971; 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 (MDD) / S, I, A (EN 957) active therapeutic device & active diagnostic device
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
display (resolutions):	6 LCD displays, 4 LEDs for operation mode, 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, 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“)
interface digital:	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; com4.
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. 1x RS232 interface cable 5 m
software (extra charge):	h/p/cosmos para graphics®, para analysis® & para motion®. PC software for monitoring, recording & analysis.
accessory (free of charge):	user manual, bottle holder with 2 h/p/cosmos 0.5 l bottles, service box incl. special oil, 5 m PE-cable
colour of frame:	grey aluminium RAL 9007 (powder coated);
handrails:	steel tube handrails 60 mm (2.36“) diameter on both sides
voltage supply:	230 Volt AC 1~/N/PE 50/60 Hz 15A fuse breaker, dedicated line
size of frame:	L: 210 cm (82.67“) W: 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.

un-weighting

success through adjustable un-weighting

treadmill therapy with un-weighting

treadmill therapy with un-weighting

- earlier start of treatment in an ergonomic environment
- optimal therapy through adjustable un-weighting
- safety and support - also for children
- traceable results of treatment by simple documentation

success through adjustable un-weighting

- physiological gait training - even with children?
- natural gait even with body weight support?
- safe access onto the treadmill out of a wheelchair?
- early start to walking exercises - but how?

easy access and stable for large and small

Every patient is different: bigger or smaller, different body shapes and of course individual incapacities. Some use wheelchairs, others need crutches and if your patients are children you need a highly flexible and especially motivating treadmill solution.

The h/p/cosmos therapy system is equipped with adjustable handrails that improve safety to both tall and short patients both whilst entering the treadmill and during the therapy.

best results through individual and physiological support

The course of therapy should start as early as possible and be enjoyable for the therapist and patient. This treatment must always be adjusted to the skills and progress of the patient - and ensure natural walking. The adjustable un-weighting level of the h/p/cosmos airwalk® allows individual optimization of your therapy sessions. Adjustment is made with an air control valve and a pressure meter gives the reading of the un-weighting. The dynamics of the central one-point suspension supports natural up and down movement of the upper body during walking. 360° rotations in both directions for sidesteps and reverse walking under safe conditions are also possible.

Through this, natural walking is possible even during un-weighting. The h/p/cosmos airwalk® system vests were designed for best possible unrestricted movement, are easy to clean and are available in almost all sizes - even for children.

The central one-point suspension allows the patient to turn on the treadmill and train walking sideways and backwards. Velcro straps for quick attachment to the vest and the leg cuffs give the therapist the possibility to correct the trained movements, for example by supporting rotation force of the legs to inner or outer direction through stretchable straps for gait corrections. With some additional equipment there is a very broad spectrum of treatment options available. Ideas, examples and suggestions can be found in the h/p/cosmos airwalk® user manual and the specially developed "h/p/cosmos airwalk® application manual" which is available on request from h/p/cosmos.

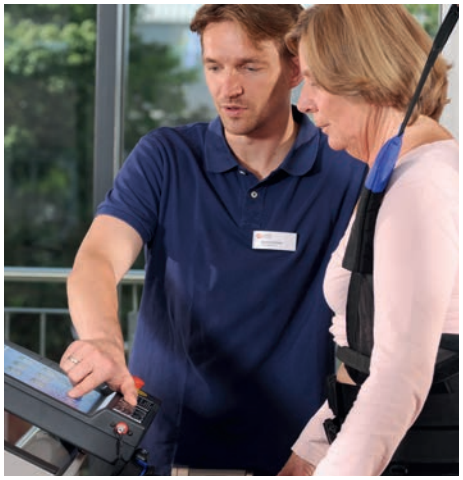
physiological gait training even with obese patients

The correct therapy treadmill must be able to start at very low speeds for obese patients as they can often only walk very slowly. Likewise patients with limited walking ability also need a slow start without any juddering.

The h/p/cosmos mercury® med treadmill is approved for patients up to 200 kg (440 lbs) body weight and the very powerful 3.3 kW (4.5 HP) drive motor allows a slow, patient-friendly start at speeds from 0.1 km/h.

In addition a special version of the h/p/cosmos airwalk® for un-weighting of up to 160 kg (350 lbs) and also a specially designed arch version for free access to the patient from the side is possible. So you can respond to almost any patient's and therapist's needs. A great variety of applications is ensured through various modes like balance mode, static and dynamic un-weighting. An optional and almost noiseless air compressor supplies the required power for the h/p/cosmos airwalk® 70 and 160 models.

system solution treadmill therapy with un-weighting



simple operation and control for both patient and therapist

Adjusting the speed and elevation or an immediate stop: both the therapist and patient need access to these functions at all times.

The operation of the h/p/cosmos mercury® med is simple: it begins with start and with stop the treadmill stops, two buttons for speed (+ and -) and two more (up and down) for elevation. This operation is clear for the therapist and the patient.

The LCD displays with excellent contrast give clear readings of all data even under bright sunlight conditions close to windows of the therapy room. An emergency magnetic stop with lanyard connected to the patient also can be utilized. However, thin lanyards may stop the running machine but never can prevent the subject from falling.

The h/p/cosmos airwalk or the h/p/cosmos safety arch system can do so by catching the patient's full body weight in emergency case automatically. The necessary safety for successful and stressless therapy must be on top of the priority list of all of us.

more freedom of therapy by flexible control options

During therapy the therapist often needs to guide the patient's legs to optimise their movement. In doing so there is no access to the UserTerminal (control panel with keyboard and display) on the handrail. The additional keyboard can be mounted either on the left or right of the motor hood. Even when the therapist is working with the patient's legs in an ergonomic position, he can control the treadmill start, stop, speed and elevation functions.

With an optionally extension cord for the additional keyboard or with the free h/p/cosmos para control software the treadmill can fully be controlled also from the therapist standing in distance behind the treadmill.

downhill to success. optimal fall prevention through eccentric training

Walking downhill is often a difficult exercise for many patients and is frequently avoided. This can lead later on to accidents through lack of practice. Therefore practicing walking downhill in a safer therapeutic environment and utilizing modern accessories is a useful tool for fall prevention. The reverse belt rotation function allows your patients to practice their downhill walking in a convenient and supervised environment. Eccentric training causes an intense training stimulus. At the same time the demands on the cardiovascular system are not so high compared to walking uphill.

For those patients who have a weakness of the dorsiflexors, steep downhill training allows smoother walking and therefore effective training because the forefoot doesn't need to be lifted. Also different muscle groups are engaged during eccentric training. Downhill walking widens the scope of applications and therapies for various other indications and goals.

traceable results of treatment through fast documentation

The results of the treatment course should be well documented. This is not just important for patients and families, but also for the participating doctors and insurance companies. Good documentation must be readily available and easy to interpret. However, time limits in daily work makes it difficult to cope up with good documentation for all daily therapy results. As soon as the therapy session has finished and the stop button is pressed the h/p/cosmos satellite print, which is connected directly to the treadmill, prints the comprehensive documentation. This allows easy and quick to understand documentation of treatment progress without significant expenditure of time. Alternatively, for computer based and stored documentation the optionally available h/p/cosmos para graphics PC software is also an excellent tool. It allows remote control and graphical documentation and comparison of graphs through overlay at the same time.

system solution treadmill therapy with un-weighting

recommended configuration treadmill therapy with un-weighting system

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.	0	cos10145	handrails long, 2 pillars (alternatively to pos. 3)
3.	1	cos10030	optionally (alternatively to pos. 2) as shown on picture above (surcharge): handrails adjustable (for therapy with children and persons of short stature)
4.	1	cos00098100045	reverse belt rotation for downhill simulation
5.	1	cos00098010025	2nd interface port COM2 for PC, ECG-, ergospirometry-, blood-pressure-monitor system or printer
6.	1	cos00097010035	interface cable RS232, 10 m
7.	1	cos100680	h/p/cosmos additional keyboard for remote control, 6 keys, 2 m cable
8.	1	cos11750	mounting for additional keyboard at the motor hood, right
9.	1	cos14327	mounting for additional keyboard at the motor hood, left
10.	1	cos10092	**h/p/cosmos airwalk** 70, pneumatic unweighting-system, incl. 1 vest size M
11.	1	cos10112	vest XSmall for h/p/cosmos airwalk, light blue for waist size for children
12.	1	cos10095	vest Small for h/p/cosmos airwalk, red for waist size 55...80 cm (22...32“)
13.	1	cos10096	vest Medium for h/p/cosmos airwalk, blue for waist size 81...112 cm (32...44“)
14.	1	cos10097	vest Large for h/p/cosmos airwalk, yellow for waist size 112...145 cm (44...57“)
15.	1	cos13752	replacement cable assembly for h/p/cosmos airwalk® 35, 70 and 160
16.	1	cos10094	compressor for h/p/cosmos airwalk 70 or 160 (not required if suitable compressed air supply available)
17.	1	cos12607-00	base plate 150/50 for h/p/cosmos airwalk (not required for floor fitting)
18.	1	cos14954	h/p/cosmos satellite print - printer-set for direct documentation without PC, incl. laser printer, RS232 interface converter with cable, printer rack/stand made of steel
19.	3	cos10223	potential equalization cable, 5 m (required for medical systems)

