h/p/cosmos®

biomechanics

gaitway 3D

powered by

Arsalis

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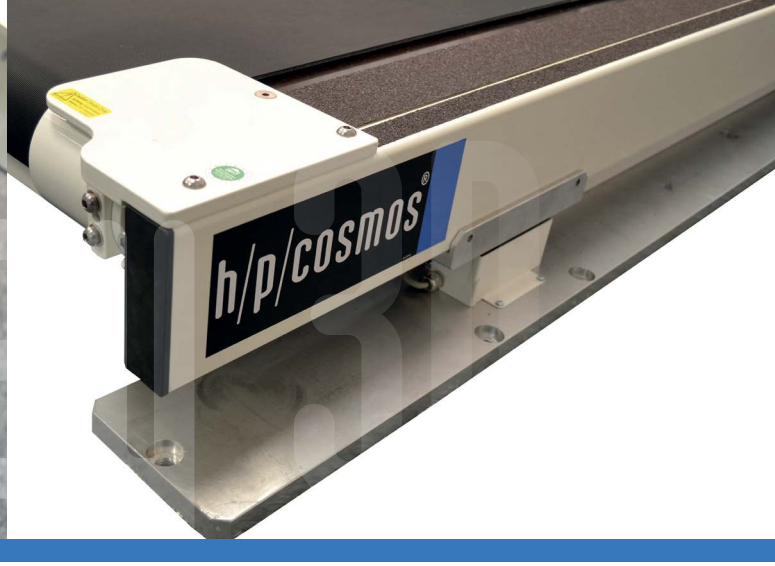
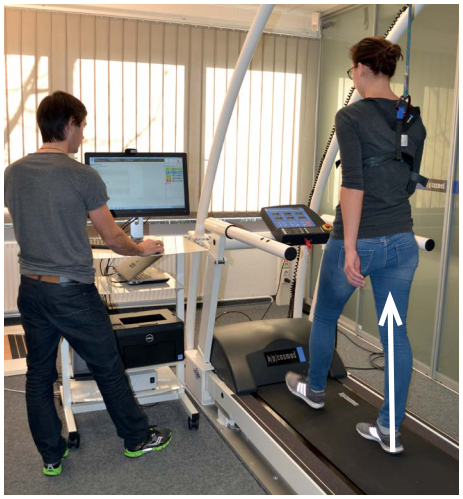
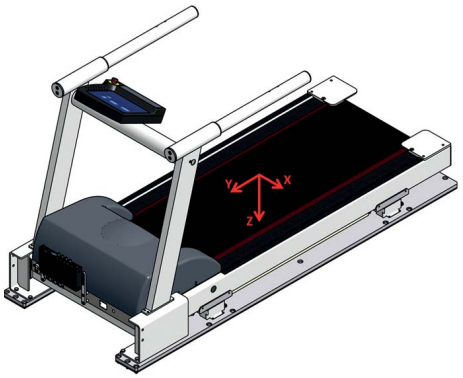
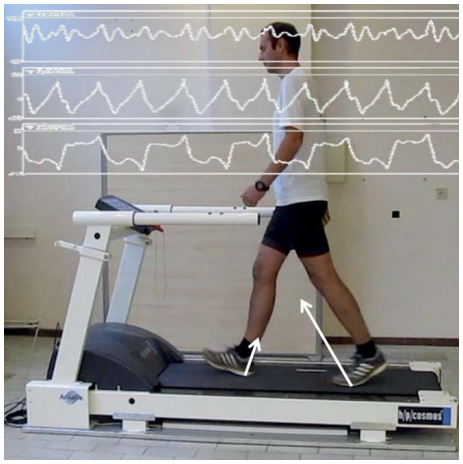


biomechanics







gaitway 3D

gaitway-3D is an instrumented treadmill designed jointly by h/p/cosmos and Arsalis. It measures the ground reaction forces and torques in three directions and comes in three different sizes: each size is optimized for a range of speeds.

The gaitway-3D offers a rigid construction to record optimal quality signals. The functionalities include a patient weighing scale, a recording of the ground reaction forces at rates up to 10 kHz, left and right force measurement for the vertical force during walking and an extensive list of biomechanical parameters of normal and pathological gaits.

The system also offers biofeedback for gait rehabilitation and performance training. Digital start/stop input triggers, digital sync output and analog signal output allow the integration of the gaitway 3D instrumented treadmill with EMG and motion analysis systems. The gaitway 3D software is designed for Windows 7, 8, 10 and following. Automatic updates allow and easy expansion of the functionalities and customer support.

