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BSI Standards Publication

Machine tools — Safety — Press brakes



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National foreword

This British Standard is the UK implementation of EN ISO 6909:2026. It is identical to ISO 6909:2026. It supersedes BS EN 12622:2009+A1:2013, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MTE/1/1, Machine tools - Safety.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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This publication has been prepared under a mandate given to the European Standards Organizations by the European Commission and the European Free Trade Association. It is intended to support requirements of the EU legislation detailed in the European Foreword. A European Annex, usually Annex ZA or ZZ, describes how this publication relates to that EU legislation.

For the Great Britain market (England, Scotland and Wales), if UK Government has designated this publication for conformity with UKCA marking (or similar) legislation, it may contain an additional National Annex. Where such a National Annex exists, it shows the correlation between this publication and the relevant UK legislation. If there is no National Annex of this kind, the relevant Annex ZA or ZZ in the body of the European text will indicate the relationship to UK regulation applicable in Great Britain. References to EU legislation may need to be read in accordance with the UK designation and the applicable UK law. Further information on designated standards can be found at www.bsigroup.com/standardsandregulation.

For the Northern Ireland market, UK law will continue to implement relevant EU law subject to periodic confirmation. Therefore Annex ZA/ZZ in the European text, and references to EU legislation, are still valid for this market.

UK Government is responsible for legislation. For information on legislation and policies relating to that legislation, consult the relevant pages of www.gov.uk.

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ICS 13.110; 25.080.01; 25.120.10

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2026.

Amendments/corrigenda issued since publication

Date	Text affected

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EUROPEAN STANDARD **EN ISO 6909**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2026

ICS 13.110; 25.080.01

Supersedes EN 12622:2009+A1:2013

English Version

Machine tools - Safety - Press brakes (ISO 6909:2026)

Machines-outils - Sécurité - Presses plieuses (ISO 6909:2026)

Werkzeugmaschinen-Sicherheit - Gesenkbiegepressen (ISO 6909:2026)

This European Standard was approved by CEN on 15 February 2026.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Ref. No. EN ISO 6909:2026 E

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European foreword

This document (EN ISO 6909:2026) 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 December 2026, and conflicting national standards shall be withdrawn at the latest by December 2026.

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 12622:2009+A1:2013.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA or ZB, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 6909:2026 has been approved by CEN as EN ISO 6909:2026 without any modification.

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(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)/subclause(s) of this EN	Remarks/Notes
1.1.1 - Definitions		
1.1.2 - Principles of safety integration	5.2.1.1 5.4.1 7.2.2 e), o)	Partially covered (only 1.1.2 a) and c) are applicable)
1.1.3 - Materials and products	5.6.6	
1.1.4 - Lighting	5.6.3	
1.1.5 - Design of machinery to facilitate its handling	5.6.3	
1.1.6 - Ergonomics	5.6.3	
1.1.7 - Operating positions		Not applicable
1.1.8 - Seating		Not applicable
1.2.1 - Safety and reliability of control systems	5.1/5.2.1.4.1/5.3.1/5.3.4/5.3.5.1/5.3.5.2 / 5.3.5.4/5.3.5.11/5.3.5.12/5.3.5.13/ 5.3.5.14/5.3.5.15/5.3.5.16/5.3.5.19/ 5.3.5.20/5.3.5.21/5.3.5.22/5.3.5.23/5.3.5/ 5.3.6.5/5.3.7	
1.2.2 - Control devices	5.3.2/5.3.6.3/5.4.2/5.4.3/5.6.3	
1.2.3 - Starting	5.3.5.2/5.3.5.23/5.3.6/5.3.6.1/5.3.6.2/ 5.3.6.3/5.4.2/5.4.3	