(continued on next page)

20	1	cos10085	packing pallet & cardboard hood
21.	1	cos60098010021	shipping costs door to door within Europe, confirmed price on request
22.	1	cos15732-os/-eu	installation & instruction treadmill
23.	1	cos14320	presenter / workshop for 1 day practical work with unweighting and treadmills
			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 solution for treadmill therapy with un-weighting: please ask your dealer for a quotation

Please refer to the information about prices, conditions, illustrations and recommended system configurations which can be found on page 48.
*The 1-day-workshop is recommended for beginners for these applications. In case you are already experienced in this application utilizing this type of equipment, then you do not need this workshop and it can be deleted from the configuration and the total offered package price.

specifications h/p/cosmos mercury® med

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 and/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) up to 400 kg (880 lbs) on request
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; directive 93/42/EEC + 2007/47/EC; MDD; machinery directive 2006/42/EC; EN 60601-1; EN 60601-1-1; EN 60601-1-2 (EMC approved); EN 60601-1-4; EN 60601-1-6; EN 62304; EN 62353; EN 957-1; EN 957-6; ISO 9001; EN ISO 14971; 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 (MDD) / S, I, A (EN 957) active therapeutic device & active diagnostic device
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
display (resolutions):	6 LCD displays, 4 LEDs for operation mode, 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, 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“)
interface digital:	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; com4
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. 1x RS232 interface cable 5 m
software (extra charge):	h/p/cosmos para graphics®, para analysis® & para motion®. PC Software for monitoring, recording & analysis
accessory (free of charge):	user manual, bottle holder with 2 h/p/cosmos 0.5 l bottles, service box incl. special oil, 5 m PE-cable
colour of frame:	grey aluminium RAL 9007 (powder coated)
handrails:	steel tube handrails 60 mm (2.36“) diameter on both sides. In case of option adjustable handrails: - adjustable in height and width via joints including scale with numbers - adjustable for body heights from 100 cm to 200 cm -handrail tube diameter: 43 mm (1.69“) - max. weight load to the system: 140 kg (308 lbs)
voltage supply:	230 Volt AC 1~/N/PE 50/60 Hz 15A fuse breaker, dedicated line
size of frame:	L: 210 cm (82.67“) W: 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.

locomotion th

optimized for both patient and therapist

locomotion therapy

- locomotion training – optimized for patient and physiotherapist
- earlier initiation of therapy with the wheelchair access ramp, adjustable handrails and un-weighting
- healthier work for therapists through therapy seats and footrests
- traceable results of treatment through simple documentation

optimized for both patient and therapist

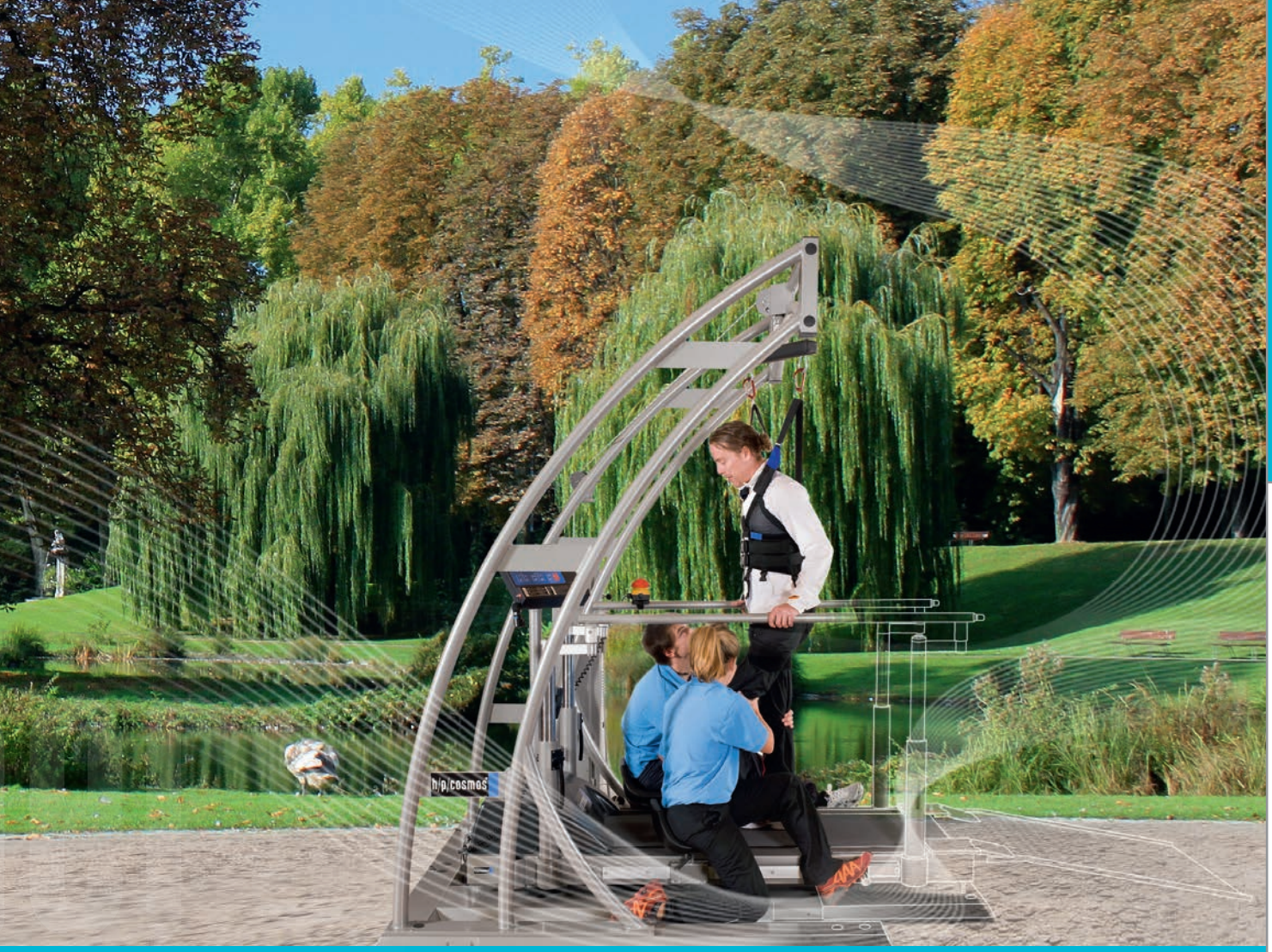
- an early start into locomotion therapy – but how?
- getting up safely from a wheelchair?
- manual locomotion without back pain for the physiotherapist?
- locomotion therapy ergonomic and motivating for therapist?

safer start to the therapy – also from a wheelchair

Those who want to learn to walk ... must walk! Therefore, functional training on a treadmill is a key component of a neurological treatment facility. At the same time locomotion in practice is not always easy to implement. It starts when a wheelchair patient begins their therapy.

Getting onto the treadmill deck can be a challenge already. Therefore h/p/cosmos has equipped the system with an ergonomic wheelchair ramp. Furthermore the handrails contain telescopic extensions which can be pulled out 55 cm (21.65“) to give additional support to the patients. They can assist and hold the handrails in many cases even during entering the treadmill on the ramp. And most patients are happy to help if we give them such tools.

Then they can stand up directly out of the wheelchair with support from the h/p/cosmos airwalk® vest and un-weighting system holding on to the individually adjusted handrails. Thus, the therapy can start successfully without much effort.



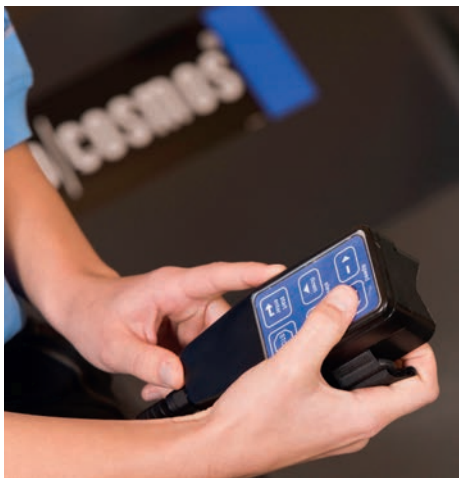
early start of therapy with body weight support

In neurological rehabilitation it is important for the patient to start exercising as early as possible. Therefore an individual and optimal un-weighting system is crucial for the patient. The h/p/cosmos airwalk un-weighting system supports a natural gait pattern. The single-point suspension allows dynamic up and down movement when walking and at the same time allows freedom in movement and body rotations where wanted. Additional fixation straps for further stabilization may be utilized if desired and if recommended for the patient. The un-weighting, depending on the progress of therapy, can be adjusted electronically between 1 kg and 75 kg (2.2 and 165 lbs). The treadmill itself starts at 0.1 km/h speed and is driven by a very powerful 3.3 kW (4.5 HP) drive motor. Even heavy patients at low speeds can exercise smoothly without juddering.

