ICS 25.120.30
CCS J61

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 25491-2010

Molding machine - Safety requirements

造型机 安全要求

Issued on: December 1, 2010 **Implemented on: October 1, 2011**

Issued by: General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;
Standardization Administration of China

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Foreword

All the technical contents of this standard is 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. The Zimmer Jinan Forging Machinery Co., Ltd., Jinan Foundry and Metalforming Machinery Research Institute, caused by the constant (Tianjin) Industrial Co., the company. The main drafters of this standard. Lu Jun, ZHU Xiao steel, any Ebel. Molding machines - Safety requirements

1 Scope

GB 25491-2010 is the Chinese national standard on molding 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 1 December 2010 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 October 2011. 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 of the molding machine designers, manufacturers and suppliers and users should follow. This standard applies to foundry shapes with various types of molding machine (hereinafter referred to as molding machine), also applies to the molding line machine shop.

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 5083 production equipment with safety and health General

GB 5226.1-2008 Safety of machinery - Electrical machinery and electrical equipment - Part 1. General requirements (IEC 60204-1.2005, IDT)

GB/T 9969 General Instructions industrial products

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

GB/T 16251 design of work systems (GB/T 16251-2008, ISO 6385.2004, IDT)

GB 16754 Safety of machinery - Emergency stop design principles (GB 16754-2008, ISO 13850.2006, IDT)

GB/T 16855.1 machinery safety control system relating to safety components - Part 1. General principles for design (GB/T 16855.1- 2008, ISO 13849-1.2006, IDT)

GB/T 16856.1 Safety of machinery - Risk assessment - Part 1. Principles (GB/T

16856.1-2008,

3 Important risk projects

3.1 General The following items are important risk based on GB/T 16856.1 within the scope of this standard molding machine risk assessment.

3.2 Mechanical hazards

3.2.1 molding machine operation, which may cause moving parts to persons pinching, shearing, collision, winding and dangerous.

3.2.2 molding machine parts due to the form factor, its sharp edges, corners may be cut or stabbed on the person causing danger.

3.2.3 molding machine parts during use due to loose, loose, broken or dropped, broken, thrown dangerous may cause.

3.2.4 molding machine control its own motion or hazardous components may cause malfunction of unexpected movement.

3.2.5 In the high-altitude operations (repair or maintenance, etc.) may result in the risk of falling.

3.2.6 molding machine four weeks may cause slipping, tripping hazard.

3.2.7 Maintenance personnel to operate or operating narrow space collision may suffer inconvenience, pinch, and dangerous.

3.3 risk may be caused by the high pressure fluid

3.3.1 Maximum pressure hydraulic and pneumatic systems outweigh the risks rated safe working pressure of components caused by the system. Explosion hazards

3.3.2 Pneumatic compaction molding machine pressure vessel (gas storage bag) and a cylinder, etc. may occur.

3.3.3 hydraulic circuit with accumulator, the accumulator relief at not fully dismantle dangerous situation caused by maintenance or.

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

3.3.5 pressure loss or pressure drop may cause serious body malfunction dangerous.

3.3.6 system piping can cause elements (including seal) foreign object damage (eg scale, burrs, moisture, etc.) may cause failure mechanism And personal injury.

3.4 Electrical Hazards

3.4.1 direct contact with exposed energized parts or insulation failure of live wires or components may cause electric shock, fire, burns, panic Falls and other hazards.

3.4.2 dangerous failure of the control electronics caused by incorrect operation.

3.5 Noise and vibration Dangerous

3.5.1 molding machine causing excessive noise by the following reasons, causing the operator to long-term hearing loss, tinnitus, fatigue, mental depression and Audible signal interference danger.

--- Shock compaction mechanism, vibration son, vibration, sand and other mechanical shocks;

--- Pneumatic system and the impact of air, shooting sand exhaust;

--- Motor and pump operation imbalances;

--- Improper piping installation, fixed is not strong;

--- Other mechanical shocks.

3.5.2 operator working positions and often walk around the area due to mechanical vibration caused by the operator after causing a long-term illness.

3.6 hazardous materials and substances produced Dust or other harmful substances

3.6.1 production process may cause irritation and inhalation hazard to human organs.

3.6.2 molding machine mold lubricant may cause a fire danger. Smoke and fog produced by mold lubricant may be made in human organs To stimulate and inhalation hazards.

3.6.3 molding machine hydraulic medium may cause a fire danger.

3.7 Other hazards

3.7.1 By ignoring the risk of ergonomic principles of ergonomics can cause, such as the operating direction is easy to produce errors, inappropriate lighting, too tight Zhang and fatigue.

3.7.2 loading, during transport, much weight, poor stability, spare parts, not fixed, and strong enough spreader tipping accidents and other causes, shift Moving or falling hazard.

3.7.3 molding machine and control systems against electromagnetic interference resulting in poor performance machines not working properly can be dangerous.

3.7.4 two or more than two dangerous operation molding machine operator, since uncoordinated or other accidents caused by the operation.