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The relevant Essential Requirements of Directive 2006/42/EC	Clause(s)/subclause(s) of this EN	Remarks/Notes
1.2.4.1 - Normal stop	5.3.5.3/5.3.5.5/5.3.5.6/5.3.5.7/ 5.3.5.8/5.3.5.9/5.3.5.10/5.3.5.11/ 5.3.5.12/5.3.5.17/5.3.6/5.3.6.4/5.3.6.5	
1.2.4.2 - Operational stop	5.3.5.6/5.3.5.7/5.3.5.8/5.3.5.11/ 5.3.5.12/5.3.6	
1.2.4.3 - Emergency stop	5.3.5.3/5.3.5.10/5.3.5.11/5.3.5.12	
1.2.4.4 - Assembly of machinery		Not applicable
1.2.5 - Selection of control or operating modes	5.1/5.3.5.18/5.3.5.22/5.4	
1.2.6 - Failure of the power supply	5.3.3	
1.3.1 - Risk of loss of stability	5.5.1/5.5.2/5.5.3/5.5.4	
1.3.2 - Risk of break-up during operation	5.6.4/5.6.8	
1.3.3 - Risks due to falling or ejected objects	5.2.2.1.2/5.5.4	
1.3.4 - Risks due to surfaces, edges or angles		Not covered
1.3.5 - Risks related to combined machinery		Not applicable
1.3.6 - Risks related to variations in operating conditions	5.3.5.18	
1.3.7 - Risks related to moving parts	5.1/5.2.1.1/5.2.2.1.2/5.3.5.17.2/ 5.3.5.18/5.3.5.19/5.3.5.20/5.3.5.21	
1.3.8 – Choice of protection against risks arising from moving parts	5.1/5.2.1.1/5.2.1.2/5.2.1.3/5.2.2.1.1/ 5.2.2.2/5.2.2.3/5.3.5.18/5.2.1.1/5.2.1.2/ 5.2.1.3/5.2.1.4.1/ 5.2.2.1.1/5.2.2.1.2/5.2.2.2/5.2.2.3/ 5.3.5.18/5.3.5.20/5.3.5.21/Annex B	
1.3.8.1 - Moving transmission parts	5.1/5.2.1.1/5.2.1.2/5.2.1.3/5.2.2.1.1/ 5.2.2.2/5.2.2.3/5.3.5.18	
1.3.8.2 - Moving parts involved in the process	5.1/5.2.1.1/5.2.1.2/5.2.1.3/5.2.1.4.1/ 5.2.2.1.1/5.2.2.1.2/5.2.2.2/5.2.2.3/ 5.3.5.18/5.3.5.20/5.3.5.21	
1.3.9 - Risks of uncontrolled movements	5.3.5.4/5.3.5.5/5.3.5.6/5.3.5.7/ 5.3.5.8/5.3.5.9/5.3.5.10/5.3.5.15/ 5.3.5.16/5.3.5.18	
1.4.1 - General requirements	5.2.1.2/5.2.1.3/5.2.1.4.1/5.2.1.4.2/	

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The relevant Essential Requirements of Directive 2006/42/EC	Clause(s)/subclause(s) of this EN	Remarks/Notes
	5.2.1.5/5.2.1.6/5.2.1.7/5.2.1.8/5.2.2.2/ 5.2.2.3/5.3.5.18/5.3.5.20/5.3.5.21/ 5.3.6.5/Annex B/Annex C/Annex H	
1.4.2.1 - Fixed guards	5.2.1.2/5.2.2.2/5.2.2.3	
1.4.2.2 - Interlocking movable guards	5.2.1.3/5.2.2.2/5.2.2.3	
1.4.2.3 - Adjustable guards restricting access		Not applicable
1.4.3 - Special requirements for protective devices	5.2.1.4.1/5.2.1.4.3/5.2.1.5/5.2.1.6/	
1.5.1 - Electricity supply	5.2.1.7/5.2.1.8/5.2.2.2/5.2.2.3/5.3.5.20	
1.5.2 - Static electricity	5.3.5.21/5.3.6.5/Annex B/Annex C/Anne x H	
1.5.3 - Energy supply other than electricity	5.6.2	
1.5.4 - Errors of fitting	5.3.4/5.6.2	
1.5.5 - Extreme temperatures	5.6.4	
1.5.6 - Fire	5.6.11	
1.5.7 - Explosion		Not applicable
1.5.8 - Noise	5.1/5.6.1	
1.5.9 - Vibrations		Not applicable
1.5.10 - Radiation	5.2.1.4	
1.5.11 - External radiation	5.3.4	
1.5.12 - Laser radiation	5.2.1.5/5.2.1.7/5.6.7	
1.5.13 - Emissions of hazardous materials and substances	5.6.6/5.6.10.2	
1.5.14 - Risk of being trapped in a machine	5.2.2.3/5.5.7/5.5.8	
1.5.15 - Risk of slipping, tripping or falling	5.5.5/5.5.6/5.6.10.2	
1.5.16 - Lightning		Not applicable
1.6.1 - Machinery maintenance	5.4.1/5.4.2/5.6.10	
1.6.2 - Access to operating positions and servicing points	5.5.6/5.6.10.2	
1.6.3 - Isolation of energy sources	5.6.9	
1.6.4 - Operator intervention	5.6.10	
1.6.5 - Cleaning of internal parts		Not applicable