The remote control for electronically re-adjustment of un-weighting has magnet holder and can be positioned on either side for the seated therapists. This is really important during therapy! With the h/p/cosmos system therapists can perform frequently required re-adjustments of parameters from seating position.

improved ergonomics for healthier therapist

Due to an un-ergonomic working position and the difficulty of manipulating the patient's legs the therapist may find it difficult or even impossible to work with normal treadmills in manual locomotion therapy. Especially after several consequential sessions the therapists experience fatigue and often pain in shoulders and in the 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 cares for the therapist first. We understand that only motivated and healthy therapists can serve the patient's needs best.



The simple to adjust rotating therapist seats – with excellent lumbar support – and corresponding foot supports 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 therapist is optimized. Very wide running surfaces would lead to further problems, therefore h/p/cosmos recommends the 50 cm (19.68“) wide deck for this application and not the 65 cm deck of the h/p/cosmos quasar® med. No obstructive bars from un-weighting frames or other obstacles give the therapist un-interrupted access to the patient‘s legs. The arch design of the h/p/cosmos airwalk se 135 perfectly supports that. This is also important for lateral motion analysis.

simple operation and control for therapist and patient

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 un-weighting, speed and elevation parameter 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. Therefore this shall be avoided.

To simplify this, the additional keyboard and the additional stop can be placed by 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) or on the vertical telescope pillars or even on the nearby tubes of the arch shaped unweighting system frame.

downhill for optimal therapeutic results

Among other potential uses in therapy, especially for patients with weakness of the dorsiflexors, the possibility of walking downhill with a sufficient gradient is a big help. By using the reverse belt rotation the incline of the treadmill can be used as a downhill gradient up to 15% in this system. With the single point suspension un-weighting system the patient just turns round on the treadmill in no time. By simply turning a key switch, the running belt moves in the opposite direction. The automatic belt centring aligns the running belt during reverse and downhill operation on the h/p/cosmos locomotion® treadmill.

traceable results of treatment through fast documentation

The results of the treatment course should be well documented. This is not just important for patients and families, but also for the participating doctors and insurance companies. Good documentation must be readily available and easy to interpret.

As soon as the therapy session has finished and the stop button is pressed the h/p/cosmos satellite printer, which is connected directly to the treadmill, prints the comprehensive documentation. This allows an easy and quick understanding regarding documentation of treatment progress without significant expenditure of time. All relevant exercise results and data such as duration, speed, elevation, distance, heart rate, fitness index, date, time and even treadmill serial number for traceability are included in the printout, even without using any PC or software. Just write the patient's name and remarks by hand.

optionally: biomechanical-module

Optionally the h/p/cosmos locomotion 150/50 DE med treadmill can be equipped with sophisticated force plates and additional gait analysis software. This allows measuring and visualization of vertical ground reaction forces, force distribution, centre of pressure, step length and stride length and a variety of time based and other valuable biomechanical parameters. This leads to a state of the art biomechanical gait analysing system for therapy, research and sports and can be even combined with motion analysing components and EMG through the h/p/cosmos coscom® interface standard.

recommended configuration locomotion therapy h/p/cosmos locomotion 150/50 de med

pos.	qty.	order number	product description
1.	1	cos30001va02	running machine h/p/cosmos locomotion 150/50 de med running surface 150 x 50 com, speed 0…10.0 km/h, elevation -15…+15%, reverse belt rotation; adjustable therapist seats with ergonomic lumbar support and corresponding foot rests, adjustable handrails in height and width with gas spring support, extra emergency stop, extra keyboard, drive motor 3.3 kW, interface port com1 and com2, electronic motor brake, movable user terminal; h/p/cosmos para control PC software for remote control
2.	1	cos14663	wheelchair ramp for easy access to the running surface; suitable for wheelchairs with a width of up to 78 cm (30.71“); footprint of wheelchair ramp: (L x W): 120 x 80 cm (47.24“ x 31.50“)
3.	1	cos16487	3rd interface port RS232 com3 with 115,200 bps for PC, ECG-, ergospirometry-, blood-pressure-monitor system or printer
4.	1	cos14954	h/p/cosmos satellite print - printer-set for direct documentation without PC, incl. laser printer, RS232 interface converter with cable, printer rack/stand made of steel
5.	3	cos10223	potential equalization cable, 5 m (required for medical systems)
6.	1	cos00097010035	interface cable RS232, 10 m
7.	1	cos10084	packing pallet & cardboard hood for treadmill
8.	1	cos30017va01	unweighting system h/p/cosmos airwalk 135se dynamic spring elec. unweighting system, patient weight: max. 135 kg (297 lbs), patient height: max. 200 cm (6‘ 6.72 “), dynamic un-weighting range: 1…75 kg (2.2...165 lbs) (infinitely adjustable) footprint of unweighting system with treadmill and with wheelchair ramp: L 354 x W 207 cm (11‘ 7.37“ x 6‘ 9.48“) footprint of unweighting system with treadmill without wheelchair ramp: L 234 x W 207 cm (7‘ 8.12“ x 6‘ 9.48“)
9.	1	cos10112	vest XSmall for h/p/cosmos airwalk, light blue for waist size for children
10.	1	cos10095	vest Small for h/p/cosmos airwalk, red for waist size 55...80 cm (22...32“)
11.	1	cos10096	vest Medium for h/p/cosmos airwalk, blue for waist size 81...112 cm (32...44“)
12.	1	cos10097	vest Large for h/p/cosmos airwalk, yellow for waist size 112...145 cm (44...57“)
13.	1	cos100320	replacement un-weighting rope for h/p/cosmos airwalk® se
14.	1	cos100573va23	crate for transport h/p/cosmos airwalk® 135se
15.	1	cos60098010021	shipping costs door to door within Europe (confirmed price on request)
16.	1	cos15732-os/-eu	installation & instruction treadmill

(continued on next page)

17.	1	cos14320	presenter / workshop* for 1 day practical work with unweighting and treadmills

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 solution for locomotion therapy:
please ask your dealer for a quotation

Please refer to the information about prices, conditions, illustrations and recommended system configurations which can be found on page 48.

*The 1-day-workshop is recommended for beginners for these applications. In case you are already experienced in this application utilizing this type of equipment, then you do not need this workshop and it can be deleted from the configuration and the total offered package price.

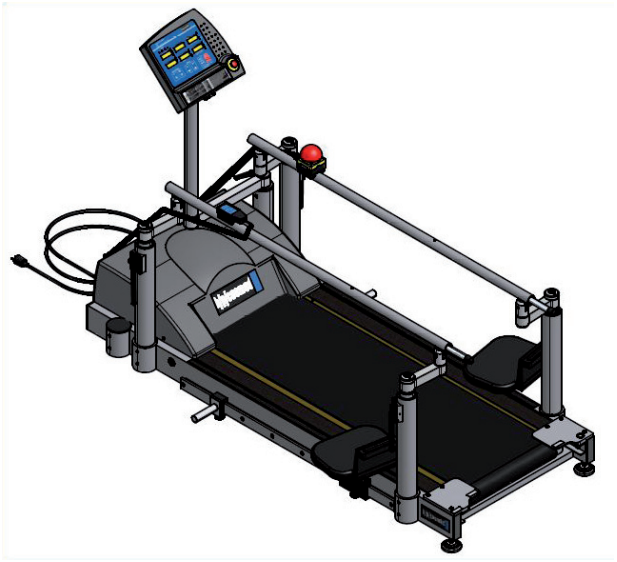
system solution locomotion therapy

specifications h/p/cosmos® locomotion 150/50 de med

running machine:	h/p/cosmos® locomotion 150/50 de med with therapist seats, foot rests and adjustable handrails
order number:	cos30001va02
applications:	running for sports, sports medicine, locomotion therapy, cardiology, rehabilitation, stress tests & medicine. WITH rotatable UserTerminal (6 displays & keyboard), MCU5 stand alone and/or remote control via interface.
running surface:	L: 150 cm (59.05") W: 50 cm (19.68") access height H: 19 cm (7.48") - shock load reduction for the joints - reinforced running belt with profiled surface, 5 mm (0.2") thick, material real rubber - max. permissible load: 200 kg (440 lbs) up to 400 kg (880 lbs) on request
speed range:	0...10.0 km/h (0...2.8 m/s) (0...6.2 mph)
acceleration:	7 levels (3...131 sec. from 0 to max. speed) also for deceleration (for manual or program mode)
elevation:	-15...+15 % (-8.5...+8.5°) adjustable electr., resolution 0.1 % up to -15 % when using reverse belt rotation
running direction:	switch for reversing running belt direction as standard. Max. permissible reverse speed for this machine is 5 km/h (3.1 mph)
electronic motor brake:	prevents almost all movement of running belt when speed is set to 0 km/h caused by elevation/gravity or when mounting or dismounting the treadmill
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; directive 93/42/EEC + 2007/47/EC; MDD; machinery directive 2006/42/EC; EN 60601-1; EN 60601-1-1; EN 60601-1-2 (EMC approved); EN 60601-1-4; EN 60601-1-6; EN 62304; EN 62353; EN 957-1; EN 957-6; ISO 9001; EN ISO 14971; 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 (MDD) / S, I, A (EN 957) active therapeutic device & active diagnostic device
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
touch-screen display (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®, para analysis® & 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, 5 m PE-cable
colour of frame:	grey aluminium RAL 9007 (powder coated)
handrails:	both sides steel tube 40 mm (1.57") ø, gas-spring support and scales, adjustment in height 70...115 cm (27.56...45.28") and width 43...114 cm (16.93...44.88"), with 2 telescope bar extensions 55 cm (21.65") for wheelchair users
voltage supply:	230 Volt AC 1~/N/PE 50/60 Hz 15A fuse, dedicated line
size of frame:	L: 218 cm (85.83") without wheelchair ramp L: 338 cm (133.07") incl. optional wheelchair ramp W: 100 cm (39.37") without therapist seats W: 128 cm (50.39") incl. 2 therapist seats (standard) H: 144 cm (56.69") including UserTerminal
footprint:	treadmill with unweighting system and with wheelchair ramp: L: 354 x W: 207 cm (139.37 x 81.5") treadmill with unweighting system without wheelchair ramp: L: 234 x W: 207 cm (92.13 x 81.5")
net weight treadmill:	approx. 376 kg (827 lbs)
gross weight treadmill:	approx. 460...510 kg (1012...1122 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 airwalk® se 135

unweighting system:	h/p/cosmos airwalk® se 135
order number:	cos30017va01
applications:	patient-lift for static and dynamic body weight support, for locomotion therapy, neurology, rehabilitation, coordination training, balance training, sports performance and speed training for fitness and competitive sport.
patient weight:	max. user weight load 135 kg (297 lbs)
subject scale:	electronic weight display with an accuracy of approx. ± 2 kg (4.4 lbs). due to rope elasticity and friction of the rope pulleys (indirect measurement via pulleys) the weight measurement system is of limited use as a user scale.
weight support:	static: approx. 1...135 kg (2.2...297 lbs) continuously adjustable lifting/lowering/carrying of the patient (e.g. wheelchair transfer or balance exercise mode); dynamic: approx. 1...75 kg (2.2...165 lbs) continuously adjustable vertical speed of patient lifter approx 30...50 mm/s (1.18...1.97"/sec) during dynamic exercise mode
subject size / system height:	max. user height 200 cm (78.7"); standard system height 267 cm (105.11"); at an elevation of more than 10% use may be limited by the running-machine model, the height of the user and the kind of (sportive) exercise being conducted. a higher traverse is available at extra cost for users of up to 220 cm (86.61"). system height with higher traverse is 298 cm (117.32")
useable range:	vertically approx. 18 cm (7.09") for dynamic un-weighting. limitations - see patient size. optional high traverse for patients of up to 220 cm (86.61") available
rope:	polyester rope with 8 mm (0.32") ø (to change annually or earlier in case of first signs of wear)
operation:	- electrical remote control with magnetic attachment (cable length approx. 250 cm (98.43") with 4 buttons for: - patient lift (up/down or raising/lowering of the patient, setting of the dynamic work range) - unweighting (increase/decrease of the unweighting)
safety systems: CE 0123	CE0123; directive 93/42/EEC + 2007/47/EC; MDD; machinery directive 2006/42/EC; EN 60601-1; ISO EN 10535 (patient lifters), potential equalisation bolt; mechanical quick release (for safety in case of failure of the electrical control)
safety class / -category:	I / IP20 / B
classification:	IIa medical device (MDD) active therapeutic device & active diagnostic device
leakage current:	0.2 mA
ambient condition:	+10...+40 °C 30...70 % humidity 700...1060 hPa barometric pressure 3,000 m (~10,000 ft) max. altitude without pressurization
data (resolutions):	1 LCD digital display for weight in kg 1 mechanical display for position in working range 1 mechanical display for position in pre-set unweighting
free accessories:	user operation and service manual, h/p/cosmos airwalk application manual, 1 unweighting vest cos10096 (size M, waist 81...112 cm / 31.89"...44.09") other sizes XS, S, L and XL on request
compatible running machines:	(NOT included in price of h/p/cosmos airwalk®) h/p/cosmos mercury®, h/p/cosmos locomotion®, h/p/cosmos quasar® range, h/p/cosmos pulsar® range in differing specifications, h/p/cosmos venus® 200/75 if mounted in a pit. treadmills from other manufacturers: only if authorized by relevant agency!
colour of frame:	grey-aluminium RAL 9007 (powder coated)
voltage supply:	230 Volt AC 1~/N/PE 50/60 Hz 10A fuse, dedicated line, max. current consumption: 3 Ampere
size of frame:	L: 223...263 cm (87.67...103.54") depending on treadmill L: 195 (76.8") for non h/p/cosmos treadmills W: 207 cm (81.5") H: 267 respectively 296 cm (105.11" or 117.32" depending on traverse normal or high.
net weight un-weighting:	approx. 390 kg (858 lbs) without treadmill
gross weight un-weighting	device approx. 510...580 kg (1122...1276 lbs) without treadmill

Optionally available at extra charge: Special frame colours, other frame designs, special specifications, special voltage supply and special accessories. Weight and package specifications can deviate according to options, accessories and packing. E&OE. Subject to alteration without notice.

Warning! Commissioning and instruction only to be conducted by h/p/cosmos trained and authorized personnel.

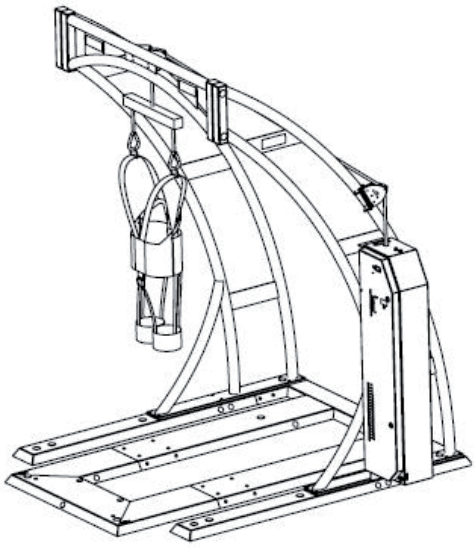
For special applications, at higher speeds or for subjects with higher risk of falling or if there is not enough safety space behind the treadmill, a fall prevention system (e.g. un-weighting system or safety arch with harness & chest belt) is obligatory.

Inspect the rope 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.

Free safety distance behind the device in case of the use of a treadmill: at least
L: 2 m (78.74") x W: 1 m (39.37")

No children on or near to treadmills and/or other moving machines and equipment.

Patents pending.



