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

GB 24391-2009

Low pressure die casting machine - Safety requirements

低压铸造机 安全要求

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Table of Contents

1	Scope
2	Normative references
3	Terms and Definitions
4	Important risk projects
4.2	Mechanical hazards
4.4	Electrical Hazards
4.5	Thermal hazards
4.8	Other hazards
5	Safety requirements and/or measures
5.1	Basic requirements
5.2	Low-pressure casting mold safety requirements danger zone
5.3	Pairs of the electrical system requirements
5.4	Pairs of control system requirements
5.8	Additional security requirements

Foreword

Chapter 3 of this standard are recommended, the rest are mandatory. The standard proposed by China Machinery Industry Federation. This standard by the National Foundry Machinery Standardization Technical Committee (SAC/TC186) centralized. This standard was drafted. Jinan Foundry and Metalforming Machinery Research Institute, Zhejiang Wanfeng Technology Development Co., Huarong Tianshui Foundry Machinery Co., the company. The main drafters of this standard. Jing Kang Yue, Lu Jun, Ding Supei, Jiang Yuhua, Li Jianping. This standard is the first release. Safety requirements for low-pressure casting machine

1 Scope

GB 24391-2009 is the Chinese national standard on low pressure die casting machine - safety requirements, in the field of manufacturing engineering. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 30 September 2009 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 July 2010. Classification: ICS 25.120.30, CCS J61. This page is

published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the basic safety requirements for low-pressure casting machine designers, manufacturers, users and vendors should follow. This standard applies to the crucible furnace sealing and seal, horizontal type and vertical type low pressure casting machine (hereinafter referred to as low-pressure casting machine).

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 3766 Hydraulic System General technical conditions (GB/T 3766-2001, eqv ISO 4413.1998)

GB 5083 production equipment with safety and health General

GB 5226.1-2002 Safety of machinery electrical equipment Part 1. General requirements (IEC 60204-1.2000, IDT)

GB/T 7932 pneumatic systems General technical conditions (GB/T 7932-2003, ISO 4414.1998, IDT)

GB/T 9969 General Instructions industrial products

GB 12265.1 machinery Safety distances to prevent danger zones being reached upper limbs (

GB 12265.1-1997, eqvEN294. 1992)

GB 12265.3 Safety of machinery to avoid crushing of parts of the human body minimum spacing (

GB 12265.3-1997, eqvEN349. 1993)

GB/T 14776 Ergonomic design principles job size and value

GB/T 15706.1 Safety of machinery - Basic concepts, general principles for design - Part 1. Basic terminology, methodology (GB/T 15706.1- 2007, ISO 12100-1.2003, IDT)

GB/T 15706.2-2007 Safety of machinery - Basic concepts, general principles for design - Part 2. Technical principles (

ISO 12100-2. 2003, IDT) Ergonomic principles

3 Terms and Definitions

GB/T 15706.1, GB/T 16856.1, JB/T 7536 and JB/T 9978 and established the following terms and definitions apply to this standard.

3.1 With sand, metal or refractory materials, including combinations of integrally formed shape casting cavity, core and Riser System.

3.2 Joint surface between the mold component.

3.3 Low-pressure casting machine, complete the main parting line closed, and to prevent mold body separated in the filling and pressurization process. The mechanism You can set up a separate ejection mechanism and counter mechanism.

3.4 Low pressure casting machine or auxiliary device, except for the parting is possible to make a part of the human body by any other part of pinched. This Some parts may be between the moving parts or between moving parts and the fixed member or between moving parts and castings.

4 Important risk projects

4.1 General This standard is an important risk project is based GB/T 16856.1 results of the low-pressure casting machine risk assessment within the scope of this standard.

4.2 Mechanical hazards

4.2.1 low pressure casting machine working process, which may cause moving parts to persons pinching, shearing, collision, winding and dangerous.

4.2.2 low pressure casting machine parts due to the form factor, the acute angle corners may be cut or stabbed on the person causing danger.

4.2.3 low pressure casting machine parts during use due to loose, loose, broken or dropped, broken, thrown dangerous may cause.

4.2.4 low pressure casting machine may have its own motion or control of hazardous components may cause failure of unexpected movement under the influence of gravity.

4.2.5 In the high-altitude operations (repair or maintenance, etc.) may result in the risk of falling. Four weeks low pressure casting machine may cause slipping, tripping Fall hazards. Maintenance personnel to operate or operating narrow space collision may suffer inconvenience pinched and dangerous.

4.3 risk may be caused by the high pressure fluid

4.3.1 Maximum pressure hydraulic and pneumatic systems exceeds the risk of the system

rated working pressure components caused.

4.3.2 Blasting dangerous hydraulic accumulator may occur.

4.3.3 accumulator in the absence of complete relief of dangerous demolition or repairs caused.

4.3.4 hydraulic or pneumatic systems may cause leakage and contamination of the ground caused by the ejection dangerous slipping and dangerous.

4.3.5 hydraulic system pressure loss or pressure drop may cause a serious risk of failure mechanism caused.

4.3.6 hydraulic or pneumatic system piping can cause foreign body element (including seal) abnormal operation, resulting in personal injury and failure mechanism Danger.

4.3.7 pneumatic tank overpressure system may cause danger.

4.3.8 occur holding furnace gas under pressure leakage and the risk of burns.

4.4 Electrical Hazards

4.4.1 direct contact with exposed energized parts or insulation failure of live wires or components may cause electric shock, fire, burns, falls And dangerous.

4.4.2 Control component failure hazard caused by incorrect operation.

4.5 Thermal hazards

4.5.1 ladle holding furnace injection to low pressure casting molten metal splashes that might arise during dangerous person burns, burns.

4.5.2 Bonded low pressure casting machine, without interlock (interlock or failure) state is not in place due to the combined type, open type of accident or other negligence may Can cause dangerous liquid metal from the sub-surface ejected.

4.5.3 In casting yet solidified or when there is residual pressure in the holding furnace opening type, molten metal spilled from the parting surface in danger.

4.5.4 When there is residual pressure in the holding furnace plus job liquid metal, compressed air or hot molten metal ejected from the charging port Danger.

4.5.5 In the casting process, the molten metal may be dangerous from the mold surface ejected.

4.6 noise hazard Due but not limited to the following causes of the low-pressure casting machine noise is too large, causing long-term hearing loss after operating personnel work, tinnitus, fatigue Labor, mental depression and auditory interference signals danger.

--- Pneumatic exhaust systems;