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I.S. EN 692:2005+A1:2009

Machine tools - Mechanical presses - Safety

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English Version

Machine tools - Mechanical presses - Safety

Machines-outils - Presses mécaniques - Sécurité

Werkzeugmaschinen - Mechanische Pressen - Sicherheit

This European Standard was approved by CEN on 22 July 2004 and includes Amendment 1 approved by CEN on 29 December 2008.

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Contents

Foreword

This document (EN 692:2005+A1:2009) has been prepared by 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of an identical text or by endorsement, at the latest by August 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2008-12-29.

This document supersedes [A1] 692:2005 [/A1].

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [/A1].

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).

[A1] For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. [/A1]

[A1] Annexes A, B and G to this standard are normative, whereas Annexes C, D, E, F, ZA and ZB are informative. [/A1]

Organisation contributing to the preparation of this European Standard include the European Manufacturer Association CECIMO.

NOTE The safety requirements related to the use of PES or PPS will be dealt with at its next revision.

The European Standards produced by CEN/TC 143 are particular to machine-tools and complement the relevant A and B standards on the subject of general safety (see introduction of EN 292-1:1991 for a description of A, B and C standards).

[A1] *deleted text* [/A1]

[A1] EN 692:2005 [/A1] constitutes a revision of EN 692:1996 for which it has been technically revised : the main modifications are listed below :

— Withdrawal of mechanical presses with full revolution clutches,

— Tacking into account of some additive requirements about the use of closed tools and fixed' enclosing guard(s) as protective devices (sub clauses 5.3.4, 5.3.9, 5.3.10 and 5.4.5.3),

— Addition of requirements on the implementation of protective devices for powering on the machine,

— Redrafting in order to ensure the coherence with the requirements of EN 693.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This standard has been prepared to be a harmonised standard to provide one means of conforming with the essential safety requirements of the Machinery Directive and associated EFTA Regulations.

This document is a C-type standard as stated in EN ISO 12100-1.

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

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

Complementary guidance is given in the A and B standards to which reference is made in the text (see clause 2). The figures are intended to be examples only and not to give the only interpretation of the text.

The requirements of this European Standard concern designers, manufacturers, suppliers and importers of machines described in the scope.

This standard also includes information to be provided by the manufacturer to the user.

1 Scope

1.1 This European Standard specifies technical safety requirements and measures to be adopted by persons undertaking the design, manufacture and supply of mechanical presses with part revolution clutch hereinafter called presses which are intended to work cold metal or material partly of cold metal.

NOTE The design of a machine includes the study of the machine itself, taking into account all phases of its “life”, i.e. construction, transport and commission (including assembly, installation and adjustment), use (including setting, teaching/programming or process changeover, operation, cleaning, fault finding and maintenance) and de-commissioning, dismantling and, as far as safety is concerned, disposal, and the drafting of the instructions related to all above-mentioned phases of the “life” of the machine (except construction), dealt with it in 6.5 of EN ISO 12100-2:2003.

1.2 This European Standard also covers presses, whose primary intended use is to work cold metal, which are to be used in the same way to work other sheet materials (such as cardboard, plastic, rubber or leather), and metal powder.

1.3 The requirements in this standard take account of intended use, as defined in 3.22 of EN ISO 12100-1:2003. This standard presumes access to the press from all directions, deals with the 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.

1.4 This European Standard also applies to ancillary devices which are an integral part of the press. This standard also applies to machines which are integrated into an automatic production line where the hazards and risk arising are comparable to those of machines working separately.

1.5 This European Standard does not cover mechanical presses with full revolution clutch.

1.6 This European Standard does not cover machines whose principal designed purpose is:

a) sheet metal cutting by guillotine;

b) attaching a fastener, e.g. riveting, stapling or stitching;

c) bending or folding;

d) straightening;

e) turret punch pressing;

f) extruding;

g) drop forging or drop stamping;

h) compaction of metal powder;

i) single purpose punching machines designed exclusively for profiles, e.g. for the construction industry.

1.7 This European Standard is not applicable to machines which are manufactured before the date of publication of this document by CEN.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 294:1992, *Safety of machinery - Safety distances to prevent danger zones being reached by the upper limbs.*

EN 349:1993, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body.*

EN 418:1992, *Safety of machinery - Emergency stop equipment, functional aspects - Principles for design.*

EN 563:1994, *Safety of machinery - Temperatures of touchable surfaces - Ergonomics data to establish temperature limit values for hot surfaces.*

EN 574:1996, *Safety of machinery - Two-hand control devices - Functional aspects - Principles for design.*

EN 626-1:1994, *Safety of machinery - Reduction of risks to health from hazardous substances emitted by machinery - Part 1: Principles and specifications for machinery manufacturers.*

EN 842:1996, *Safety of machinery - Visual danger signals - General requirements, design and testing.*

EN 953:1997, *Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards.*

EN 954-1:1996, *Safety of machinery - Safety related parts of control systems - Part 1: General principles for design.*

EN 982:1996, *Safety of machinery - Safety requirements for fluid power systems and their components - Hydraulics.*

EN 983:1996, *Safety of machinery - Safety requirements for fluid power systems and their components - Pneumatics.*

EN 999:1998, *Safety of machinery - The positioning of protective equipment in respect of approach speeds of parts of the human body.*

EN 1005-2:2003, *Safety of machinery - Human physical performance - Part 2: Manual handling of machinery and component parts of machinery.*

EN 1037:1995, *Safety of machinery - Prevention of unexpected start-up.*

EN 1050:1996, *Safety of machinery - Principles for risk assessment.*

EN 1088:1995, *Safety of machinery - Interlocking devices associated with guards -Principles for design and selection.*

EN 1127-1:1997, *Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology.*

EN 1299:1997, *Mechanical vibration and shock - Vibration isolation of machines - Information for the application or source isolation.*

EN 60204-1:1997, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:1997).*

EN 61310-2:1995, *Safety of machinery - Indication, marking and actuation - Part 2: Requirements for marking (IEC 1310-2:1995).*

EN 61496-1:2004, *Safety of machinery - Electro-sensitive protective equipment - Part 1: General requirements and tests (IEC 61496-1:2004, modified).*

CLC/TS 61496-2:2003, *Safety of machinery - Electrosensitive protective equipment - Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs) (IEC 61496-2:1997).*

EN ISO 3746:1995, *Acoustics - Determination of sound power levels of noise sources using sound pressure - Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:1995).*

〚A1〉 EN ISO 4871:1996, *Acoustics - Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)* 〈A1〛

EN ISO 11202:1995, *Acoustics - Noise emitted by machinery and equipment - Measurement of emission sound pressure levels at work station and at other specified positions - Survey method in situ (ISO 11202:1995).*

EN ISO 12100-1:2003, *Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles (ISO 12100-2:2003)*

ISO 8540:1993, *Open front mechanical power presses - Vocabulary.*

3 Terms, definitions and abbreviations

For the purposes of this European Standard, the terms and definitions given in EN ISO 12100-1:2003 and EN ISO 12100-2:2003 and in relevant type A and type B standards, and the following apply.

3.1 Terms and definitions

3.1.1
band brake
brake (see 3.1.2) where a flexible band lined with friction material is arranged around the circumference of a drum

3.1.2
brake
mechanism (usually friction) intended to stop and hold the slide when the clutch, if provided, is disengaged