Træbearbejdningmaskiner – Sikkerhed – Fræsemaskiner – Del 3: Numerisk styrede (NC) bore- og overfræsemaskiner

Safety of woodworking machines – One side moulding machines with rotating tool – Part 3: Numerically controlled (NC) boring and routing machines
DS/EN 848-3
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Safety of woodworking machines - One side moulding machines with rotating tool - Part 3: Numerically controlled (NC) boring and routing machines

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Foreword

This document (EN 848-3:2012) has been prepared by Technical Committee CEN/TC 142 “Woodworking machines - Safety", the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by April 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

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


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 the Machinery Directive.

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

The main modification to the 2009 edition relates to the introduction of performance levels (PL) and curtains wear test.

Organisations contributing to the preparation of this document include the European Committee of Woodworking Machinery Manufacturers Association "EUMABOIS".

EN 848 consists of the following parts:

— EN 848-1, Safety of woodworking machines — One side moulding machines with rotating tool — Part 1: Single spindle vertical moulding machines;

— EN 848-2, Safety of woodworking machines — One side moulding machines with rotating tool — Part 2: Single spindle hand fed/integrated fed routing machines;

— EN 848-3, Safety of woodworking machines — One side moulding machines with rotating tools — Part 3: Numerically controlled (NC) boring and routing machines (the present document).

The European Standards produced by CEN/TC 142 are particular to woodworking machines and compliment the relevant A and B standards on the subject of general safety (see Introduction of EN ISO 12100:2010 for a description of A, B and C standards).

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

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

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

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

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

The requirements of this document are directed to manufacturers and their authorised representatives of numerically controlled (NC) boring machines and routing machines. It is also useful for designers.

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

1 Scope

This European Standard specifies all significant hazards, hazardous situations and events as listed in Clause 4, which are relevant to NC boring machines, NC routing machines and NC combined boring/routing machines (as defined in 3.1) herein after referred to as "machines" designed to cut solid wood, chip board, fibreboard, plywood and also these materials where these are covered with plastic/light alloy laminate or edgings when they are used as intended and under the conditions foreseen by the manufacturer including reasonably foreseeable misuse.

Machines which are designed to work wood based materials may also be used for working hardened plastic materials with similar physical characteristics as wood.

This document also applies to machines fitted with:

- additional equipment for sawing, sanding, edge banding or assembly units and dowel devices;
- fixed or movable workpiece support;
- mechanical, pneumatic, hydraulic or vacuum workpiece clamping;
- automatic tool change facilities.

This document does not deal with the specific hazards of edge banding equipment fitted to NC boring machines, NC routing machines and NC combined boring/routing machines.

This document is only applicable to NC boring machines, NC routing machines and NC combined boring/routing machines which are designed to use milling tools with a cutting circle diameter below 16 mm or milling tools or saw-blades conforming to EN 847-1:2005+A1:2007 and EN 847-2:2001 and boring tools or sanding wheels.

This document is not applicable to NC boring machines, NC routing machines and NC combined boring/routing machines which are designed to use grinding wheels.

This document is not applicable to single spindle hand fed/integrated fed routing machines.


This document does not deal with the specific hazards of ejection through openings on machines where the distance between the work-piece support and the lower edge of the partial enclosure exceeds 400 mm.

This document is not applicable to NC boring machines, NC routing machines and NC combined boring/routing machines which are manufactured before the date of its publication as EN.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.


EN 848-3:2012, Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 1: General principles for human interactions with displays and control actuators


EN 12779:2004+A1:2009, Safety of woodworking machines — Chip and dust extraction systems with fixed installation — Safety related performances and safety requirements


EN 60439-1:19991), Low-voltage switchgear and controlgear assemblies — Part 1: Type-tested and partially type-tested assemblies (IEC 60439-1:1999)

EN 60529:19912), Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)


EN 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 (ISO 3744:2010)


EN 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 (ISO 3746:2010)


EN 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 (ISO 11202:2010)

EN ISO 11204:2010, Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections (ISO 11204:2010)


3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 and the following apply.

3.1 Numerically Controlled (NC) boring and routing machines

integrated fed machines designed for the machining of workpieces by the use of milling and/or boring tools having at least two orthogonal axes programmable by the user (e.g. X, Y) for positioning and/or machining, where the axes operate in accordance with a NC work programme

Note 1 to entry The machine can have:

- additional equipment for sawing or sanding or assembly units and dowel devices;
- additional equipment for edge banding;
- fixed or movable workpiece support;
- mechanical, pneumatic, hydraulic or vacuum workpiece clamping;
- automatic tool change facilities.

Examples of different machine design are illustrated in Figures 1 to 9.

Figure 1 — Example 1 of a C frame machine (fixed table, moveable head)