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

GB/T 42596.2-2024

**Machine tools safety - Presses - Part 2: Safety requirements for
mechanical presses
(English Translation)**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 2 of GB/T 42596 Machine Tool Safety Press. GB/T 42596 has been published in the following parts.

- Part 1: General safety requirements;
- Part 2: Safety requirements for mechanical presses;
- Part 3: Safety requirements for hydraulic presses;
- Part 4: Safety requirements for pneumatic presses.

This document is modified to adopt ISO 16092-2:2019 "Machine tool safety presses Part 2: Safety requirements for mechanical presses".

Compared with ISO 16092-2:2019, this document has made the following structural adjustments.

- The requirements for the suspension section of 5.2.3 are moved into 5.2.3.1;
- The requirements for the suspension section of 5.3.6 are moved into 5.3.6.1;

- The requirements for the suspension section of 5.4.1 are moved into 5.4.1.1;
- 5.4.1.2.1, 5.4.1.2.2 and 5.4.1.2.3 are adjusted to the items of 5.4.1.2;
- 5.4.1.3.1 and 5.4.1.3.2 are adjusted to the items of 5.4.1.3;
- The requirements for the suspension section of 5.4.2 are moved into 5.4.2.1;
- The requirements for the suspension section of 5.4.4 are moved into 5.4.4.1;
- The suspension section requirements of 5.5 are moved into 5.5.1.

The technical differences between this document and ISO 16092-2:2019 and their reasons are as follows.

- Replace IEC 60947-5-1:2016 (see Chapter 5) with the normative reference GB/T 14048.5-2017. The differences between the two documents are the consistency level is modified to adapt to my country's technical conditions and increase operability;
- Replace ISO 16092-1:2017 (see Chapter 5) with the normative reference GB/T 42596.1-2023.

The consistency level is modified to adapt to my country's technical conditions and increase operability;

- Replace ISO 16092-3:2019 (see Chapter 5) with the normative reference GB/T 42596.3-2023. The difference between the two documents the consistency level is modified to adapt to my country's technical conditions and increase operability;
- Added normative reference to GB 17120 "Safety Technical Requirements for Forging Machinery" (see Chapter 5) to implement the Mandatory national standard for the machinery industry.

Introduction

According to GB/T 15706-2012, this document belongs to Class C standard.

This document is of particular interest to the following stakeholders with regard to machinery safety.

- Machine manufacturers (small, medium and large enterprises);
- Health and safety authorities (regulatory agencies, accident prevention organizations, market regulators, etc.).

Other stakeholders affected by the level of machinery safety are.

- Machine users/employers (small, medium and large enterprises);
- Machine users/employees (e.g. trade unions, organizations of people with special needs);

- Service providers, such as maintenance providers (small, medium and large enterprises);
- Consumer (for machinery intended for use by consumers).

All of the above stakeholders may participate in the drafting of this document.

The scope of this document indicates the machinery concerned and the range of hazards, hazardous situations or hazardous events covered.

When the requirements in a C-type standard differ from those specified in a Class A or Class B standard, the requirements of this C-type standard shall take precedence over those in the other standard.

The machines shall be designed and manufactured in accordance with the requirements of this Category C standard.

GB/T 42596 "Machine Tool Safety Press" is intended to be divided into the following four parts.

--- Part 1: General safety requirements. The purpose is to establish the general safety technical requirements that should be followed when designing, manufacturing and supplying presses.

Summation measures.

--- Part 2: Safety requirements for mechanical presses. The purpose is to establish safety requirements that should be followed when designing, manufacturing and supplying mechanical presses.

Technical requirements and measures.

--- Part 3: Safety requirements for hydraulic presses. The purpose is to establish safety requirements for the design, manufacture and supply of hydraulic presses;

--- Part 4: Safety requirements for pneumatic presses. The purpose is to establish the safety requirements that should be followed when designing, manufacturing and supplying pneumatic presses.

Technical requirements and measures.

Machine Tool Safety Press Part 2: Safety requirements for mechanical presses

1 Scope

In addition to GB/T 42596.1-2023, this document specifies the design, manufacture and supply of the following types of mechanical presses and mechanical presses Safety technical requirements and measures that the production system should take.

- a) Type 1.press using split-speed clutch;

b) Type 2. Press using a servo drive system (mechanical servo press).

NOTE 1 The requirements in this document apply to both types of mechanical presses. If a requirement applies to only one type of press, this shall be indicated.

NOTE 2 Other types of electric drive systems provide similar functions and are often referred to as "servo drives" or "servomotors" and therefore the term is used in this document.

In the lingo, their uses are considered to be the same (for example, variable frequency drive system).

This document applies to mechanical presses ranging in capability from small, high-speed presses operated by a single operator producing small workpieces, to presses operated by multiple operators.

Large, slow presses that require minimal human intervention and produce large, complex workpieces.

This document deals with mechanical presses under conditions of intended use and misuse reasonably foreseeable by the manufacturer.

All significant hazards of auxiliary equipment (e.g., moving mold air cushions, workpiece ejectors, feeding and transfer systems) (see Chapter 4).

All stages of the press life cycle as specified in 5.4 of GB/T 15706-2012.

NOTE 3 All significant hazards are those identified or associated with the press at the time of publication of this document.

In addition to the machines not included in GB/T 42596.1-2023, this document does not apply to the following machines.

- a) Energy is transferred through hydraulic or pneumatic devices to move the press slide.
- b) There are two or more sliders moving in different angular directions.

NOTE 4 This document applies to presses with two or more slides moving in the same angular direction, for example, a press with inner and outer slides.

- c) Use one or more linear motor mechanisms to transfer energy to move the press slide.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.