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The relevant Essential Requirements of Directive 2006/42/EC	Clause(s)/subclause(s) of this EN	Remarks/Notes
1.7.1 - Information and warnings on the machinery	7.1.2/Annex G	
1.7.1.1 - Information and information devices	7.1.2	
1.7.1.2 - Warning devices		Not applicable
1.7.2 - Warning of residual risks	7.1.2.2 d)/Annex G	
1.7.3 - Marking of machinery	7.1	
1.7.4 - Instructions	7.2/5.6.1/7.2.2/Annex E	
1.7.4.1 - General principles for the drafting of instructions	7.2	
1.7.4.2 - Contents of the instructions	5.6.1/7.2.2/Annex E	
1.7.4.3 - Sales literature	Annex E	

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Table ZA.2 — Normative references from Clause 2 of this document and their corresponding European publications

Column 1 Reference in Clause 2.	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
IEC 60204-1:2016+AMD1:2021	IEC 60204-1:2016+AMD1:2021	*Safety of machinery — Electrical equipment of machines — Part 1: General requirements*	EN 60204-1:2016/A1:2025
IEC 60529:1989	IEC 60529:1989	*Degrees of protection provided by enclosures (IP Code)*	EN 60529:1991
IEC 60825-1:2014	IEC 60825-1:2014	*Safety of laser products — Part 1: Equipment classification and requirements*	EN 60825-1:2014
IEC 60947-5-1:2025	IEC 60947-5-1:2025	*Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices*	EN IEC 60947-5-1:2025
IEC 61310-2:2007	IEC 61310-2:2007	*Safety of machinery — Indication, marking and actuation — Part 2: Requirements for marking*	EN 61310-2:2008
IEC 61310-3:2007	IEC 61310-3:2007	*Safety of machinery — Indication, marking and actuation — Part 3: Requirements for the location and operation of actuators*	EN 61310-3:2008
IEC 61496-1:2020	IEC 61496-1:2020	*Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and test*	EN IEC 61496-1:2020
IEC 61496-2:2020	IEC 61496-2:2020	*Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs)*	EN IEC 61496-2:2020
IEC 61496-3:2018	IEC 61496-3:2018	*Safety of machinery — Electro-sensitive protective equipment — Part 3: Particular requirements for Active Opto-electronic Protective Devices responsive to Diffuse Reflection (AOPDDR)*	EN IEC 61496-3:2019
IEC 61508-1:2010	IEC 61508-1:2010	*Functional safety of electrical/electronic/programmable electronic safety-related systems — Part 1: General*	EN 61508-1:2010

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Column 1 Reference in Clause 2.	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
		requirements	
IEC 61508-2:2010	IEC 61508-2:2010	*Functional safety of electrical/electronic/programmable electronic safety-related systems — Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems*	EN 61508-2:2010
IEC 61508-3:2010	IEC 61508-3:2010	*Functional safety of electrical/electronic/programmable electronic safety-related systems — Part 3: Software requirements*	EN 61508-3:2010
IEC 61800-5-2:2016	IEC 61800-5-2:2016	*Adjustable speed electrical power drive systems — Part 5-2: Safety requirements — Functional*	EN 61800-5-2:2017
IEC 62061:2021	IEC 62061:2021	*Safety of machinery — Functional safety of safety-related control systems*	EN IEC 62061:2021
ISO 3744:2010	ISO 3744:2010	*Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane*	EN ISO 3744:2010
ISO 3746:2010	ISO 3746:2010	*Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane*	EN ISO 3746:2010
ISO 4413:2010	ISO 4413:2010	*Hydraulic fluid power — General rules and safety requirements for systems and their components*	EN ISO 4413:2010
ISO 4414:2010	ISO 4414:2010	*Pneumatic fluid power — General rules and safety requirements for systems and their components*	EN ISO 4414:2010
ISO 4871:1996	ISO 4871:1996	*Acoustics — Declaration and verification of noise emission values of machinery and*	EN ISO 4871:2009

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Column 1 Reference in Clause 2.	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
		equipment	
ISO 7010:2019	ISO 7010:2019	*Graphical symbols - Safety colours and safety signs - Registered safety signs*	EN ISO 7010:2020
ISO 11202:2010	ISO 11202:2010	*Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections*	EN ISO 11202:2010
ISO 12100:2010	ISO 12100:2010	*Safety of machinery — General principles for design — Risk assessment and risk reduction*	EN ISO 12100:2010
ISO 13732-1:2006	ISO 13732-1:2006	*Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces - Part 1: Hot surfaces*	EN ISO 13732-1:2008
ISO 13849-1:2023	ISO 13849-1:2023	*Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*	EN ISO 13849-1:2023
ISO 13849-2:2012	ISO 13849-2:2012	*Safety of machinery — Safety-related parts of control systems — Part 2: Validation*	EN ISO 13849-2:2012
ISO 13850:2015	ISO 13850:2015	*Safety of machinery — Emergency stop function — Principles for design*	EN ISO 13850:2015
ISO 13851:2019	ISO 13851:2019	*Safety of machinery — Two-hand control devices — Principles for design and selection*	EN ISO 13851:2019
ISO 13855:2024	ISO 13855:2024	*Safety of machinery — Positioning of safeguards with respect to the approach of the human body*	EN ISO 13855:2024
ISO 13857:2019	ISO 13857:2019	*Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*	EN ISO 13857:2019
ISO 14118:2017	ISO 14118:2017	*Safety of machinery — Prevention of unexpected start-up*	EN ISO 14118:2018

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Column 1 Reference in Clause 2.	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
ISO 14119:2024	ISO 14119:2024	*Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*	EN ISO 14119:2025
ISO 14120:2015	ISO 14120:2015	*Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*	EN ISO 14120:2015
ISO 14122-1:2016	ISO 14122-1:2016	*Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means and general requirements of access*	EN ISO 14122-1:2016
ISO 14122-2:2016	ISO 14122-2:2016	*Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways*	EN ISO 14122-2:2016
ISO 14122-3:2016	ISO 14122-3:2016	*Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails*	EN ISO 14122-3:2016
ISO 14738:2002	ISO 14738:2002	*Safety of machinery — Anthropometric requirements for the design of workstations at machinery*	EN ISO 14738:2008

The documents listed in the Column 1 of Table ZA.2, in whole or in part, are normatively referenced in this document, i.e. are indispensable for its application. The achievement of the presumption of conformity is subject to the application of the edition of Standards as listed in Column 4 or, if no European Standard Edition exists, the International Standard Edition given in Column 2 of Table ZA.2.

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.

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Relationship between this European Standard and the essential requirements of Regulation (EU) 2023/1230 aimed to be covered

This European Standard has been prepared under a Commission's standardization request C(2025)129 final Commission Implementing Decision of 20 January 2025 to the European Committee for Standardization and to the European Committee for Electrotechnical Standardization as regards machinery in support of Regulation (EU) 2023/1230 of the European Parliament and of the Council (M/605) to provide one voluntary means of conforming to essential requirements of Regulation (EU) 2023/1230 of the European Parliament and of the Council of 14 June 2023 on machinery (OJ L 165, 29.6.2023).

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

Table ZB.1— Correspondence between this European Standard and Annex III of Regulation (EU) 2023/1230

The relevant Essential Requirements of Regulation (EU) 2023/1230	Clause(s)/subclause(s) of this EN	Remarks/Notes
Annex III - Part A Definitions		
1.1.2 - Principles of safety integration	5.1 5.2.1.1 5.4.1 7.2.2 e) o)	Partially covered (only 1.1.2 a) and c) are applicable)
1.1.3 - Materials and products	5.6.6	
1.1.4 - Lighting	5.6.3	
1.1.5 - Design of machinery or a related product to facilitate its handling	5.6.3	
1.1.6 - Ergonomics	5.6.3	1.1.6 g): not applicable
1.1.7 – Operating positions		Not applicable
1.1.8 – Seating		Not applicable
1.1.9 Protection against corruption		Not covered
1.2.1 - Safety and reliability of control systems	5.2.1.4.1/5.3.1/5.3.4/5.3.5/5.3.5.19/5.3.5.2/	I) f) not covered II) and III) not applicable
1.2.2 - Control devices	5.3.5.4/5.3.5.11/5.3.5.12/5.3.5.13/	
1.2.3 - Starting	5.3.5.14/5.3.5.15/5.3.5.16/5.3.5.1	

