

STN	Bezpečnosť obrábacích a tvárniacich strojov Lisy Časť 2: Bezpečnostné požiadavky na mechanické lisy (ISO 16092-2: 2019)	STN EN ISO 16092-2 21 0701
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Machine tools safety - Presses - Part 2: Safety requirement for mechanical presses (ISO 16092-2:2019)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Machine tools safety - Presses - Part 2: Safety requirement for mechanical presses (ISO 16092-2:2019)

Sécurité des machines-outils - Presses - Partie 2 :
Exigences de sécurité pour les presses mécaniques
(ISO 16092-2:2019)

Werkzeugmaschinen - Sicherheit von Pressen - Teil 2:
Mechanische Pressen (ISO 16092-2:2019)

This European Standard was approved by CEN on 29 July 2020.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO 16092-2:2020 (E)

Contents	Page
European foreword.....	3
Annex ZA (informative) Relationship between this European Standard and the essential requirements of EU Directive 2006/42/EC aimed to be covered.....	4

European foreword

This document (EN ISO 16092-2:2020) has been prepared by Technical Committee ISO/TC 39 "Machine tools" in collaboration with Technical Committee CEN/TC 143 "Machine tools - Safety" the secretariat of which is held by SNV.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2021, and conflicting national standards shall be withdrawn at the latest by March 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 692:2005+A1:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 16092-2:2019 has been approved by CEN as EN ISO 16092-2:2020 without any modification.

Annex ZA (informative)

Relationship between this European Standard and the essential requirements of EU Directive 2006/42/EC aimed to be covered

This European Standard has been prepared under a Commission's standardization request "M/396 Mandate to CEN and CENELEC for Standardisation in the field of machinery " to provide one voluntary means of conforming to essential requirements of Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast).

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Annex I of Directive 2006/42/EC

The relevant Essential Requirements of Directive 2006/42/EC	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
1.1.2 Principles of safety integration	5.1	
1.1.8 Seating		not covered
1.2. Control systems	5.2/5.3/5.4/5.5	
1.3.2 Risk of break-up during operation	5.2.5/5.2.10.1	
1.3.3 Risk due to falling or ejected objects	5.2.5/5.2.7/5.2.10.1/5.2.10.3/5.3.6	
1.3.7 Risks related to moving parts	5.5.1/5.5.2.1/5.5.3.1	
1.3.8 Choice of protection against risks arising from moving parts	5.5.1/5.5.2.1/5.5.3.1	
1.3.9 Risks of uncontrolled movements	5.2.6.1/5.2.10.2/5.4.1/5.4.2.1/5.4.6/5.4.7/5.5.1/5.5.3.1	

The relevant Essential Requirements of Directive 2006/42/EC	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
1.4 required characteristics of guards and protective devices	5.3.2/5.4.1/5.4.7/5.5.2.1 c)/5.5.3.1 b)	
1.5.1 Electricity supply	5.8.1	
1.5.4 Errors of fitting		not covered
1.6.1 Machinery maintenance	5.5.2.1/5.5.3.1/5.5.3.5	
1.7.1	5.2.6.2/7.5	
1.7.3	7.2	
1.7.4	7.4	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

**INTERNATIONAL
STANDARD**

**ISO
16092-2**

First edition
2019-10

**Machine tools safety — Presses —
Part 2:
Safety requirement for mechanical
presses**

Sécurité des machines-outils - Presses —

Partie 2: Exigences de sécurité pour les presses mécaniques



Reference number
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Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 List of significant hazards	3
5 Safety requirements and/or measures	3
5.1 General.....	3
5.2 Basic design considerations.....	3
5.2.1 Hydraulic and pneumatic systems — Common features.....	3
5.2.2 Pneumatic systems.....	3
5.2.3 Hydraulic systems.....	4
5.2.4 Electric systems.....	4
5.2.5 Mechanical brake.....	4
5.2.6 Slide adjustment.....	5
5.2.7 Slide counterbalance systems.....	5
5.2.8 Operating valves and exhaust systems.....	5
5.2.9 Additional requirements for Group 1 presses.....	6
5.2.10 Additional requirements for Group 2 presses.....	6
5.3 Mechanical hazards in the tools area.....	6
5.3.1 Major danger zone.....	6
5.3.2 Safeguarding measures.....	6
5.3.3 Other safety requirements.....	7
5.3.4 Release of trapped persons in the tools area.....	7
5.3.5 Release of persons trapped inside enclosed areas.....	7
5.3.6 Prevention of gravity fall during maintenance or repair.....	7
5.4 Control and monitoring system.....	8
5.4.1 Control and monitoring functions.....	8
5.4.2 Muting.....	10
5.4.3 Selection devices.....	10
5.4.4 Position sensors.....	10
5.4.5 Control devices.....	11
5.4.6 Valves.....	11
5.4.7 Performance level of safety functions.....	12
5.4.8 Single stroke function/device.....	28
5.4.9 Stopping-performance (overrun) monitoring function/device.....	28
5.4.10 Additional requirements for Group 1 presses.....	28
5.4.11 Additional requirements for Group 2 presses.....	30
5.5 Tool-setting, trial strokes, maintenance and lubrication.....	30
5.5.1 INCH mode.....	30
5.5.2 Additional requirements for Group 1 presses.....	31
5.5.3 Additional requirements for Group 2 presses.....	31
5.6 Mechanical hazards — Other.....	32
5.7 Slips, trips and falls.....	32
5.8 Protection against other hazards.....	32
5.8.1 Hazards related to servo drive system.....	32
6 Verification of the safety requirements and/or measures	32
7 Information for use	37
7.1 General.....	37
7.2 Marking.....	37
7.3 Warnings.....	38
7.4 Instruction handbook.....	38

ISO 16092-2:2019(E)

7.5	Stroke indication means	38
Annex A	(informative) Significant hazards, hazardous situations and protective measures.....	39
Annex B	(normative) Calculation of minimum distances.....	40
Annex C	(informative) The setting of the rotary cam arrangement.....	44
Annex D	(informative) Determination of the stopping time t_2 for Group 1 presses.....	54
Bibliography	59

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.

ISO 16092-2:2019(E)

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.

Machine tools safety — Presses —

Part 2: 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 16092-2:2019(E)

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

ISO 13855:2010, *Safety of machinery — Positioning of safeguards with respect to the approach speeds of parts of the human body*

ISO 16092-1:2017, *Machine tools safety — Presses — Part 1: General safety requirements*

ISO 16092-3:2017, *Machine tools safety — Presses — Part 3: Safety requirements for hydraulic presses*

IEC 60204-1:2016, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 61800-5-1:2007+A1:2016, *Adjustable speed electrical power drive systems — Part 5-1: Safety requirements — Electrical, thermal and energy*

IEC 61800-5-2:2016, *Adjustable speed electrical power drive systems — Part 5-2: Safety requirements — Functional*

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