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

GB/T 42628-2023

Machine tools safety - Sawing machines for cold metal

机床安全 金属锯床

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents" drafting: This document is equivalent to ISO 16093:2017 "Safety of Machine Tools for Cold Metal Sawing Machines": The following minimal editorial changes have been made to this document:

---The name of the standard was changed from "Machine Safety Cold Metal Sawing Machine" to "Machine Safety Metal Sawing Machine";

--- For the international standards in the normative reference documents and the international standards in the references, replace them with the equivalent transformed national standards;

---Change "Note 1" in many places in ISO 16093:2017 to "Note" in this document: Please note that some contents of this document may refer to patents: The issuing agency 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 Metal Cutting Machine Tool Standardization Technical Committee (SAC/TC22): This document is drafted by: Zhejiang Chenlong Sawing Machine Co., Ltd., General Technology Group Machine Tool Engineering Research Institute Co., Ltd., Zhejiang Chendiao Machinery Co., Ltd., Shijiazhuang Weifeng Machinery Manufacturing Co., Ltd., Tengzhou Sanhe Machinery Co., Ltd: The main drafters of this document: Deng Fang, Zhang Wei, Lu Jianfei, Xing Bin, Kang Bin, Ding Xiasheng, Chen Yanyan, Wang Jing, Wang Conggai, Mei Xingkun: Machine tool safety metal sawing machine

1 Scope

GB/T 42628-2023 sets the safety requirements for cold metal sawing machines. A metal saw is a large exposed blade cutting stock that has to be loaded, clamped and unloaded by

hand, and the injuries come from the obvious place and from two less obvious ones: the vice releasing when hydraulic pressure falls, and the offcut falling. The standard lists the significant hazards and the main hazard zones, then sets the safety requirements and protective measures for the general case, for each machine type in turn, and for other mechanical hazards, electrical hazards, thermal hazards, noise, vibration and the hazards from the material processed, followed by the verification and the information for use, with an annex giving the safety functions with their required performance levels and worked examples such as stopping a hazardous movement on loss of hydraulic pressure and preventing the vice from unclamping. It took effect on 1 December 2023.

This document is mainly concerned with the use of the various metal sawing machines listed in Chapter 3 (including auxiliary equipment such as workpiece clamping devices, cooling devices, feeding devices, etc.) for major hazards, dangerous situations and events that exist in the process of cold sawing ferrous or non-ferrous metals: The table in Chapter 4 of this document reveals the significant hazards for metal sawing machines: It stipulates that the manufacturer mainly abides by in the design and manufacture of sawing machines security elements: At the same time, this document is also an essential safety information for the manufacturer to provide the user with regard to the use of the sawing machine: This document can also be used as a basis for safety requirements for other machining methods (milling, boring, marking, finishing, etc.): For more information, please See references: This document deals with noise hazards, but does not provide complete noise test specifications: It is proposed that such specifications be drafted in the next revision of this document: This document does not include requirements and safety measures for fire and explosion hazards: It will be addressed in the next revision of this document: This document applies to (metal) sawing machines produced after its implementation:

2 Normative references

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

GB/T 3768-2017 Acoustic sound pressure method for the determination of sound power level and sound energy level of noise sources using the envelope measurement surface above the reflecting surface The simplified method (ISO 3746:2010, IDT)

GB/T 8196-2018 General requirements for the design and manufacture of fixed and movable guards for mechanical safety guards (ISO 14120:2015, IDT)

GB/T 15706-2012 General Principles of Machinery Safety Design Risk Assessment and Risk Reduction (ISO 12100:2010, IDT)

GB/T 16655-2008 Basic Requirements for Machinery Safety Integrated Manufacturing System (ISO 11161:2007, IDT)

GB/T 16855:1-2018 Safety-related components of machinery safety control systems Part 1: General principles for design (ISO 13849-1: 2015, IDT)

GB/T 17248:3-2018 Noise emitted by acoustic machines and equipment is determined using approximate environmental corrections for the determination of working positions and other Emission sound pressure level at specified location (ISO 11202:2010, IDT)

GB/T 17248:5-2018 Acoustic noise emitted by machines and equipment using accurate environmental corrections to determine working positions and other Emission sound pressure level at specified location (ISO 11204:2010, IDT)

GB/T 18831-2017 Design and selection principles of interlocking devices related to machinery safety and guards (ISO 14119: 2013, IDT)

GB/T 19876-2012 The safety of machinery and the positioning of safety guards related to the approach speed of human body parts (ISO 13855: 2010, IDT)

GB/T 23821-2009 Safety distance of machinery to prevent upper and lower limbs from touching dangerous areas (ISO 13857:2008, IDT)

GB/T 28780-2012 Overall lighting of machinery safety machinery (EN1837:1999, IDT) ISO 683-

1 Heat-treatable, alloy and free-machining steels - Part 1: Non-alloys for quenching and tempering (Heat-treatable

GB/T 34484:1-2017 Heat-treated steel Part 1: Non-alloy steel (ISO 683-1:2016, MOD)