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| STN | **Drevárske stroje<br>Bezpečnosť<br>Časť 3: Číslicovo riadené (NC) vŕtačky a frézovačky (ISO 19085-3: 2017)** | **STN<br>EN ISO 19085-3<br><br>49 6115** |
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Woodworking machines - Safety requirements - Part 3: Numerically controlled (NC) boring and routing machines (ISO 19085-3:2017)

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

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 05/18

Obsahuje: EN ISO 19085-3:2017, ISO 19085-3:2017

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN ISO 19085-3

December 2017

ICS 13.110; 79.120.10

English Version

# Woodworking machines - Safety requirements - Part 3: Numerically controlled (NC) boring and routing machines (ISO 19085-3:2017)

Machines à bois - Sécurité - Partie 3: Perceuses et défonceuses à commande numérique (CN) (ISO 19085-3:2017)

Holzbearbeitungsmaschinen - Sicherheit - Teil 3: NC-Bohr- und Fräsmaschinen (ISO 19085-3:2017)

This European Standard was approved by CEN on 9 October 2016.

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.

CEN members are the national standards bodies of 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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



Ref. No. EN ISO 19085-3:2017 E

**EN ISO 19085-3:2017 (E)**

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# European foreword

This document (EN ISO 19085-3:2017) has been prepared by Technical Committee ISO/TC 39 “Machine tools” in collaboration with 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 June 2018, and conflicting national standards shall be withdrawn at the latest by June 2018.

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 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 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**Endorsement notice**

The text of ISO 19085-3:2017 has been approved by CEN as EN ISO 19085-3:2017 without any modification.

# Annex ZA
(informative)

# Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC

This European standard has been prepared under a Commission's standardisation request *"M/396"* to provide one voluntary means of conforming to *essential requirements of the new approach Machinery Directive 2006/42*.

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 Directive 2006/42/EC**

| **Essential Requirements (ERs) of Directive 2006/42/EC** | **Clause(s)/sub-clause(s) of this EN** | **Remarks/Notes** |
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| a) fitted for its function | Clauses 5, 6, 7, 8 | |
| b) eliminate or reduce the risks, give measures, inform | Clauses 5, 6, 7, 8 | |
| c) intended use and reasonably foreseeable misuse | Clauses 5, 6, 7, 8 | |
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| e) equipment | 6.1, 8.3 | |
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| 1.3.3 Risks due to falling or ejected objects | 5.7.3, 6.2, 6.3, 6.5, 6.8, 6.9, 8.3 | |
| 1.3.4 Risk due to surfaces, edges or angles | | Not significant, see EN ISO 12100:2010 |

| | | |
|---|---|---|
| 1.3.6 Risks relating to variations in the operating conditions | 5.7, 5.11 | |
| 1.3.7 Risks related to moving parts | 6.5, 6.6, 6.7, 8.3 | |
| 1.3.8 Choice of protection against risks related to moving parts | 6.6, 6.7, 6.8 | |
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| 1.5.2 Static electricity | 7.11 | |
| 1.5.3 Energy supply other than electricity | 7.7, 7.8 | |
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| 1.5.6 Fire | 7.1 | |
| 1.5.8 Noise | 7.2 | |
| 1.5.11 External radiation | 7.9 | |
| 1.5.12 Laser equipment | 7.10 | |
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**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 19085-3**

First edition
2017-10

# Woodworking machines — Safety requirements —

## Part 3: Numerically controlled (NC) boring and routing machines

*Machines à bois — Sécurité —*

*Partie 3: Perceuses et défonceuses à commande numérique (CN)*

Reference number
ISO 19085-3:2017(E)

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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# 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 on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 39, *Machine tools*, Subcommittee SC 4, *Woodworking machines*.

This document is intended to be used in conjunction with ISO 19085-1:2017, which gives requirements common to different machine types.

A list of all parts in the ISO 19085 series can be found on the ISO website.

# Introduction

The ISO 19085 series of International Standards provides technical safety requirements for the design and construction of woodworking machinery. It concerns designers, manufacturers, suppliers and importers of the machines specified in the Scope. It also includes a list of informative items to be provided the user by the manufacturer.

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

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.

The full set of requirements for a particular type of woodworking machine are those given in the part of ISO 19085 applicable to that type, together with the relevant requirements from ISO 19085-1:2017, to the extent specified in the Scope of the applicable part of ISO 19085.

