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

GB 28240-2012

Shears - Safety requirements

剪板机 安全技术要求

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Foreword

The standard Chapter 3, Chapter 4 and Appendix B are recommended, the rest are mandatory. This standard was drafted in accordance with GB/T 1.1-2009 given rules. The standard proposed by China Machinery Industry Federation. This standard by the National Forging Machinery Standardization Technical Committee (SAC/TC220) centralized. This standard was drafted. Jinan Foundry and Metalforming Machinery Research Institute Co., Ltd., Jiangsu strength Forging Machine Co., Ltd., Anhui Sanli Machine Manufacturing Co., Ltd., Shanghai Machine Tool Plant punching, Tianshui Metalforming Machine Tool Co., Ltd. The main drafters of this standard. Mali Jiang, Luo Guilin, Bao Dao, Fu Gang, Cai Li Quan, Li Deming. Shears Safety requirements

1 Scope

GB 28240-2012 is the Chinese national standard on shears - 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 9 March 2012 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 January 2013. Classification: ICS 25.120.10, CCS J62. 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 technical requirements and shears Safety measures. This standard applies to cut sheet metal or other sheet material (such as cardboard, plastic, rubber, leather, etc.) of the shears and associated apparatus. this Does not apply to non-linear shear and alligator shears.

1.4 Winding danger

1.5 introduce or involved in dangerous Blades and related areas.

- Motion between the blade and the workpiece;
- Motion between the blade and the fixed blade;
- Between moving parts and fixed parts;
- Between the bench and the workpiece;
- Nip between the device and the table or the workpiece;
- Security guards 4.2 5.2.4,5.3,5.5

1.6 shock hazard electrical, hydraulic, pneumatic equipment moving parts; Motor and drive mechanism; Sports flywheel, belts, pulleys and other motors Drive member; Mechanical handling means

1.7 high pressure fluid ejection hazard hydraulic system, pneumatic system 5.6

5.8.3 Table 1 (continued) No. Danger Zone GB/T 15706.1- Article 2007 of the relevant chapter Security measures (This standard is relevant clauses)

2 electrical hazards

2.1 people in contact with live parts (direct contact) Electrical Equipment 4.3 5.8.1

2.2 people live and becomes zero under fault conditions Member contact (indirect contact)

Electrical Equipment 4.3 5.8.1

3 thermal hazards

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB 2894 Safety Signs and use guidelines

GB/T 3766 Hydraulic System General technical conditions (ISO 4413)

GB 4208 housing protection (IP Code)

GB 4584 presses photoelectric protection device technology

GB 5226.1-2008 Safety of machinery - Electrical machinery and electrical equipment - Part 1. General requirements (

IEC 60204-1:2005) GB Safety of laser products - Part 1. Equipment classification, requirements and user guide (IEC 60825-1:1993)

GB/T 7932 pneumatic systems General technical conditions (ISO 4414)

GB/T 8196 mechanical safety devices fixed and movable guards design and manufacture of general requirements (ISO 14120)

GB/T 9969 General Instructions industrial products

GB/T 14775 manipulator General ergonomics requirements

GB/T 14776 Ergonomic design principles job size and value (DIN33406)

GB/T 15706.1-2007 Safety of machinery - Basic concepts, general principles for design - Part 1. Basic terminology, methodology (ISO 12100- 1:2003)

GB/T 15706.2-2007 Safety of machinery - Basic concepts, general principles for design - Part 2. Technical principles (ISO 12100-2. 2003)

3 Terms and Definitions

GB/T 15706.1, and the following terms and definitions GB/T 15706.2 and GB 17120 apply to this document defined.

3.1 Auxiliary device ancillary device Together with shears and integrated into the device (such as lubrication, feed devices, etc.) on the shears.

3.2 Toolholder beam The main part is equipped with reciprocating motion on the cutting blade. It may be a linear guide type, it can be the swing.

3.3 Pressing device clamp Process will cut the sheet pressed against the upper apparatus.

3.4 Alligator shears crocodileshears With similar shears scissors action. Applying a force along the angular direction of the shaft, the blade action only by the guide shaft.

3.5 Cycle cycle Operating cycle operatingcycle Moving parts from the cycle stop position (usually top dead center) to the lower dead point, then loop back to the stop position (usually top dead center) to complete The movement. Operating cycle includes the whole process of this movement.

3.6 Dead deadcentres Movement limit position in which the blade in its stroke. Blades closed end position stroke, known as the bottom dead center (BDC); return transport blade Moving end position, known as the top dead center (TDC).

3.7 Shears guilotineshears Machine, work bench by the wall, on the table and beam motion (turret) consisting of fixed lower blade, the blade is fixed on the upper beam sheet. Cutting blade angle can be fixed, it can be adjustable, often called shears or shears.

3.8 Limited motion control device limitedmovementcontroldevice Jog means inchingdevice The cutting stroke of moving parts is limited within a certain range of the control device, so as to minimize the risk. Only intermittently Operation of the device, will have a further movement. [GB/T 15706.1-2007, the definition 3.26.9]

3.9 Surveillance monitoring A security feature if a component (element) is no longer able to exercise its function due to changes in processing conditions or make further worked Cheng will be dangerous when issuing safety information.

3.10 Inhibition muting By the safety control system components on one or more security features automatic stay temporarily.

3.11 The total response time to stop overallresponsetime Stop system performance overalsystemstoppingperformance Means started from security guards to stop the dangerous movement or machine into a safe state elapsed time.

3.12 Redundancy redundancy Multiple devices or systems, for failure to ensure that all the way, another way to effectively perform the required function.

4 Major hazards

4.1 List of dangerous according to GB/T 16856.1 risk assessment results are shown in Table 1, to eliminate or reduce the risk of technical safety measures appropriate risk Implementation and usage information, see Chapter 5 and Chapter 7.

4.2 Risk Assessment assumptions may approach shears from all directions, including the slider and unexpected stroke risk weight whereabouts. Risk Assessment package Including the risk of entering the danger zone operators and other personnel produced, taking into account the lifetime of the machine's intended use conditions (eg Commissioning, mold