	Walkbot®S	Walkbot®K
Patient Height	140~200cm	86~148cm
Leg Length(Hip to Knee)	350~480mm	210~350mm
(Knee to Ankle)	353~483mm	212~352mm
Dimensions(cm) • Swivel door closed • Swivel door open	 390(L)×168(W)×257(H) 390(L)×244(W)×257(H)	 390(L)×168(W)×240(H) 390(L)×244(W)×240(H)
Space Requirements(cm)	540(L)×400(W)×265(H)	540(L)×400(W)×249(H)
Power Resources	AC 220V 50/60Hz Single Phase 10A	

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Living up to the Utmost Dreams of our Clients is One thing

"Re-Walking for Perfection Goes far beyond the Infinity".

WALKBOT

CE 0120

“Re-Walking for Perfection”

Living up to the Utmost Dreams of our Clients is One thing
“Re-Walking for Perfection Goes far beyond the Infinity”.

We Created Walkbot®S and Walkbot®K which are Ground-breaking Innovations to Blaze our Clients Dreams of Re-Walking across the Life Span.

It was All about Answering the Question of How to Realize “Re-Walking for Perfection“.

This is How the Next Generation, Walkbot®S and Walkbot®K were Created into Superior Being-Interactive, Functional, Strengthening, Motivating, Natural, Cost-Effective Locomotor System for Adults with Neurological or Musculoskeletal Impairments who Wish to Achieve their Dreams of Re-Walking for Perfection.

WALKBOT

WALKBOT® BENEFITS

- Create natural gait pattern optimal to the patient
- World-first ankle joint drive
- More sessions and efficient therapy by automatic leg length adjustment
- Useful training mode (Interactive, assist training in accordance to the patient)
- Treadmill synchronized with robot (BWSTT mode is possible)
- Active augmented virtual reality software

WALKBOT

SUPERIOR :

The Walkbot®S provides an accurate and superlative therapeutic effect on locomotor retraining according to numerous anecdotal testimonies of our clients and clinicians, empirical evidence and clinical trial from researchers.

Client testimonies : Mr. Aurelio was diagnosed with SCI ASIA B 14 years ago who remarkably enhanced his locomotor function following a 3-month Walbot® training (Neurocell Institute, Spain, 2014).
Mr. Kim was diagnosed with hemiparetic stroke 2 years ago and underwent the intensive Walkbot® gait training for 2 months. Surprisingly, he was initially afraid of falling and unable to ambulate. However, thanks to Walbot®, now he can walk independently (Seoul National University Hospital, South Korea, 2013).

Empirical evidence : Validity and feasibility of intelligent Walkbot system(Electronic Letters, 2009), which Linear regression analysis for kinematic hip and knee angle data showed R2 = 0.8604 and R2 = 0.9265, respectively.

Clinical evidence :

- Immediate effect of Walkbot® robotic gait training on neuromechanical knee stiffness in spastic hemiplegia (Kim et al., 2013).

Abstract. The purpose of this study was to investigate the immediate effect of Walkbot® gait training on knee joint stiffness in an individual with spastic hemiplegia. A hemiparetic stroke patient underwent a 30-minuteWalkbot robotic-assisted gait training session. Knee flexion stiffness associated with hamstring spasticity and knee extension torques during the terminal swing phase was determined before and after the intervention using the Walkbot®-STIFF measurement system. Knee joint extension kinematic at the terminal **swing phase** increased **from 2.44˚to –0.28˚.** Knee joint **torque** increased **from 0.26Nm to 0.32 Nm.** The knee flexion **stiffness** decreased **from 0.0083 Nm/degree to 0.0022 Nm/degree** following the training. The Walkbot® robotic-assisted locomotor training was **effective for reducing knee joint stiffness and improving extensor torque during functional gait.** Moreover, the Walkbot®-STIFF system was useful for assessing and monitoring spasticity during locomotor training.

- Effects of Innovative WALKBOT® Robotic-assisted Locomotor Training on Balance and Gait Recovery in Hemiparetic Stroke : A Prospective, Randomized, Experimenter Blinded Case Control Study with a 4-week Follow-up (in revision, Journal of Neuro Engineering and Rehabilitation, 2015)

Abstract. This is the first clinical trial that highlights the superior, augmented effects of the WALKBOT-assisted locomotor training on balance, gait and motor recovery when compared to the conventional locomotor training alone in patients with hemiparetic stroke.

INTERACTIVE :

The Walkbot®S provides an intelligent interactive mode which automatically accommodates spasticity or associated stiffness, assistance and resistance forces, walking speed, and hip, knee, and **ankle** joint kinetics and kinematics according to the client's ongoing locomotor performance to maximize 'automatic' locomotor relearning, retention, and full recovery.

(Virtual Reality–Induced Cortical Reorganization and Associated Locomotor Recovery in Chronic Stroke An Experimenter-Blind Randomized Study (You et al., Stroke, 2005))

FUNCTIONAL :

The Walkbot®S provides a variety of fun, functional rehabilitation exercises associated with walking such as soccer ball kicking, game, etc., to optimize neuromotor control of locomotion in clients.

STRENGTHENING :

The Walkbot®S provides a variable resistance mode to stimulate the underactive and weak muscles or augmented with functional electrical stimulation(FES) and electromyographic (EMG) feedback as well as facilitate potential neuroplasticity when combined with a real time electroencephalographic (EEG) brain mapping system during the subacute or chronic phase of rehabilitation. *FES, EMG, and EEG systems will be available for the optional modes for users.

(A novel EEG-based brain mapping to determine cortical activation patterns (Shin et al., Neurorehabilitation, 2012))

WALKBOT

NATURAL :

The Walkbot®S is engineered to provide most natural kinematic and kinetic as well as energy efficient gait patterns, which help clients with acute and severe stroke, spinal cord injury or gait impairments to reestablish the optimal and automatic locomotor pattern and to accelerate faster recovery during the initial rehabilitation phase.

ECONOMICAL :

The Walkbot®S provides cost-effective return in the long-run based on the cost-effectiveness analysis (CEA) of a long-run total cost.

MOTIVATION :

Active augmented virtual reality software

- 3D reality exploration (Free/Mission)
- Side scrolling game
- Virtual environment walking

The Walkbot®S provides exciting customized 3-dimensional virtual reality exercise games so that our clients actually do not perceive the gait training as a form of therapy, rather enjoy walking in interactive and ecologically natural or virtual environments as used.

Make a special treatment to children
Walkbot®K

Walkbot®K is an another independent model of Walkbot® series that is dedicated to children whose heights from 86cm to 148cm of young patients.

In case of children patient, stiffness and resistance are harder than adult and in the most case, they even have no experience of walking after birth. So treatment efficacy is much lower in spite of longer training time.

To expect better outcomes, Walkbot®K was developed with the ankle drive motor in order to give gait balance and correct pattern. Also it provides relevant clinical information related to locomotion, including data on stiffness associated with spasticity or joint contracture, spatiotemporal data, hip, knee and ankle kinematic and kinetic force data during locomotion training.

In addition, the playground design as per children's eye level minimizes the difficulties and unfamiliarity of when children first confronted the equipment. Also, an age-appropriate virtual reality program is integrated into the system to maximize interactive participation and motivation to children.

Safety

- Managing the reaction sensitivity of the patient to 6 steps
- Three emergency switches, double proximity sensors and two safety sensors.

User convenience

- Intuitive GUI, the systematic training manuals
- Network-based electronic chart support programs(EMR) applicable

Remote control after service

- Remote control service
- Monitor status of the device, management of device history records