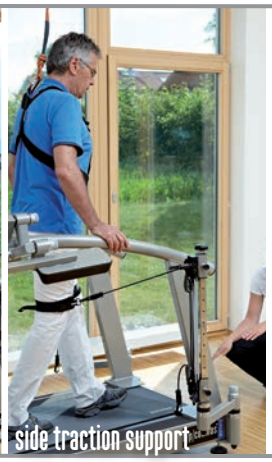
innovative therapy methodology


traction support shank


cross-over traction support


traction resistance thigh


traction resistance shank


side traction support


combined
traction support & resistance

ander

robowalk expander

rehabilitation system robowalk® expander

- gait training and gait correction for orthopaedic or neurological patients
- gait improvement combined with strength and coordination training
- motion support and mobilization of spastic patients
- supports therapists in manual locomotion therapy
- supports the the “3 pillars” of success in neurologic rehabilitation:
  1st motivation of the patient, 2nd correct movement pattern / physiological gait and 3rd repetition of movement

innovative therapy methodology

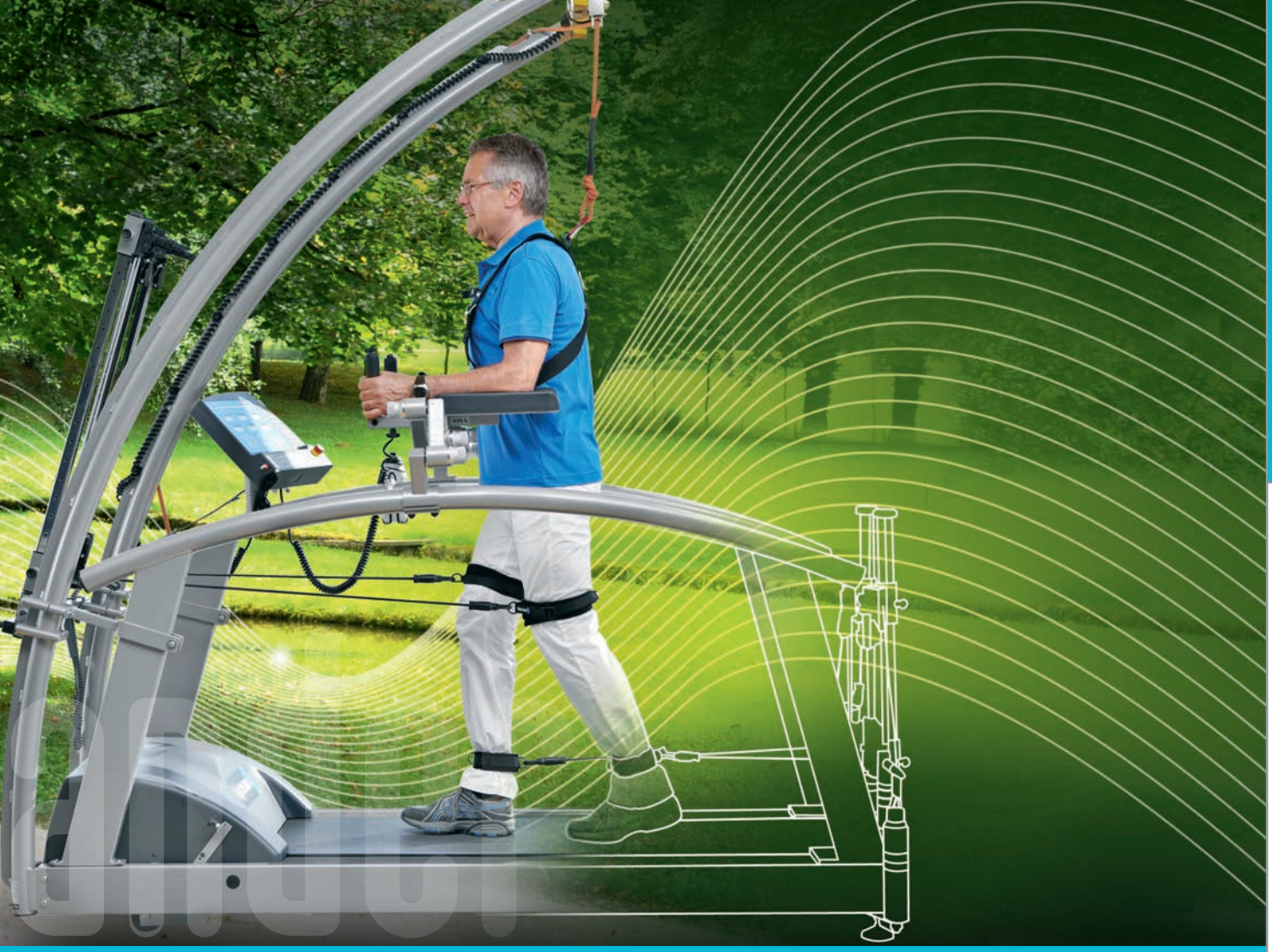
- an early start into locomotion therapy – but how?
- getting up safely from a wheelchair?
- manual locomotion without back pain for the physiotherapist?
- locomotion therapy ergonomic and motivating for therapist?

how does the 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.

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 special h/p/cosmos locomotion 150/50 de med treadmill with incorporated therapist seats and adjustable handrails 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.

robowalk ... the „power steering“ for locomotion therapy

In manual locomotion therapy the front robowalk® expander system with its traction force support on the thighs and / or also simultaneously on the shanks can be compared to a power steering system of a vehicle. The power consuming work and motion is supported by the system but not fully replacing the human effort.

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 (352 lbs) 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. Custom made systems are available.

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
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 F front 150/50 incl. 1 pair leg cuff thigh size: M and 1 pair leg cuff shank size: XS
14.	1	cos30023va01	h/p/cosmos robowalk® expander B back 150/50 without leg cuffs
15.	1	cos101050-L	1 pair leg cuffs thigh for robowalk expander, size: L, yellow (thigh circumference 50...75 cm / 19.5...29.3 inches)
16.	2	cos101052	foot straps including cuff to lift forefoot
17.	1	cos10071-v4.1.0	h/p/cosmos para control® 4.1 PC software for remote control and monitoring
18.	1	cos10223	potential equalization cable, 5 m (required for medical systems)
19.	1	cos14795	pallet and cardboard hood packing 50
20.	1	cos60098010021	shipping costs* door to door within Europe, approx, confirmed price on request
21.	1	cos15732-os/-eu	installation & instruction treadmill
22.	1	cos101094	1 day workshop for h/p/cosmos robowalk expander applications (recommended for beginners)
			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

robowalk® is also available for the h/p/cosmos models locomotion®, gaitway®, quasar® med and pulsar® 3p. Retrofitting is possible for many h/p/cosmos models.

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; directive 93/42/EEC + 2007/47/EC; MDD; machinery directive 2006/42/EC; EN 60601-1; EN 60601-1-1; EN 60601-1-2 (EMC approved); EN 60601-1-4; EN 60601-1-6; EN 62304; EN 62353; EN 957-1; EN 957-6; ISO 9001; EN ISO 14971; 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 (MDD) / S, I, A (EN 957) active therapeutic device & active diagnostic device
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
display (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 including 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):	user manual, bottle holder with 2 h/p/cosmos 0.5 l bottles, service box incl. special oil, 5 m PE-cable
colour of frame:	grey aluminium RAL 9007 (powder coated)
handrails:	steel tube handrails 60 mm (2.36") 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	Im; non-active therapeutic device / S, I, C (EN 957)
number of expander 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

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.

leg cuffs:
1 pair each (left / right) leg cuffs in size XS and M is included in the delivery of robowalk expander F (front system)

Additional leg cuffs with following specifications are available at extra charge:
(1 pair each = 2 pieces = 1 left and 1 right)

cos101051-XS	leg cuff shanks (size: XS / light blue), circumference 14...27 cm / 5.5"...10.6"
cos101050-S	leg cuff thigh (size: S / red), circumference 25...39 cm / 9.8"...15.4"
cos101050-M	leg cuff thigh (size: M / blue), circumference 36...51 cm / 14.2"...20.1"
cos101050-L	leg cuff thigh (size: L / yellow), circumference 49...75 cm / 19.3"...29.5"
cos101050-XL	leg cuff thigh (size: XL / green), circumference on request
cos10125	foot straps including cuff to lift forefoot (one size fits all)

special sizes on request. Additional cuffs please order seperately.

Caution! The cuffs are not included in the delivery of h/p/cosmos robowalk expander B (back system)! They have to be ordered seperately.

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 36 months or earlier in case of first sign of wear.

therapeutic b

easily adjustable handrail bars

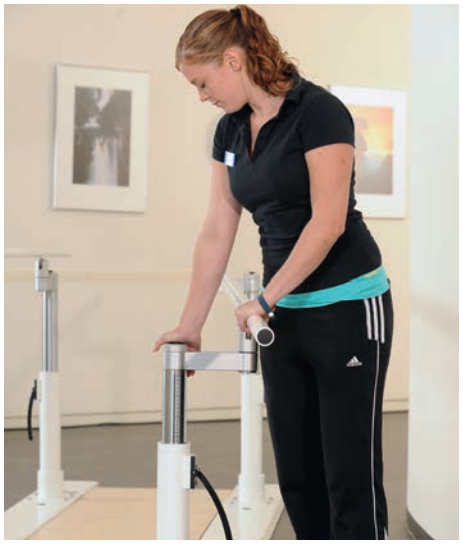
ar training

therapeutic bar training

therapeutic bar training

- easily adjustable handrail bars to complement your current treatment offer
- simple, continuous height adjustment with gas spring support
- reproducible settings through integrated reading scale
- best results through independent width adjustment of the handrails

easily adjustable handrail bars



- easily adjustable handrail bars
- walking bars effortlessly adjustable with one hand?
- handrails in v-form for optimal results?
- optimal setting for hemiparesis patients?

easy and continuous adjustment with gas spring support

Whether in the gym, in the corridor or as a separate training system – walking bars are the ideal complement to the available treatments. The individual settings for height, width and angle of the handrails are crucial for best results, and they have to be quickly and easily adjusted during a busy working day.

push the button

The h/p/cosmos parawalk® has integrated gas piston height adjustment. Adjusting the height is child's play - even with just one hand. The width and angle of the hand rails can be adjusted quickly by lifting the locking lever, pushing the adjustment button for setting the height and after adjustment locking the lever again - that's it.

