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Foundry machinery - Cutting, grinding and finishing equipment for casting cleaning - Safety technical specifications

铸造机械 铸件清理用切割、磨削和精整设备 安全技术规范

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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: 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 Foundry Machinery Standardization Technical Committee (SAC/TC186): This document was drafted by: Qingdao Antai Heavy Machinery Co:, Ltd:, Beijing Jiaotong University, Beijing Mosenna Cutting Technology Equipment Co:, Ltd:, CTI Testing and Certification Group Co:, Ltd:, Fujian Minxuan Technology Co:, Ltd:, Guoxun Technology (Xiamen) Co:, Ltd:, Dalian Yuyang Industrial Intelligence Co:, Ltd:, Zhejiang Wanfeng Technology Development Co:, Ltd:, Zhejiang Wujing Machinery Manufacturing Co:, Ltd:, Jinhua Baolin Technology Co:, Ltd: Co:, Ltd:, China Automotive Industry Engineering Co:, Ltd:, Jinan Casting and Forging Institute Inspection and Testing Technology Co:, Ltd:, Nan'an CMC Standardization Research Institute Co:, Ltd:, Shandong Jiechuang Machinery Co:, Ltd:, Qingdao Kaijie Heavy Industry Machinery Co:, Ltd:, Dongguan New Pivot Technology Service Co:, Ltd:, Qingdao Dao Sanrui Machinery Manufacturing Co:, Ltd:, Weihai Gongyou Casting Machinery Co:, Ltd:, Qingdao Zhongzhida Environmental Protection Melting Equipment Co:, Ltd:, Qingdao Qingli Environmental Protection Equipment Co:, Ltd:, Anhui Anhuang Machinery Co:, Ltd:, Anhui Pengyan New Materials Co:, Ltd:, and Sichuan Yulu Technology Co:, Ltd: The main drafters of this document: Ding Renxiang, Fan Wengang, Ji Yan, Yu Yanqi, Cai Jin, Chen Huiling, Que Caiping, Li Wenjun, Wu Jun, Zhang Xuxia, Wang Yongwu, Chen Miaoyong, Liu Xiaolong, Lu Jun, Zhu Bin, Cheng Kai, Su Liguo, Li Yi, Yan Zuoxiu, Zhao Peng, Duan Jinting, Sui Chengfu, Han Yong, Fang Rui, Gu Taicui:

According to the national requirements for the integration and streamlining of mandatory standards, this document is a recommended standard and serves as a supporting standard for GB 20905: According to the classification of GB/T 15706-2012, this document belongs to Class C standard: This document is of particular relevance to the following stakeholders

concerned with the safety of the machinery covered by this document:

---Machine manufacturer;

---Health and Safety Agencies: Other stakeholders affected by the safety level of machinery are:

---Machine users;

---Machine owner;

---Service providers: All the above-mentioned stakeholders may participate in the drafting of this document: The machines covered by this document and the range of hazards, hazardous states or hazardous events covered are given within the scope of this document: When the requirements in this document are different from those in Class A standards or Class B standards, equipment that has been designed and manufactured in accordance with this document must equipment, the requirements in this document take precedence over those in other standards: Foundry machinery casting cleaning with cutting, grinding and Safety technical specifications for finishing equipment

1 Scope

China's national safety specifications for the cutting, grinding and finishing equipment used in casting cleaning. Cleaning - the fettling shop - is where the runners, risers and flash are removed from a casting and the surface is dressed, and it is the most dangerous area of a foundry by a considerable margin. The hazards compound: abrasive wheels running at high speed with the operator holding the work against them, cut-off saws and burners, castings that are heavy, awkward and often still hot, and an atmosphere of silica-bearing dust that causes the occupational disease the industry is known for. The work is also inherently manual, because each casting is slightly different and the operator is judging as much as cutting - which is why the safety case rests on guarding, extraction and the wheel handling rules rather than on the automation that has removed the equivalent risk elsewhere.

This document specifies safety requirements and/or risk reduction measures and usage information for cutting, grinding and finishing equipment used for cleaning castings, describing corresponding verification method: This document lists the requirements for use of cutting, grinding and finishing equipment for casting cleaning when used as intended and when errors are reasonably foreseeable by the manufacturer: Examples of major hazards, dangerous states or dangerous events related to this type of equipment when used under normal conditions (see Appendix A): This document applies to the design, manufacture and acceptance of cutting, grinding and finishing equipment for casting cleaning:

Note: Cutting, grinding and finishing equipment for casting cleaning include impact riser removal hammers, pouring riser separators, edge trimmers, band saw cutting machines, disc saw cutting machines, sand Wheel cutters, suspended grinders, grinding cleaning

machines, drum cleaning machines, vibration cleaning machines, CNC cutting centers, CNC grinding centers and automatic cleaning unit: This document does not apply to cutting, grinding and finishing equipment for casting cleaning manufactured prior to the implementation of this document:

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 2893-2008 Safety Color

GB 2894 Safety signs and guidelines for their use

GB/T 3766 General rules and safety requirements for hydraulic transmission systems and their components GB/T 3836:

15 Explosive atmospheres Part 15: Design, selection and installation of electrical installations

GB/T 4208-2017 Shell protection level (IP code)

GB/T 5226:1-2019 Mechanical and electrical safety mechanical and electrical equipment Part 1: General technical conditions

GB/T 6576 Machine tool lubrication system

GB/T 7932 General rules and safety requirements for pneumatic systems and their components

GB/T 8196-2018 General requirements for the design and manufacture of fixed and movable guards for mechanical safety guards

GB/T 9969 General Principles of Instructions for Use of Industrial Products

GB/T 12265 Minimum spacing for mechanical safety to prevent extrusion of human body parts

GB/T 14776 Ergonomic workplace size design principles and values GB/T 15241: