

Robot assisted gait training medical device



2014.05 | P&S Mechanics Co., Ltd.

Walkbot - Introduction

Trend of rehabilitation



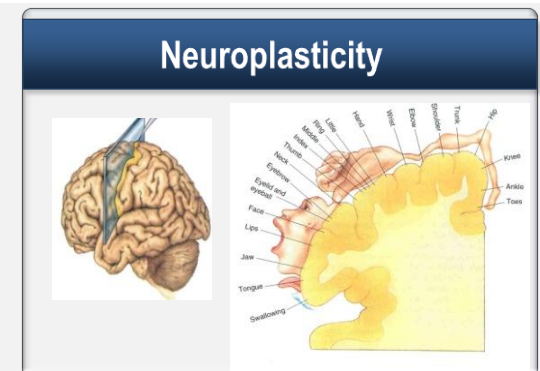
Traditional Training



Just one therapist can manage

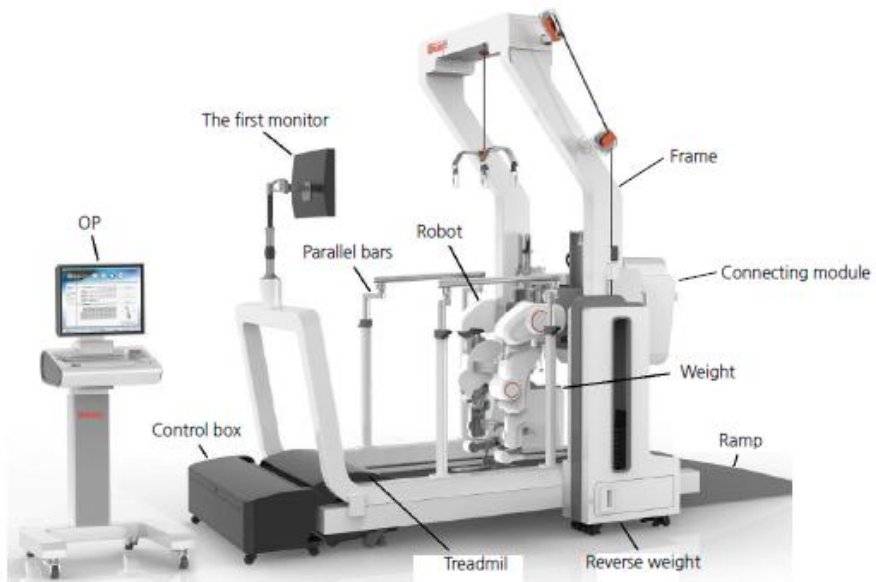
'High-Tech Robot assisted Training, Walkbot'

- + For neurological patients with stroke, traumatic brain injury(TBI), spinal cord injury(SCI), multiple sclerosis(MS), Parkinson's disease, cerebral palsy(CP), and more
- + Locomotion recovery through reorganization of cortical nerve system (Neuroplasticity)
- + Automated body-weight support system
- + Synchronization of robot orthosis and treadmill



Walkbot – Type of model

Walkbot_S (for adult)



Walkbot_K (for Kids)



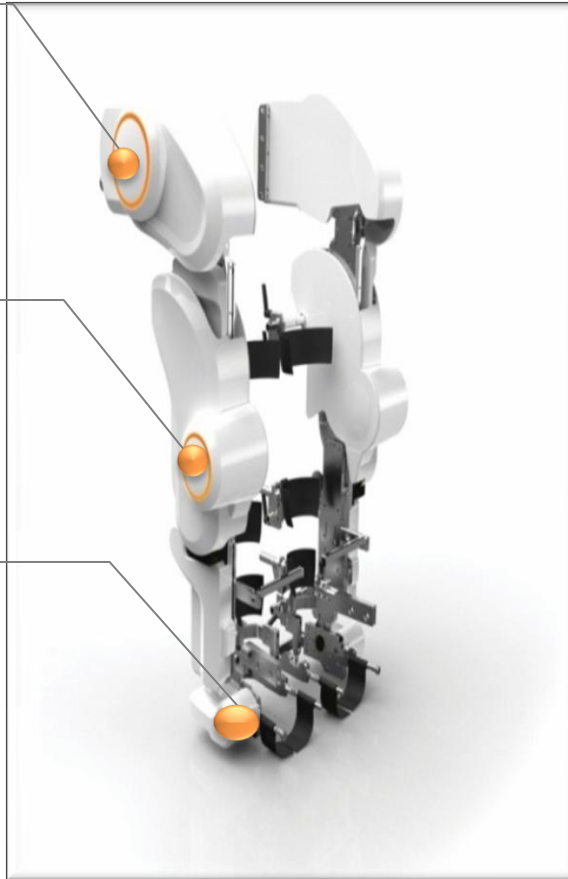
Walkbot – Features 1.

| World's first ankle joint drive motor incorporated

Hip motor

Knee motor

Ankle motor



- ✓ Completion of satisfactory gait training method by introducing robot driven ankle joint
- ✓ Preventing toe dragging and foot drop at the end of stance phase
- ✓ Straighten feet of patients with inversion or eversion due to plasticity