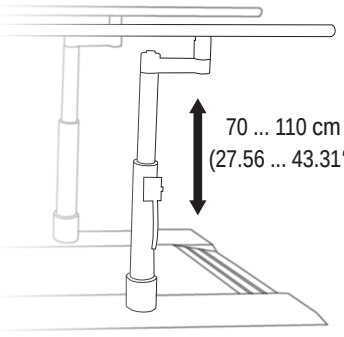
reproducible settings with integrated scale

Once you have found the perfect setting for a patient you will want use this at the next visit straight away. Therefore, the pillars of the h/p/cosmos parawalk® have an integrated reading scale. With the help of the scale you can exactly determine the current position and reproduce simply at the next training session.

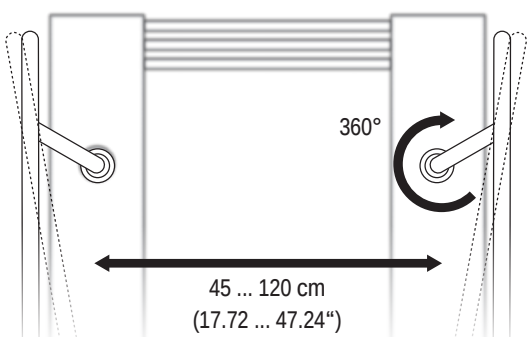
the optimum length

Depending on the space available, the positioning, the patients and therapy target, you will need the optimal walking rail design.

To meet these different needs and requirements the h/p/cosmos parawalk is available with bar lengths of 3, 4 and 5 meters (118.11, 157.48 and 196.95“).



The h/p/cosmos parawalk has integrated gas pistons allowing easy height adjustment from 70 cm to 110 cm with safe locking levers.



recommended configuration therapeutic bar training 4 meter h/p/cosmos parawalk®

pos.	qty.	order number	product description
1.	1	cos30019va01	h/p/cosmos parawalk 4 m parallel bars with wooden plate gas-spring support; very smooth operation; adjustable areas: in width 45…120 cm (17.7...47.2") approx., in height 70…110 cm (27.6 ... 43.3") approx., readable scales (marks) on all 4 pillars, height and width adjustable independently, locking options through levers, minor access wood plate, multi bonded wood plate birch, can be mounted on even floor without cross base plate (including mounting material)
2.	1	cos100917	packing h/p/cosmos parawalk 4 m (13' 1.48") in wooden crate
3.	1	cos60098010021	shipping costs door to door within Europe, confirmed price on request
			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 therapeutic bar training 4 meter: please ask your dealer for a quotation

alternative 1: configuration therapeutic bar training 3 meter h/p/cosmos parawalk®

pos.	qty.	order number	product description
1.	1	cos30018va01	h/p/cosmos parawalk 3m parallel bars with wooden plate (description see above)
2.	1	cos100916	packing h/p/cosmos parawalk 3m (9' 10.11") in wooden crate
3.	1	cos60098010021	shipping costs door to door within Europe, confirmed price on request
			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 therapeutic bar training 3 meter: please ask your dealer for a quotation

Please refer to the information about prices, conditions, illustrations and recommended system configurations which can be found on page 48.

alternative 2: configuration therapeutic bar training 5 meter h/p/cosmos parawalk®

pos.	qty.	order number	product description
1.	1	cos30020va01	h/p/cosmos parawalk 5m parallel bars with wooden plate (description see on page 34)
2.	1	cos100918	packing h/p/cosmos parawalk 5 m (16' 4.85") in wooden crate
3.	1	cos60098010021	shipping costs door to door within Europe, confirmed price on request
			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 therapeutic bar training 5 meter: please ask your dealer for a quotation

Please refer to the information about prices, conditions, illustrations and recommended system configurations which can be found on page 48.

specifications parallel bars h/p/cosmos parawalk® 4 meter

parallel bars:	h/p/cosmos parawalk 4 m with wooden plate*
order number:	cos30019va01
applications:	medical parallel-bar-system for rehabilitation and mobility training
walking surface (length):	400 cm (157.50")
walking surface (width):	variable handrail width independently adjustable from 45 ... 120 cm (17.70 ... 47.20")
handrails:	material both sides steel tube 40 mm (1.57") ø
handrail height:	variable handrail height independently adjustable from 70 ... 110 cm (27.56 ... 43.30"), readable scales (marks) on all 4 pillars
maximum user weight:	400 kg (880 lbs)
classification: CE	class I (MDD), non-active therapeutic device
colour:	white colour RAL9010 (special colour on request)
weight:	net: 300 kg (660 lbs); gross: 480 kg (1058.2 lbs)

specifications parallel bars h/p/cosmos parawalk® 3 meter

parallel bars:	h/p/cosmos parawalk 3 m with wooden plate*
order number:	cos30018va01
applications:	medical parallel-bar-system for rehabilitation and mobility training
walking surface (length):	300 cm (118.10")
walking surface (width):	variable handrail width independently adjustable from 45 ... 120 cm (17.70 ... 47.20")
handrails:	material both sides steel tube 40 mm (1.57") ø
handrail height:	variable handrail height independently adjustable from 70 ... 110 cm (27.56 ... 43.30"), readable scales (marks) on all 4 pillars
maximum user weight:	400 kg (880 lbs)
classification: CE	class I (MDD), non-active therapeutic device
colour:	white colour RAL9010 (special colour on request)
weight:	net: 291 kg (640 lbs); gross: 451 kg (994.3 lbs)

specifications parallel bars h/p/cosmos parawalk® 5 meter

parallel bars:	h/p/cosmos parawalk 5 m with wooden plate*
order number:	cos30020va01
applications:	medical parallel-bar-system for rehabilitation and mobility training
walking surface (length):	500 cm (196.85")
walking surface (width):	variable handrail width independently adjustable from 45 ... 120 cm (17.70 ... 47.20")
handrails:	material both sides steel tube 40 mm (1.57") ø
handrail height:	variable handrail height independently adjustable from 70 ... 110 cm (27.56 ... 43.30"), readable scales (marks) on all 4 pillars
maximum user weight:	400 kg (880 lbs)
classification: CE	class I (MDD), non-active therapeutic device
colour:	white colour RAL9010 (special colour on request)
weight:	net: 350 kg (770 lbs); gross: 550 kg (1212.5 lbs)

* The wooden plate is made of birch ply and has ramps on both ends. The parallel bars can be installed without the wooden plate and without cross members for unobstructed walking directly on the floor, but need to be bolted on the floor. Mounting material is included. When using the cross members and wooden plate, no bolting is required and the system is free standing. The ramp is 35 mm (1.38") high.

Warning! Commissioning and instruction only to be conducted by h/p/cosmos trained and authorized personnel.

h/p/cosmos is specialized

h/p/cosmos is specialized in even difficult installations, such as bringing systems in with a crane or delivered in parts through narrow staircases.

Also installations in pits or constructions of walkways and stages around the treadmill can be provided on request.

The h/p/cosmos service team and the trained and authorized distributors support customers also in preventive maintenance, service and repair work on the equipment. More than 23 years of experience ensure highest class service. This is especially valuable since most h/p/cosmos running machines reach a lifetime of 15 to 20 years and longer.

And our service helps our customers to stay in compliance with requirements for safety, accuracy, reliability and durability of the equipment

Already before deciding for the right system, trained personnel is available at your disposal for recommendations of system configurations to achieve best possible results and your goals. Our expert team, where many of them are with h/p/cosmos for 10 to 15 years and some of them even longer, will also answer your questions about installation requirements, regulatory affairs, compatibility of interfaces and other important issues.

