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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 37704-2019

General specifications for motion rehabilitation training robots

运动康复训练机器人通用技术条件

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Table of Contents

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. Please note that some of the contents of this document may involve patents. The issuing organization of this document is not responsible for identifying these patents. This standard is proposed and managed by the National Specialized Robot Standardization Working Group (SAC/SWG13). This standard was drafted. Southeast University, Nanjing Special Equipment Safety Supervision and Inspection Institute, Fujian Special Equipment Inspection Institute, often City Qianxi Rehabilitation Co., Ltd., The Chinese University of Hong Kong (Shenzhen), Zhongrui Funing Robot (Shenyang) Co., Ltd., China Food and Drug Inspection Institute, Beijing Jianheng Certification Center Co., Ltd., Zhejiang University, National Rehabilitation Aids Research Center Affiliated Rehabilitation Hospital, China Machine Productivity Promotion Into the center, Suzhou University, China Quality Certification Center, Peking Union Medical College Hospital, Hengsheng Technology Co., Ltd. The main drafters of this standard. Song Aiguo, Hu Sufeng, Feng Yuegui, Li Huijun, Fan Jichun, Fan Tianrun, Xue Hufang, Ding Ning, Wang Huifang, Liu Qian, Yu Xinhua, Wu Yuan, Liu Tao, Ma Hongzhuo, Zhang Ping, Lu Dong, Li Fangshi, Xu Baoguo, Zheng Yufeng, Li Weida, Jiang Tongzhou, Liu Qidong, Zheng Jia, Zheng Yongchang, Zou Weitie.

As the society ages, the number of disabled and half-disabled elderly who need care is increasing. In addition, due to stroke and spinal cord injury in China There are many people with limb movement dysfunction. Such groups present in daily life care, spiritual comfort, rehabilitation, and nursing. Growing demand. The development of robotics and its combination with clinical rehabilitation medicine provides a very important research for rehabilitation training robots. A good opportunity. Using robots and related technologies to objectively monitor and evaluate the rehabilitation training process and improve the pertinence of rehabilitation training And scientific, to develop suitable rehabilitation programs for trainees to further improve the efficiency of rehabilitation training. The purpose of this standard is to standardize and unify the performance indicators and test methods of sports rehabilitation training robots, which is conducive to enterprises to improve production. Quality of products and services to improve the satisfaction of the trainees. General technical conditions for sports rehabilitation training robots

1 Scope

China's national general specification for rehabilitation training robots. It specifies the terms and definitions and the classification - by the part of the body trained and by the training method - together with the technical requirements. These machines assist or resist a patient's limb through repeated movement after a stroke or spinal injury, and the clinical case for them rests on a well-established finding: recovery depends on the number of repetitions performed, and a therapist can supervise only so many. A robot can deliver thousands per session, measure every one, and adjust the assistance as the patient improves. The classification axes in the standard are the ones that matter clinically. Training site separates upper limb from lower limb and from gait, which are different machines entirely. Training method separates passive movement, where the machine moves a limb that cannot move itself, from active assisted and resisted modes - and the safety requirements differ sharply between them, because a passive machine is moving a person who cannot resist it.

This standard specifies the terms and definitions, classification, product model composition, requirements, test methods, inspection rules, and Logo, instruction manual, packaging, transportation and storage. This standard is applicable to the rehabilitation training machine through limb movement under the guidance of rehabilitation doctors, rehabilitation therapists or professional nursing staff. The person (hereinafter referred to as the robot).

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 191 packaging storage and transportation icon

GB 4343.1 Electromagnetic compatibility requirements for household appliances, power tools and similar appliances - Part 1

GB/T 4343.2 Electromagnetic compatibility requirements for household appliances, power tools and similar appliances - Part 2. Immunity

GB 4706.1-2005 Safety of household and similar electrical appliances - Part 1. General requirements

GB/T 9969 General guidelines for the use of industrial products General technical conditions for

GB/T 13384 mechanical and electrical product packaging

GB/T 16754 mechanical safety emergency stop design principle

GB 24436-2009 Rehabilitation training equipment safety general requirements

GB/T 33265-2016 Educational Robot Safety Requirements

GB/T 36239-2018 special robot terminology

GB/T 36321-2018 special robot classification, symbols, signs

3 Terms and definitions

The following terms and definitions as defined in GB/T 36239-2018 apply to this document.

3.1 Limb limb Human upper and lower limbs (excluding the head, neck, and torso).

3.2 Rehabilitation training robot rehabilitationtrainingrobot In the field of health care, assisting the elderly and helping the disabled, it is used to assist the limb movement dysfunction or disabled person in rehabilitation training and limb function recovery. Complex, reconstructed, enhanced, and other robots.

Note. Rewrite GB/T 36239-2018, definition 3.6.

3.3 Sports rehabilitation training robot motionrehabilitationtrainingrobot A robot that performs rehabilitation training through physical exercise under the guidance of a rehabilitation physician, a rehabilitation therapist, or a professional nursing staff.