Applications

- Biomechanics
- Sports Science and Research
- Exercise training

Functionalities

- Online feedback to user (e.g. for training facilities)
- Data recording & analysis (e.g. for research facilities)
- Patient evaluation* (e.g. for clinical facilities)

Measured and computed signals

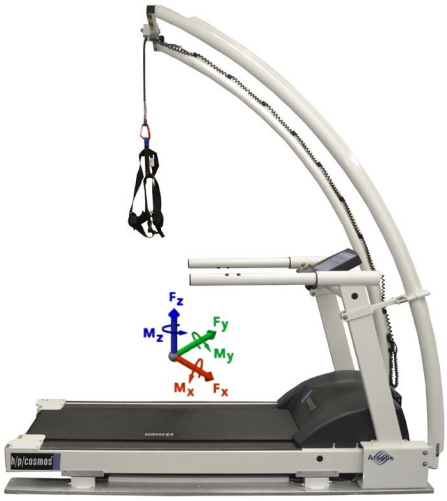
- 3D Force (F_z, F_y, F_x)
- Center of Pressure (Op_x, Op_y)
- Moments (M_x, M_y)
- Frictional Torque (T_z)
- Belt speed

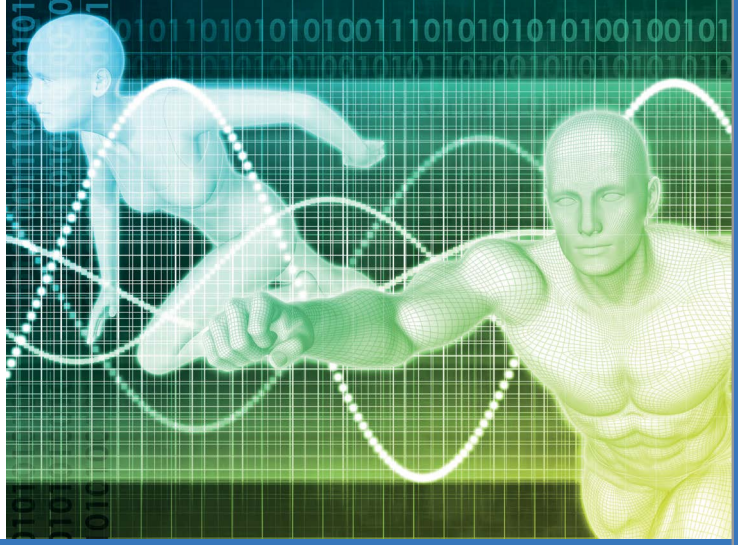
Strengths

- Rugged treadmill construction
- State-of-the-Art sensors
- Single belt treadmill
- L/R vertical force decomposition algorithm

Opportunities

- Reduction of lab space
- Increasing technology in health science
- Worldwide distribution network
- Fast and valid data acquisition





Biomechanical parameters

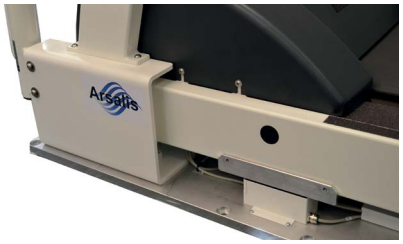
- Step length, width, frequency
- Swing / stance durations
- Contact / aerial durations
- Stride asymmetry
- Force peaks (push-off, landing)
- Force vector orientation
- Loading and unloading rate
- More biomechanical parameters
- Left / Right foot for vertical force

System performance Features

- Extremely wide measuring range
- Excellent measuring accuracy
- Built-in amplifier with acquisition system
- LAN connection
- Control & acquisition software included
- Start and stop trigger inputs and digital sync output for integration with EMG and motion analysis systems
- Raw data accessible via interface
- Cost-effective
- Also available in economic 1 component ground reaction force Fz version incl. 25% inclination (h/p/cosmos treadmill gaitway 1D3G)

gaitway 3D® Software allows

- management of user database
- control of the treadmill speed
- monitoring of exercise time, distance and heart rate
- recording of 3D ground reaction force & treadmill speed
- L/R online decomposition of vertical force
- automatic updates
- user biofeedback on biomechanical parameters



Installation

The base frame will be bolted on the floor. Vibrations of the floor shall be avoided by preferring a location at ground floor without basement and in distance to roads wih heavy traffic or railway tracks. Vibrations of handrails and safety arch can be reduced by isolating these components from the main treadmill frame and mount them on a seperate frame.

Installation, commissioning, instruction, maintenance and repair work only to be conducted by h/p/cosmos trained and authorized personnel.

Overview

The gaitway 3D 150/50 is an h/p/cosmos treadmill stratos® instrumented by Arsalis® ito measure the 3D ground reaction forces during locomotion. It is a full 3 component force and torque measurement system.

running machine:	h/p/cosmos stratos (other models on request)
manufacturer:	h/p/cosmos sports & medical gmbh / Germany
dimensions	L: 220 cm W:95 cm H:120 cm
running surface:	L: 150 cm (4ft 11.06“) W: 50 cm (1ft 7.69“)
speed range:	0...22.0 km/h (0...6.1 m/s) (0...13.6 mph)
elevation:	not adjustable
classification:	scientific instrument device; *not for medical, not for therapeutic applications
Load range on sensors Fx, Fy, Fz	10 kN
overload (sensors)	24 kN
interfaces	▪ Built-in amplifier ▪ Ethernet interface ▪ Analog / Digital interface ▪ Start & stop digital nput triggers and digital sync output ▪ Serial port RS232 (optional USB adapter) for treadmill control via coscom v3 interface
accesories (extra charge)	▪ Safety arch fall stop ▪ detachable handrails ▪ science port for raw speed data ▪ airwalk® unweighting system ▪ special speed ▪ non reflecting powder coating ▪ and many more

h/p/cosmos dealer

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