As far as possible, in parts of ISO 19085 other than ISO 19085-1:2017, safety requirements are referenced to the relevant sections of ISO 19085-1:2017 to avoid repetition and reduce their length. The other parts contain replacements and additions to the common requirements given in ISO 19085-1:2017.

This document is intended to be used in conjunction with ISO 19085-1:2017, which gives requirements common to the different machine types.

Thus, Clauses 5, 6, 7 and 8, with their subclauses and the annexes of this document can either

— confirm as a whole,

— confirm with additions,

— exclude in total, or

— replace with specific text,

the corresponding subclauses or annexes of ISO 19085-1:2017.

This interrelation is indicated in the first paragraph of each clause, subclause or annex, right after the title, by one of the following statements:

— “This subclause of ISO 19085-1:2017 applies”;

— “This subclause of ISO 19085-1:2017 applies with the following additions”, or “This subclause of ISO 19085-1:2017 applies with the following additions, subdivided into further specific subclauses.”;

— “This subclause of ISO 19085-1:2017 does not apply.”;

— “This subclause of ISO 19085-1:2017 is replaced by the following text.”, or “This subclause of ISO 19085-1:2017 is replaced by the following text, subdivided into further specific subclauses.”.

Specific subclauses and annexes in this document without correspondent in ISO 19085-1:2017 are indicated by the introductory sentence: "This subclause (or annex) is specific to this document."

Clauses 1, 2 and 4 replace the correspondent clauses of ISO 19085-1:2017, with no need for indication since they are specific to each part of the series.

NOTE Requirements for tools are given in EN 847-1:2013 and EN 847-2:2013.

**INTERNATIONAL STANDARD** **ISO 19085-3:2017(E)**

# Woodworking machines — Safety requirements —

# Part 3: Numerically controlled (NC) boring and routing machines

## 1 Scope

This document gives the safety requirements and measures for numerically controlled (NC) boring machines, NC routing machines and NC combined boring/routing machines (as defined in 3.1), hereinafter referred to as "machines".

This document deals with all significant hazards, hazardous situations and events, listed in Clause 4, relevant to the machines when they are operated, adjusted and maintained as intended and under the conditions foreseen by the manufacturer including reasonably foreseeable misuse. Also, transport, assembly, dismantling, disabling and scrapping phases have been taken into account.

NOTE For relevant but not significant hazards, e.g. sharp edges of the machine frame, see ISO 12100:2010.

This document is also applicable to machines fitted with one or more of the following devices/ additional working units, whose hazards have been dealt 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.

Machines covered in this document are designed for workpieces consisting of

— solid wood,

— material with similar physical characteristics to wood (see ISO 19085-1:2017, 3.2),

— gypsum boards, gypsum bounded fibreboards,

— composite materials with core consisting of polyurethane or mineral material laminated with light alloy,

— polymer-matrix composite materials and reinforced thermoplastic/thermoset/elastomeric materials, and

— composite boards made from the materials listed above.

This document does not deal with specific hazards related to

— edge-banding equipment fitted to the machines,

— use of grinding wheels,

— ejection from milling and/or sawing tools through openings guarded by curtains on machines where the distance between the workpiece support surface and the lower edge of the partial enclosure exceeds 600 mm,

— ejection due to failure of milling tools with a cutting circle diameter equal to or greater than 16 mm and sawing tools not conforming to EN 847-1:2013 and EN 847-2:2013,

 

— the combination of a single machine being used with other machines (as a part of a line),

— the necessity to step onto or into the machine body due to its large size, e.g. to adjust clamping elements on machines for wooden walls, and

— integrated workpiece loading/unloading systems (e.g. robots).

This document is not applicable to single spindle hand fed or integrated fed routing machines, machines intended for use in potentially explosive atmosphere, or to machines manufactured prior to its publication.

## 2 Normative references

The following documents are referred to in 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 2602:1980, *Statistical interpretation of test results — Estimation of the mean — Confidence interval*

ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components*

ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

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

ISO 19085-1:2017, *Woodworking machines — Safety — Part 1: Common requirements*

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

ISO 13856-3:2013, *Safety of machinery — Pressure-sensitive protective devices — Part 3: General principles for design and testing of pressure-sensitive bumpers, plates, wires and similar devices*

ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

EN 847-1:2013, *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular saw blades*

EN 847-2:2013, *Tools for woodworking — Safety requirements — Part 2: Requirements for the shank of shank mounted milling tools*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100:2010, ISO 13849-1:2015, ISO 19085-1:2017 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/



 