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

GB/T 10599-2023

Replacing GB/T 10599-2010

Multi-rope friction hoists

多绳摩擦式提升机

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Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and Definitions	2
4 Type and basic parameters	2
5 Product complete supply scope	8
6 Test methods	8
3 Type inspection	10
8 Marking, packaging, transportation, storage and maintenance	10

Foreword

This document complies with the provisions of GB/T 1:1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting: This document replaces GB/T 10599-2010 "Multi-rope friction hoist": Compared with GB/T 10599-2010, except for structural adjustment and In addition to editorial changes, the main technical changes are as follows:

- a) Changed the product model compilation method (see 4:2, 3:2 of the:2010 edition);
- b) The main technical parameters of the product have been changed (see 4:3, 3:3 of the:2010 version);
- c) Changed the technical requirements for some parts and components (see Chapter 5, Chapter 4 of the:2010 edition);
- d) The product test method has been changed (see Chapter 6, Chapter 5 of the:2010 edition);
- e) Product inspection rules have been changed (see Chapter 7, Chapter 6 of the:2010 edition);
- f) The requirements for product marking, packaging, transportation, storage and maintenance have been changed (see Chapter 8, Chapter 7 of the:2010 edition): Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents: This document is proposed by China Machinery Industry Federation: This document is under the jurisdiction of the National Mining Machinery Standardization Technical Committee (SAC/TC88): This document was drafted by: Luoyang Mining Machinery Engineering Design and Research Institute Co., Ltd., CITIC Heavy Machinery Co., Ltd., Shanxi Xinfusheng Machinery

Manufacturing Co., Ltd.; Shaanxi Mining Equipment Inspection and Inspection Co., Ltd.; Jinzhou Mining Machinery (Group) Co., Ltd.; Shandong Taishan Tiandun Mining Machinery Co., Ltd.; Luoyang Baikete Technology Development Co., Ltd.; Luoyang Weka Mining Machinery Equipment Co., Ltd.; He Bi Wanfeng Mining Machinery Manufacturing Co., Ltd.; Yanchang Petroleum Balasu Coal Co., Ltd. The main drafters of this document: Qu Tie, Xu Yongfu, Du Bo, Zhang Lanjun, Nie Yong, Wang Shuang, Hu Xiuhai, Zhang Jiayi, Liu Kai, Niu Guoqiang, Hu Xilei, Sui Shun, Liang Guanying, Kou Lei, Gao Zhikang, Liu Tongxin, Li Yuhui, Guo Kongfei: This document was first published in 1989, revised for the first time in:1998, revised for the second time in:2010, and this is the third revision: Multi-rope friction hoist

1 Scope

China's national standard for multi-rope friction hoists - the winders that raise and lower the cages and skips in a deep mine shaft, and one of the few machines in industry that routinely carries people as its normal duty. In a friction hoist the ropes are not wound onto a drum: they pass over a driving sheave and are held by friction alone, with the cage on one side and a counterweight or a second cage on the other, and the load is shared between several ropes. That arrangement is what makes deep shafts possible - the drum that could hold enough rope for a deep wind would be impossibly large - and it introduces the condition the whole standard turns on, which is that the rope can slip on the sheave. It specifies the types, the basic parameters, the technical requirements, the test methods, the inspection rules, and the marking, packaging, transport, storage and maintenance of multi-rope friction hoists. The requirements accordingly cover the friction lining and the tension ratio that must be maintained on either side of the sheave in every operating and emergency condition, including the worst case of an emergency brake application; the braking system, with the two independent braking paths, the retardation limits that must stop the conveyance without either sliding the ropes or injuring the people in the cage, and the behaviour on loss of power; the rope arrangement and the equalisation of tension between the ropes, since a rope carrying more than its share is the one that fails; the overwind and overspeed protection; the depth indication and the control system; and the structure, the shafting and the bearings. The safety devices are treated as load bearing, not advisory, because on a hoist there is no manual fallback. Issued on 28 December 2023 and in force since 1 July 2024, it replaces GB/T 10599-2010.

This document specifies the type, basic parameters, technical requirements, test methods, inspection rules, marking, packaging, and transportation of multi-rope friction hoists: transportation, storage and maintenance: This document is suitable for installation in vertical shafts of coal mines, metal mines, and non-metal mines, for lifting people and objects in environments without explosive gases and dust: Multi-rope friction hoist for materials and equipment:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 191 Packaging, storage and transportation pictorial mark

GB/T 4879 Anti-rust packaging

GB/T 8923:1-2011 Visual assessment of surface cleanliness of steel surface preparation before application of coatings Part 1: Uncoated The corrosion grade and treatment grade of the steel surface and the steel surface after the original coating has been completely removed GB/T 13306 Signage

GB/T 13325 Basic criteria for measuring noise radiated by machines and equipment at the operator's position (engineering level)

GB/T 11345-2023 Ultrasonic testing technology, testing levels and assessment for non-destructive testing of welds

GB/T 13384 General technical conditions for mechanical and electrical product packaging

GB 16423 Safety regulations for metal and non-metal mines GB :20181 Safety requirements for mine hoists and mining hoisting winches

GB/T 25706 Mining machinery product model compilation method

GB/T 29712-2023 Non-destructive testing of welds and ultrasonic testing acceptance levels

GB/T 37400:1-2019 General technical conditions for heavy machinery Part 1: Product inspection GB/T 37400:

12 General technical conditions for heavy machinery Part 12: Coating

JB/T 1581 Ultrasonic testing method for steam turbine, turbine generator rotor and main shaft forgings

JB/T 3277 Mine hoist and mining hoist winch hydraulic station

JB/T 3721 Disc brake brake shoe for mine hoist and mine hoisting winch

JB/T 3812 Disc springs for disc brakes of mine hoists and mining winches

JB/T 6754:2 DC drive mine hoist electrical control equipment Part