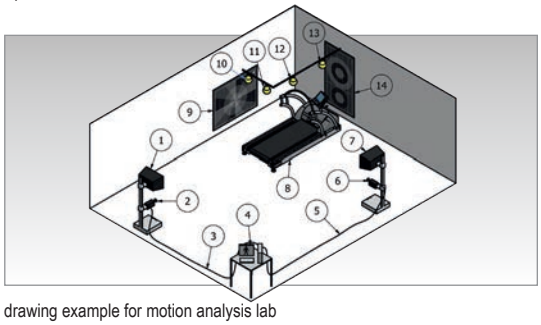
Installation and commissioning is performed with a very clear protocol including pictures and checklist, which will even allow you later on to train new colleagues in your facility by utilizing again the same professional commissioning protocol and guidebook.

h/p/cosmos saturn® 300/125r pit installation

crane delivery of h/p/cosmos saturn®

safety tester

h/p/cosmos technical team members



drawing example for motion analysis lab

environmental climate chamber

run ahead of time!®

Established 1988 in Nussdorf-Traunstein (South of Germany) h/p/cosmos stands for convincing technology, advanced design and safety in the production of running machines, ladder-ergometers, sprint trainers (sprint ergometers), sports performance training and diagnostic systems as well as rehabilitation equipment. In the course of time, h/p/cosmos developed into a specialist for running machines and accessories in sports, medicine and research. Designed to last, functionality, precision engineering and the safety of the devices delight fitness people, athletes and coaches, patients and physicians worldwide.

satisfaction is not enough - we want our customers and the users to be enthusiastic about our systems

All h/p/cosmos running machines are equipped with an interface port and software h/p/cosmos para control® for remote control and monitoring.

h/p/cosmos® is setting standards in reliability and durability.

warranty for h/p/cosmos running machines

- 20 years* for drive motor and against frame breakage
- 3 years* for all parts

Wireless heart rate control, maintenance free and powerful drive systems with maintenance free 3-phase AC motor and reverse belt rotation to simulate downhill running, patented arm-support with incorporated reading scales and keyboard, the unique safety arch design are only a few examples for the pioneering work h/p/cosmos® did and still does. The profit for the user has always been given special emphasis.

A milestone for intelligent solution has been laid by h/p/cosmos® in August 1992. With h/p/cosmos coscom®, an interface protocol has been created, which many other manufacturers incorporate in their systems today. Since then the h/p/cosmos® running machines and many other devices are able to communicate with different PC-programs, ECG, EMG, motion analysis- and spirometry systems. The h/p/cosmos coscom® protocol and the coscom.dll is published on the web at www.coscom.org

One key to the success of h/p/cosmos® is specialization. By focusing on different fields of application for running machines, h/p/cosmos® is setting up standards for innovation, technology, safety and support.

As specialists for running machines we are able to react to our clients wishes fast and flexible. Innovative concepts can be implemented and realized as intelligent solutions in very short time.

sales and service building

production building

Individual designed running machines with over-length, over-width or high-speed levels up to 80 km/h (50 mph) (for cycling) are on duty worldwide.

With special solutions for wheelchair patients, skiers and cyclists we can fall back on years of experience. It is out of question that we are able to build unique running machines. Keeping top safety and technology up is a matter of fact. Our own internal ISO 9001 and EN 13485 certified management system starts already with the supervision of the development of any new device and ranges until post market surveillance (PMS), and also includes implementation of the norm EN 62304 (Medical Device Software Lifecycle Processes) and EN 14971 (Risk Management) which is obligatory for many medical devices.

The meticulous documentation of all manufacturing phases of each running machine and other h/p/cosmos® devices goes up to the service at the customer's place. All device history files for treadmills are archived and accessible for at least 20 years which supports customers and service partners.

The close cooperation of our specialists from different departments, such as research and development, production, sales & services, guarantees the precision and perfection, which we made our main objective. The constant exchange of information with our customers forms the basis to achieve and keep our high objective.

h/p/cosmos® is certified according to ISO 9001 since the year 1998 and followed by EN 13485 certification until now.

More information you can find on the internet:
www.h-p-cosmos.com

* more details regarding warranty can be found on page 48.

how do we find the right running machine / treadmill ergometer out of more than 100 models available?

Is it possible for exercise physiology labs or medical, rehabilitation and athletic centres to use a standard fitness treadmill for performance testing and training and other medical or scientific applications?

buying a treadmill can be similar like buying a vehicle

There are so many vehicles (bicycle, motorbike, small car, limousine, minibus, bus, F1 racing car, truck, train, air craft, space craft, etc.) because there are so many applications and perfect matching demands for these individual types of vehicles.

To find the right vehicle for the required application a perfect coordination between the existing needs and the available types of vehicles is needed.

There is a great scale of different specifications and different pricing levels for vehicles. It is impossible to meet all demands for all applications with one vehicle only.

the same applies for treadmills!

This is why h/p/cosmos® has now a range of more than 100 different running machine models with different sizes (from deck size 150/50 cm until 450/300 cm), different specifications (speed range between 0…80 km/h, elevation from -35…+35%), different options and accessories and of course, with different prices.

So far we offer a range of different treadmill models for normal fitness, but also for athletic-training, biomechanics, medical and science applications. You can find even special systems for climatic chambers for humidity up to 100% in our program.

how do we as a user decide for the right running machine?

Specify precisely the result of the application, and we will find the right running machine for you. This matches our philosophy, image and especially our position in the market (for private home use, professional, institutional research, medical and rehabilitation, etc.)

Example: private user, fitness clubs, medical facilities and athletic-centers are aiming on very different goals. Therefore they need totally different equipment for achieving their goals.

This is why many professional and institutional users have chosen after long evaluations amongst others following systems:

- the h/p/cosmos saturn® 300/100r with safety arch and wheelchair stabilizer and 60 km/h speed for athletic training and exercise physiology for runners and even involving bicycles and wheelchairs;
- the h/p/cosmos pulsar® 3p with safety arch and downhill option, 45 km/h speed – also for athletic training and exercise physiology, speed performance training and functional training;
- the h/p/cosmos locomotion® with the un-weighting system h/p/cosmos airwalk se® 135 for manual locomotion therapy in neurology and rehabilitation;
- the h/p/cosmos mercury® med with arm support and additional keyboard which is a commonly used system in German rehab centers;

list can be continued ….

This procedure will meet your demands for almost all applications and situations you have specified as your goal to achieve.

Reducing the scale of options and accessories can be very critical. There would be no way to push an athlete to his maximum performance without giving him the comfort of safety through a fall prevention system. Likewise F1 racing pilots or cosmonauts in their spacecraft would not depart without a helmet and without a great scale of safety measurements, so they can focus on their performance without any fear.

You can just find the right equipment if you take enough time to browse and compare all available methodologies and technologies.

Consider that it might be dangerous to reduce recommended configurations because of limited budget. Of course budgets are never without limitation. But this is not just an issue about safety or quality!

There is a risk that alternative equipment or reduced configuration ends up in failure of the defined mission - achieving the specified results in your applications.

Aircrafts used by the well-known airlines have the highest quality, are very safe, comfortable and powerful. But they will never bring a satellite to space and will never carry people to other planets. It would be the wrong vehicle for these specified particular results.

The recommended system configurations for the various running machine applications you can find on our website under applications:
http://www.h-p-cosmos.com/en/applications/index.htm

They meet the demands of almost all applications and situations which we have been working with worldwide over many years of experience. We hope that this description could help to get a more detailed picture on our situation and how we work to assist you to achieve the results you need and you deserve.

To answer the questions from the beginning:
Medical, therapeutic and scientific institutions should not decide solely on special treadmills, because of clear difference in safety between fitness and medical treadmills (other electrical equipment, other certificates, other CE mark, potential isolation, etc.), but because a fitness treadmill can never satisfy the demands of medical, therapy and science because of great limitations in design, ergonomics and system compatibility.

Our customers can be sure that h/p/cosmos® not only helps with equipment and technologies, but also with great know how and more than 23 years of achievement in methodology and results in the applications.

