

ICS 25.120.10

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

GB/T 42596.4-2024

**Machine tools safety - Presses - Part 4: Safety requirements for
pneumatic presses
(English Translation)**

Issued on: November 28, 2024

Implemented on: November 28, 2024

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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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 is required.

This document is Part 4 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 16092-4:2019 "Machine tool safety presses Part 4: Safety requirements for pneumatic presses".

This document has made the following structural adjustments compared to ISO 16092-4:2019.

- 5.3.6.1 corresponds to 5.3.6 of ISO 16092-4:2019; 5.3.6.2 is added.

The technical differences between this document and ISO 16092-4:2019 and their reasons are as follows.

-- Added normative reference GB 17120 (see Chapter 5) to implement the national mandatory standard;

-- Replace ISO 16092-4:2017 (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 4413:2010 with the normative reference GB/T 3766-2015 (see Chapter 5), consistency between the two documents the degree of modification is to adapt to my country's technical conditions and increase operability;

-- The normative reference GB/T 19671-2005 replaces ISO 13851:2002 (see Chapter 5). The consistency between the two documents the degree of modification is to adapt to my country's technical conditions and increase operability;

-- Added the requirement to provide additional mechanical support devices for manual placement (see 5.3.6.2) to meet the safety requirements when repairing pneumatic presses.

Full protection requirements;

-- Added calculation requirements for minimum safety distance (see Appendix B) to facilitate calculation of safety distance.

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 bodies (regulatory agencies, accident prevention organisations, market regulators, etc.).

Other stakeholders affected by the level of machinery safety are.

-- Machine users/employers (small, medium and large businesses);

-- machine users/employees (e.g. trade unions, special needs organisations);

-- Service providers, such as those providing maintenance (small, medium and large businesses);

-- 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 type A or B standard, the requirements of this C-type standard take precedence over those of the other standard.

The machines shall be designed and manufactured in accordance with the requirements of this C-type 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 technology that should be followed when designing, manufacturing and supplying presses.

Requirements and 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.

Full 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.

Full technical requirements and measures.

Machine Tool Safety Press Part 4: Safety requirements for pneumatic presses

1 Scope

This document specifies the safety measures that should be taken by the design, manufacture and supplier of pneumatic presses for metal cold working or some non-metal cold working.

Technical requirements and measures.

This document applies to pneumatic presses. It covers possible hazardous situations or Incidents, or measures to deal with major hazards (see Chapter 4) caused by foreseeable violations of operation. GB/T 15706-the stages of equipment life described in 5.4 of 2012.

2 Normative references

The contents of the following documents constitute the 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.

GB/T 3766-2015 General rules and safety requirements for hydraulic transmission systems and their components (ISO 4413:2010, MOD) GB/T 15706-2012 General principles for safety design of machinery - Risk assessment and risk reduction (ISO 12100:2010, IDT) GB/T 16855.1-2018 Safety of machinery - Safety-related components of control systems - Part 1: General principles for design (ISO 13849-1.

2015, IDT)

GB 17120 Safety technical requirements for forging machinery GB/T 19671-2022 Principles for the design and selection of safe two-hand controls for machinery (ISO 13851:2019, MOD) GB/T 42596.1-2023 Machine tool safety Presses Part 1: General safety requirements (ISO 16092-1:2017, MOD)

3 Terms and definitions

Terms and definitions defined in GB/T 15706-2012, GB/T 16855.1-2018 and GB/T 42596.1-2023 and the following Applicable to this document.

Support valve restraint valve A device that prevents the slider from falling due to its own weight.

Overall closing time the time interval from the top dead center starting position to the bottom dead center end position (mold closing).

4 Major Hazards List

Conduct a risk assessment for the machines defined in the scope and identify all significant hazards, hazardous situations and events.

measures to eliminate or reduce risks.