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**GB 28242-2012**

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**Screw presses - Safety requirements**

螺旋压力机 安全技术要求

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## Foreword

This standard Chapters 5 and 6 are mandatory, the rest are recommended. 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. Qingdao Green forging Forging Machinery Co., Ltd., Jinan Foundry and Metalforming Machinery Research Institute Co., Ltd., Hubei Fusheng Forging Machinery Co., Ltd. Liaoyang Forging Machine. The main drafters of this standard. Xingji Bo, Ma Liqiang, Wu with students, Zhangyuan Liang, Liaogui Fang, Li Shujun, Liufeng Qin, Zhu Yuansheng, Liu Fenghua, Zhang Huade. Screw presses - Safety requirements

## 1 Scope

GB 28242-2012 is the Chinese national standard on screw presses - 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 for safety screw press. This standard applies to friction screw presses, electric screw presses, hydraulic screw press, clutch screw press (hereinafter referred to as Presses).

## 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 150.1 pressure vessels - Part 1. General requirements

GB 150.2 pressure vessels - Part 2. Materials

GB 150.3 pressure vessels - Part 3. Design

GB 150.4 Pressure Vessels Part 4. fabrication, inspection and acceptance

GB 2894-2008 Guidelines for the use and safety signs

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

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/T 7932-2003 Pneumatic system General technical conditions ( ISO 4414.1998)

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)

GB/T 16856.1 Safety of machinery - Risk assessment - Part 1. Principles ( ISO 14121-1)

GB 17120 Metalforming machinery - Safety requirements

### 3 Terms and Definitions

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

3.1 Dangerous hazard Potential source of harm. [GB/T 15706.1-2007, the definition 3.6]

3.2 Risk risk The probability of occurrence of injury and injury severity synthesis. [GB/T 15706.1-2007, the definition 3.11]

3.3 Danger zone dangerzone So that personnel exposed to dangerous machinery any space within and/or around. [GB/T 15706.1-2007, the definition 3.10]

3.4 Guard guard An integral part of the machine, for providing a physical barrier protection. [GB/T 15706.1-2007, the definition 3.25]

3.5 Protection safetydevice Outside guard safety device. [GB/T 15706.1-2007, the definition 3.26]

3.6 Slide stroke strokeofslide By the movement of the slider to the displacement of the upper limit position of the lower limit position.

3.7 Security Bar safetyscotch; mechanicalrestraintscotch When the press mold adjustment or repair, on the underside of the upper and lower molds or slider with the table plate to prevent accidental shift slider Dynamic and dangerous one pillar or stopper. Dangerous 4 presses

4.1 should be GB/T 15706.1 and GB/T 16856.1 provisions risk assessment.

4.2 hazard identification, hazard for foreseeable misuse (including presses use, adjustment, cleaning and maintenance) should be produced analysis.

4.3 to consider the risk of the press see GB/T 15706.1-2007 Chapter 4.

### 5.1 General Requirements

5.1.1 The press shall comply with the provisions of GB 17120.

5.1.2 In determining the press of a predetermined function, intended use, when life expectancy should be considered safety precautions. Press conditions required system Manufacture, installation, commissioning, maintenance, repair, storage, transport and use and are not dangerous.

5.1.3 should be possible to exclude or reduce risk through the design, alone or in combination include the following measures.

--- Choose the appropriate design of the structure to avoid or reduce the risk;

--- Reduce operator needs to enter the danger zone, to limit their risk.

5.1.4 By design danger can not be avoided or sufficiently limited, the security guards should be used for personnel protection.

5.1.5 the dangers and risks of certain inconveniences due to insufficient protection guard and remain shall inform the operator through effective manner. Such as Described in the instructions for use, should be set up warning signs "must wear helmets", "caution", "must take ear protectors" and security in the dangerous position Full signage.

## 5.2 Mechanical hazards and protective

5.2.1 easy to press the contact portions and components can cause personal injury shall have sharp edges, sharp corners, sharp edges, etc., in order to avoid puncture or pricks Danger.

5.2.2 slide stroke should be set upper limit and lower directions.

5.2.3 press unidirectional rotating parts, such as friction discs, etc. should turn directions.

5.2.4 press cushioning device should be set to prevent the occurrence of slider beam rigidity and body up to the upper limit when the brakes failed while Impact.

5.2.5 clutch screw press of the clutch and brake pressure air and liquid should meet the design requirements, in which the brake When the pressure is below a predetermined design value, the slider should not exercise.

5.2.6 slider row, in any position can brake and the slider can not occur with a rigid beam impact.

5.2.7 brake power brake should be used.

5.2.8 press should be set Safety Lock to prevent accidental movement of the slider and dangerous mold when adjustments or repairs carried out in the press, the Means should be used with the control system interlock.

5.2.9 Nominal force greater than 4000kN type forging presses should be set overload protection device. Type stamping presses can be excluded.

5.2.10 moment ejector means in the limit position, the movable plate (or moveable table) to exercise. Separate drive under the top feeder, when it Leaving the lower limit position, the slider can not be down.

5.2.11 may cause wound, inhaled or involved in dangerous moving parts and transmission should set the security guards. Crushing and/or shearing hazard exists between

5.2.12 moving parts and moving parts or moving parts and the stationary member, should take security Protective measures.

## 5.3 Security guards