Walkbot – Features 2.

| Automatic leg length adjustment system

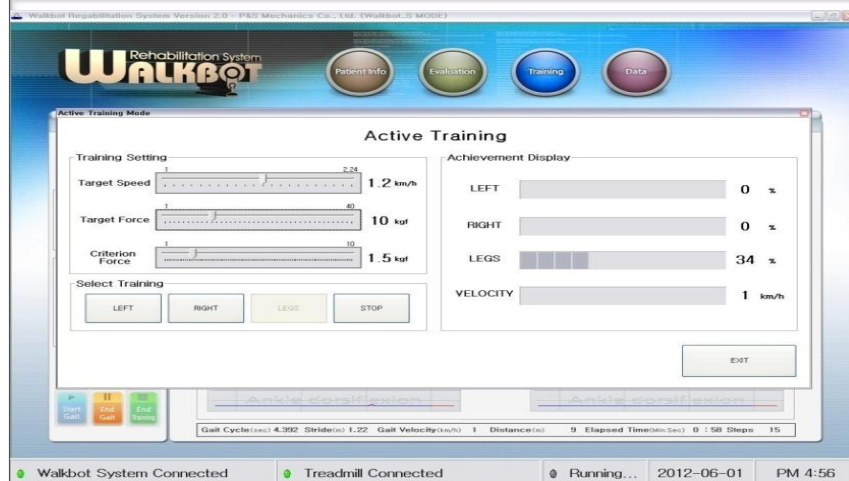


- ☒ More precise leg length adjustment (incremental adjustment by 1mm)
- ☒ Training more patients due to automatic adjustment
- ☒ Generation of patient-specific gait pattern

Walkbot – Features 3.

Active training method

Active mode set up



Speeding-up of gait velocity if patients could maintain active muscle use above target level for a certain period of time

Encouragement



Pop-up windows (GOOD JOB!) for encouragement when target levels of active muscle use are achieved



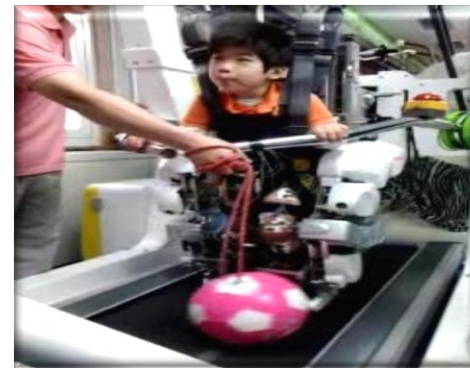
Walkbot_K

Dedicated to pediatric rehabilitation device

Walkbot_K (Pediatric)



- ✓ Pediatric orthosis – for patients with traumatic brain injury, cerebral palsy, spinal cord injury, etc.
- ✓ Playground-like design
- ✓ Stronger motivation and more attention by providing lots of fun elements



About us - History

- **2013.** CE (3rd Edition) / ISO13485 approval
Enter the Europe market
-
- **2012.** KFDA approval on Walkbot_K
Participation AOCPRM 2012 at Bali, Indonesia
- **2011.** KFDA approval on Walkbot_S
Exhibition at KIMES 2011
-
- **2009.** Open the R&D Center
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- **2005.** Submit T-ROT (thinking robot) & KIBO (kid robot)
at APEC 2005 (Asia-Pacific Economic Cooperation)
Development of Walkbot started
-
- **2003.** Established a company
Kick off the mutual project for Robot development
with Korea Government (KIST)

**2013 ~
Toward to the market
worldwide**

**2005 ~ 2013
Development and
Introduce the product**

**2003 ~ 2005年
Build robot technology**

About us – Robot Technology

For last 10 years, we are focusing on humanoid robot development with government ,
KIST (Korea Institute of Science and Technology)

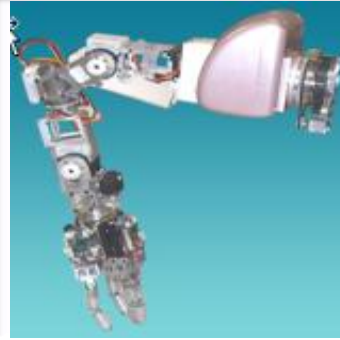
Master arm



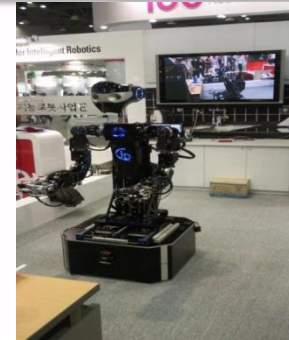
Wearable haptic



Manipulator



T-Rot



Kibo



Reorganization of Rehabilitation Training through Introducing **Walkbot!**

New Trend in Rehabilitation

- + Drastic Increase of Aging Population
- + Increasing demand for Welfare
- + Application of advanced robot technology to medical science



Increased Demand for Rehabilitation Medicine

- + Application of state-of-the-art technology to rehabilitation medicine
- + Advanced evaluation tools
- + Enlarged institutional scope including sports medical centers

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