AS 4024.3002:2021

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Safety of machinery

Part 3002: Machine tools safety — Presses — Safety requirement for mechanical presses

AS 4024.3002:2021

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The following are represented on Committee SF-041:

Arboriculture Australia
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Australian Industry Group
Australian Institute of Health & Safety
Australian Manufacturing Technology Institute
Australian Manufacturing Workers Union
Australian Packaging and Processing Machinery Association
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Victorian WorkCover Authority (WorkSafe Victoria)
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Additional Interests

New Zealand Safety Council
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Part 3002: Machine tools safety — Presses — Safety requirement for mechanical presses

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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-041, Safety of Machinery, to supersede AS 4024.3002:2009, *Safety of machinery, Part 3002: Materials forming and shearing — Hydraulic power presses*.

The objective of this document is to specify technical safety requirements and measures to be adopted by persons undertaking the design, manufacture and supply of the following groups of mechanical presses and mechanical press production systems:

(a) Group 1: Presses with a part revolution clutch(es).

(b) Group 2: Presses with a servo drive system (Mechanical servo presses).

NOTE 1 Requirements in this document are essentially applicable to both groups of the mechanical presses. If a requirement applies to only one group, then the group is specified.

NOTE 2 Other types of motorized drive systems provide similar functionalities to what is commonly called "servo drives" or "servo motors", and as such their use is considered the same within the terms used in this document (e.g. variable frequency drive systems).

The presses covered by this document range in size from small high-speed machines with a single operator producing small workpieces to large relatively slow-speed machines with several operators and large complex workpieces.

This document deals with all significant hazards relevant to mechanical presses and ancillary devices (e.g. moving die cushions, work-piece ejectors, feeding and transfer systems) which are integral to the machine, when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). All phases of the machine life cycle as described in ISO 12100:2010, Clause 5.4 have been taken into consideration.

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

In addition to machines not covered by AS/NZS 4024.3001, this document does not cover machines which —

(i) transmit energy to impart press slide motion by using hydraulic or pneumatic means;

(ii) have two or more slides moving in different angular orientations from each other; or

NOTE 4 This document applies to presses which have two or more slides moving in the same angular orientations, e.g. a press which has inner and outer slides.

(iii) transmit energy to impart press slide motion by using a linear motor mechanism(s).

This document is an adoption with national modifications, and has been reproduced from, ISO 16092-2:2019, *Machine tools safety — Presses — Part 2: Safety requirement for mechanical presses*. The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

Appendix ZZ lists the variations to ISO 16092-2:2019 for the application of this Standard in Australia and New Zealand.

As this document has been reproduced from an International Standard, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

Contents

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 39, *Machine tools*, Subcommittee SC 10, *Safety*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

A list of all parts in the ISO 16092 series can be found on the ISO website.

Introduction

This document is a type-C standard as stated in ISO 12100.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

— machine manufacturers (small, medium and large enterprises);

— health and safety bodies (regulators, accident prevention organisations, market surveillance etc.)

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

— machine users/employers (small, medium and large enterprises);

— machine users/employees (e.g. trade unions, organizations for people with special needs);

— service providers, e. g. for maintenance (small, medium and large enterprises);

— consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

NOTES

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Safety of machinery

Part 3002: Machine tools safety — Presses — Safety requirement for mechanical presses

1 Scope

This document, in addition to ISO 16092-1, specifies technical safety requirements and measures to be adopted by persons undertaking the design, manufacture and supply of the following groups of mechanical presses and mechanical press production systems:

— Group 1: Presses with a part revolution clutch(es);

— Group 2: Presses with a servo drive system (Mechanical servo presses).

NOTE 1 Requirements in this document are essentially applicable to both groups of the mechanical press. If a requirement applies to only one group, then the group is specified.

NOTE 2 Other types of motorized drive systems provide similar functionalities to what is commonly called “servo drives” or "servo motors”, and as such their use is considered the same within the terms used in this document (e.g. variable frequency drive systems).

The presses covered by this document range in size from small high-speed machines with a single operator producing small workpieces to large relatively slow-speed machines with several operators and large complex workpieces.

This document deals with all significant hazards relevant to mechanical presses and ancillary devices (e.g. moving die cushions, work-piece ejectors, feeding and transfer systems) which are integral to the machine, when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). All phases of the machine life cycle as described in ISO 12100:2010, 5.4 have been taken into consideration.

NOTE 2 All significant hazards means those identified or associated with presses at the time of the publication of this document.

In addition to machines not covered by ISO 16092-1:2017, this document does not cover machines which:

a) transmit energy to impart press slide motion by using hydraulic or pneumatic means;

b) have two or more slides moving in different angular orientations from each other;

NOTE 3 This document applies to presses which have two or more slides moving in the same angular orientations, e.g. a press which has inner and outer slides.

c) transmit energy to impart press slide motion by using a linear motor mechanism(s).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 13849-1:2015, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

ISO 13849-2:2012, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation*