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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 24436-2009

**Rehabilitation training instrument - General safety
requirements**

康复训练器械 安全通用要求

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Foreword

Clause 5 and sub-clause

7.2 of this Standard are mandatory; the rest are recommendatory. This Standard was proposed by Ministry of Civil Affairs of the People's Republic of China. This Standard shall be under the jurisdiction of National Technical Committee on Rehabilitation and Special Equipment for The Disabled of Standardization Administration of China (SAC/TC 148). Main drafting organizations of this Standard. Changzhou Qianjing Rehabilitation Equipment Co., Ltd., National Rehabilitation Equipment Quality Supervision and Inspection Center, China Rehabilitation Research Center, Shanxi Aoruite Health Industry Co., Ltd. Main drafters of this Standard. Fan Jincheng, Wang Baohua, Dai Dong, Shanxi Aorui, Bi Jianming, Shen Lin, Yu Juanjuan, Chen Nanfang, Hu Min, Jia Yaling, Zhang Hongtao, Zhang Jian.

Rehabilitation training instrument - General safety requirements

1 Scope

China's mandatory general safety standard for rehabilitation training equipment - the parallel bars, standing frames, treadmills, pulleys, hand and limb trainers and powered exercisers used by people with a physical disability, whose defining condition is that the user has reduced strength, balance or sensation and cannot be expected to catch themselves when something moves unexpectedly. It specifies the terms and definitions, the general requirements, the general safety requirements and the test methods for rehabilitation training instruments, together with the marks and labels, the warning signs and the precautions, and the test report. It applies to the instruments on which a person with a physical disability carries out rehabilitation training, whether at a rehabilitation facility or at home, under the guidance of a rehabilitation physician or of nursing staff. Clause 5 and 7.2 are mandatory and the rest is recommended. The general safety requirements are the substance of the document and run to eight pages: the stability of the instrument and its resistance to overturning, the strength and the loading of the structure and of the parts the user hangs their weight on, the accessible surfaces and edges, the trapping and shearing points created by moving parts, the guards and the restraints, the braking and locking of adjustable parts, and, for the powered instruments, the electrical safety, which is referred to the household appliance safety standard GB 4706.1. Six pages of test methods follow, then the marking and warning requirements and the content of the test report. Issued on 30 September 2009 and in force since 1 December 2009, it was proposed by the Ministry of Civil Affairs and is held by SAC/TC 148.

This Standard specifies the definitions and terms, general requirements and test methods in terms of safety, etc. for rehabilitation training instrument (hereinafter referred to as the instrument). This Standard is applicable to the instrument that the physical disabled perform rehabilitation training at rehabilitation training facility or family under the guidance of a rehabilitation physician or nursing staff.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 rehabilitation training instrument device for rehabilitation of persons with physical dysfunction

4 General

4.1 The device shall meet the rules of rehabilitation training for people with physical dysfunction.

4.2 This Standard only specifies the general requirements for safety of general instrument.

5.1.2 Cutting, squeezing parts and rotating moving parts

5.1.2.1 In the normal training state of the training position, there shall be no possibility of being cut, entangled, squeezed or collided in the area accessible to the user.

5.1.3.1 An elastic cushioning device with a contact area of not less than 1000 mm

5.1.3.2 All weight movements on the instrument shall be limited as required during rehabilitation training. There shall be no uncontrollable yaw phenomenon. Unless there is special movement, the movement of the stacking weight shall be able to return to the stationary point freely.

5.2 Safety protective device

5.2.1 The lower limb swing training equipment shall have upper limb support guard to ensure that the user can be securely protected when using the upper and lower instrument or during training, as shown in Figure 3.

5.2.6 The pedal (pad) of the pedaling device shall be installed firmly. There shall be no rotation or movement during use, and it has anti-slip function.

5.2.7 For pedals that move in a swaying manner, the active direction and the easy-to-slip direction shall be provided with anti-skid bosses, guards or other forms of the foot that are not less than 20 mm in height. When the distance between the two pedals of adjacent motion is less than 60 mm, the inner anti-skid boss, guard plate or other forms of the foot shall be fixed to prevent slipping.

5.3.1 Hand grip

5.3.1.1 The ring hand grip material used for carrying shall be 20mm~30mm in diameter.

5.3.1.2 For rod-shaped hand grip used for carrying, the material diameter shall be 30 mm to 45 mm in the case of a circle, and the material width shall be 30 mm to 45 mm in the case of a rectangle.

5.3.3 Adjustment and locking device

5.3.3.1 The adjustable part of the instrument shall be equipped with a locking device and should be easy to operate. The locking is safe and reliable, easy to identify and safely used by users.

5.4 Requirement for overall unit stability

5.4.1 Self-standing instrument shall be stable. The difference between the foot and the horizontal plane is $\leq 2\text{mm}$. It shall not be shaken during use.

5.4.2 When self-standing instrument is tested for stability according to 6.3.2, its tipping angle shall not be less than 10° .

5.4.3 Self-standing instrument shall be reliably positioned. There shall be no displacement when it is tested in accordance with 6.3.3.

5.5.1 Static load strength requirement

5.5.1.6 The sleeve shall be able to carry 70N of tensile force. It shall not be pulled out or loosened after testing according to 6.4.6.

5.5.2 Fatigue strength requirement Parts that are moving during the use of the instrument shall not cause any cracks, damage, etc. after the fatigue test according to 6.5, and still meet the standard functions.

5.6 Appearance requirements

5.6.1 For exposed part of hard part with a length greater than 8 mm, the tail ends shall be rounded or protected by other means. The radius of the rounding shall not be less than 5 mm.

5.6.2 The exposed length of the screw shall not exceed 2 times its pitch. The protruding part