extract of the h/p/cosmos product list 2012
sports and medical devices

sports CE

running machines	order number	running surface	speed	elevation	power supply **	display	CE	
h/p/cosmos stratos lt	cos30000va01	150 x 50 cm	0 ... 22 km/h	0%	230 V AC 1~ 15 A		CE	
h/p/cosmos stratos	cos30000va02	150 x 50 cm	0 ... 22 km/h	0%	230 V AC 1~ 15 A	✓	CE	
h/p/cosmos mercury lt	cos30000va03	150 x 50 cm	0 ... 22 km/h	0 ... 25 %	230 V AC 1~ 15 A		CE	
h/p/cosmos mercury	cos30000va04	150 x 50 cm	0 ... 22 km/h	0 ... 25 %	230 V AC 1~ 15 A	✓	CE	
h/p/cosmos stellar lt	cos30003va13	170 x 65 cm	0 ... 25 km/h	0%	230 V AC 1~ 15 A		CE	
h/p/cosmos stellar	cos30003va14	170 x 65 cm	0 ... 25 km/h	0%	230 V AC 1~ 15 A	✓	CE	
h/p/cosmos quasar lt	cos30003va15	170 x 65 cm	0 ... 25 km/h	0 ... 28 %	230 V AC 1~ 15 A		CE	
h/p/cosmos quasar	cos30003va16	170 x 65 cm	0 ... 25 km/h	0 ... 28 %	230 V AC 1~ 15 A	✓	CE	

ladder ergometer	order number			display	CE	
h/p/cosmos discovery lt	cos30014va01	ladder ergometer for climbing	230 V AC 1~ 15 A		CE	
h/p/cosmos discovery	cos30014va02	ladder ergometer for climbing	230 V AC 1~ 15 A	✓	CE	

sprint trainer	order number			display	CE	
h/p/cosmos comet 3.0	cos30015va01	sprint trainer with 180 meter rope. 1-phase	230 V AC 1~ 15 A	✓	CE	
h/p/cosmos comet 3p 3.0	cos30015va02	sprint trainer with 180 meter rope. 3-phase	400 V AC 3~ 16 A	✓	CE	

high performance cycle ergometer CYCLUS 2	order number			display	CE	
CYCLUS 2 Recordtrainer, made by RBM	cos14155-01	System for personal cycle	230 V AC 1~ 15 A	✓	CE	
CYCLUS 2 Transport Case	cos14156	Aluminium transport case CYCLUS 2				

medical CE 0123

running machines	order number	running surface	speed	elevation		display	CE	
h/p/cosmos stratos lt med	cos30000va05	150 x 50 cm	0 ... 22 km/h	0%	230 V AC 1~ 15 A		CE0123	
h/p/cosmos stratos med	cos30000va06	150 x 50 cm	0 ... 22 km/h	0%	230 V AC 1~ 15 A	✓	CE0123	
h/p/cosmos mercury lt med	cos30000va07	150 x 50 cm	0 ... 22 km/h	0 ... 25 %	230 V AC 1~ 15 A		CE0123	
h/p/cosmos mercury med	cos30000va08	150 x 50 cm	0 ... 22 km/h	0 ... 25 %	230 V AC 1~ 15 A	✓	CE0123	
h/p/cosmos stellar lt med	cos30003va17	170 x 65 cm	0 ... 25 km/h	0%	230 V AC 1~ 15 A		CE0123	
h/p/cosmos stellar med	cos30003va18	170 x 65 cm	0 ... 25 km/h	0%	230 V AC 1~ 15 A	✓	CE0123	
h/p/cosmos quasar lt med	cos30003va19	170 x 65 cm	0 ... 25 km/h	0 ... 28 %	230 V AC 1~ 15 A		CE0123	
h/p/cosmos quasar med	cos30003va20	170 x 65 cm	0 ... 25 km/h	0 ... 28 %	230 V AC 1~ 15 A	✓	CE0123	
h/p/cosmos pulsar lt	cos30004va01	190 x 65 cm	0 ... 40 km/h	-25 ... +25 %	230 V AC 1~ 15 A		CE0123	
h/p/cosmos pulsar lt 3p	cos30004va02	190 x 65 cm	0 ... 40 km/h	-25 ... +25 %	400 V AC 3~ 16 A		CE0123	
h/p/cosmos pulsar	cos30004va03	190 x 65 cm	0 ... 40 km/h	-25 ... +25 %	230 V AC 1~ 15 A	✓	CE0123	
h/p/cosmos pulsar 3p	cos30004va04	190 x 65 cm	0 ... 40 km/h	-25 ... +25 %	400 V AC 3~ 16 A	✓	CE0123	
Running machines for climatic chambers on request	Available for all sizes as an option at extra charge for the following climatic conditions -35°C ... +55°C and 20 ... 100 % humidity							

running machines for neurological rehabilitation	with adjustable handrails, therapists seats on both sides and foot rest							
h/p/cosmos locomotion med 150/50 E	cos30001va01	150 x 50 cm	0 ... 10 km/h	-15 ... +15 %	230 V AC 1~ 15 A		CE0123	
h/p/cosmos locomotion med 150/50 DE	cos30001-01va02	150 x 50 cm	0 ... 10 km/h	-15 ... +15 %	230 V AC 1~ 15 A	✓	CE0123	
running machines for biomechanics	with pressure measurement plates and KISTLER gait analysis software (medical PC and printer not included)							
h/p/cosmos Kistler Gaitway II F	cos30002va01	150 x 50 cm	0 ... 22 km/h	0%	230 V AC 1~ 15 A	✓	CE0123	
h/p/cosmos Kistler Gaitway II S	cos30002va02	150 x 50 cm	0 ... 22 km/h	0 ... +25 %	230 V AC 1~ 15 A	✓	CE0123	

oversize running machines	order number	running surface	speed	elevation	power supply	display	CE	
h/p/cosmos venus 200/75	cos30005-01va05	200 x 75 cm	0 ... 40 km/h	-35 ... +35 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos venus 200/75 r	cos30005-01va06	200 x 75 cm	0 ... 40 km/h	-35 ... +35 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos venus 200/100	cos30006-01va05	200 x 100 cm	0 ... 40 km/h	-35 ... +35 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos venus 200/100 r	cos30006-01va06	200 x 100 cm	0 ... 40 km/h	-35 ... +35 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos saturn 250/75	cos30007-01va05	250 x 75 cm	0 ... 40 km/h	-27 ... +27 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos saturn 250/75 r	cos30007-01va06	250 x 75 cm	0 ... 40 km/h	-27 ... +27 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos saturn 250/100	cos30008-01va05	250 x 100 cm	0 ... 40 km/h	-27 ... +27 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos saturn 250/100 r	cos30008-01va06	250 x 100 cm	0 ... 40 km/h	-27 ... +27 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos saturn 250/125 r	cos30009-01va03	250 x 125 cm	0 ... 40 km/h	-27 ... +27 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos saturn 300/75	cos30010-01va05	300 x 75 cm	0 ... 40 km/h	-27 ... +27 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos saturn 300/75 r	cos30010-01va06	300 x 75 cm	0 ... 40 km/h	-27 ... +27 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos saturn 300/100	cos30011-01va05	300 x 100 cm	0 ... 40 km/h	-27 ... +27 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos saturn 300/100 r	cos30011-01va06	300 x 100 cm	0 ... 40 km/h	-27 ... +27 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos saturn 300/125 r	cos30012-01va03	300 x 125 cm	0 ... 40 km/h	-27 ... +27 %	400 V AC 3~ 32 A	✓	CE0123	
h/p/cosmos saturn 450/300 rs	cos30013-01va01	450 x 300 cm	0 ... 40 km/h	- 4 ... +25 %	400 V AC 3~ 64 A	✓	CE0123	
Further oversize running machines and specialised running machines with custom dimensions and specifications available on request.								

ladder ergometer	order number		power supply	display	CE	
h/p/cosmos discovery lt med	cos30014va03	ladder ergometer for climbing	230 V AC 1~ 15 A		CE0123	
h/p/cosmos discovery med	cos30014va04	ladder ergometer for climbing	230 V AC 1~ 15 A	✓	CE0123	

parallel bars / walkway	order number				
h/p/cosmos parawalk 3 m	cos30018va01	Medical parallel-bar-system for rehabilitation and mobility training; bar length 3 m, 4 m or 5 m. Variable in width and height with support from gas struts. With wooden platform.		CE	
h/p/cosmos parawalk 4 m	cos30019va01			CE	
h/p/cosmos parawalk 5 m	cos30020va01			CE	

** 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.

EN: All prices net, EXW (ex works) h/p/cosmos factory Germany, in EURO. Valid from 01.02.2011 until 31.12.2012 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.

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


performance diagnostics


cycling


motion analysis


wheelchair


fire fighting


sprint trainer (rope machine)

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 analogue and digital interfaces must be certified according to the respective IEC standards, e.g. IEC 950 for data processing equipment and IEC 60601 for medical equipment. Furthermore all configurations shall comply with the valid version of the system standard IEC 60601 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 IEC 60601. (MDD: 13.6.c, IEC 60601: 6.8.2.c, 19.2.b, 19.2.c). Risk Management based on EN 14971 must be implemented. 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 original test reports and certificates 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 necessarily 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 01.02.2011 until 31.12.2012 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 in writing and are published on our website www.h-p-cosmos.com/en/company/terms_of_business.htm. E & OE. Subject to alterations without prior notice.

h/p/cosmos dealer contact:

manufacturer:

h/p/cosmos sports & medical gmbh
Am Sportplatz 8
83365 Nussdorf-Traunstein
Germany
phone: +49 86 69 86 42 0
fax: +49 86 69 86 42 49
sales@h-p-cosmos.com
www.h-p-cosmos.com
skype: @h-p-cosmos.com (search & select name)
youtube: hpcosmos
twitter: hpcosmos
facebook: hpcosmos