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The relevant Essential Requirements of Regulation (EU) 2023/1230	Clause(s)/subclause(s) of this EN	Remarks/Notes
	/5.3.5.20/5.3.5.21/5.3.5.22/5.3.5.23/5.3.6.5/5.3.7	
1.2.4.1 - Normal stop	5.3.2/5.3.6.3/5.4.2/5.4.3/5.6.3	
1.2.4.2 - Operational stop	5.3.5.2/5.3.5.23/5.3.6.1/5.3.6.2/	
1.2.4.3 - Emergency stop	5.3.6.3/5.4.2/5.4.3/5.3.6	
1.2.4.4 - Assembly of machinery or related products		Not applicable
1.2.5 - Selection of control or operating modes	5.3.5.18/5.3.5.22/5.4	
1.2.6 - Failure of the power supply or communication network connection	5.3.3	
1.3.1 - Risk of loss of stability	5.5.1/5.5.2/5.5.3/5.5.4	
1.3.2 - Risk of break-up during operation	5.6.4/5.6.8	
1.3.3 - Risks due to falling or ejected objects	5.2.2.1.2/5.5.4	
1.3.4 - Risks due to surfaces, edges or angles		Not covered
1.3.5 – Risks related to a combined machinery or related product		Not applicable
1.3.6 - Risks related to variations in operating conditions	5.3.5.18	
1.3.7 - Risks related to moving parts	5.2.1.1/5.2.2.1.2/5.3.5.17.2/	a) and b) not applicable
1.3.8 - 1.3.8 – Choice of protection against risks arising from moving parts	5.2.1.1/5.2.1.2/5.2.1.3/5.2.2.1.1/	
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The relevant Essential Requirements of Regulation (EU) 2023/1230	Clause(s)/subclause(s) of this EN	Remarks/Notes
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The relevant Essential Requirements of Regulation (EU) 2023/1230	Clause(s)/subclause(s) of this EN	Remarks/Notes
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WARNING 2 Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

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This document is a type C standard as stated in ISO 12100:2010.

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 organizations, 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, for example, for maintenance (small, medium and large enterprises);

— consumers (in the 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.

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Machine tools — Safety — Press brakes

1 Scope

This document specifies technical safety requirements and measures to be adopted by persons undertaking the design, manufacture and supply of press brakes which are intended to work cold metal or material partly of cold metal but which can be used in the same way to work other sheet materials (e.g. cardboard, plastic, rubber, leather) and also referred to as machines.

NOTE 1 The design of a machine includes the study of the machine itself, taking into account all phases of the "life" of the machine mentioned in ISO 12100:2010, 5.4, and the drafting of the instructions related to all the above phases.

This document covers the following types of machines (see Annex J):

— hydraulic press brakes;

— hydraulic servo-drive press brakes;

— screw servo-drive press brakes;

— belt-spring servo-drive press brakes.

The requirements in this document take account of intended use, as defined in ISO 12100:2010, 3.23, as well as reasonably foreseeable misuse, as defined in ISO 12100:2010, 3.24. This document presumes access to the press brake from all directions, deals with all significant hazards during the various phases of the life of the machine described in Clause 4, and specifies the safety measures for both the operator and other exposed persons.

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

This document can also be used as a guide for the design of press brakes which are intended to be integrated in a manufacturing system.

This document deals with all significant hazards, hazardous situations or hazardous events relevant to press brakes and ancillary devices (see Clause 4) when it is used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer. This document specifies the safety requirements for press brakes defined in Clause 3.

This document does not cover press brakes which transmit energy to impart beam motion by using pneumatic means or mechanical clutch or press brakes that use combination of technologies (e.g. combined hydraulic and screw servo-drive press brake or combined hydraulic servo-drive and screw servo-drive press brake).

This document does not cover machines whose principal designed purpose is:

a) sheet folding by rotary action;

b) tube and pipe bending by rotary action;

c) roll bending.

This document does not cover hazards related to the use of press brakes in explosive atmospheres.

This document is not applicable to press brakes which are manufactured before the date of its publication.

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