PUIDUTÖÖTLUSMASINAD. OHUTUS. OSA 11: KOMBINEERITUD MASINAD

Woodworking machines - Safety - Part 11: Combined machines (ISO 19085-11:2024)

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 19085-11:2024 sisaldab Euroopa standardi EN ISO 19085-11:2024 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 19085-11:2024 consists of the English text of the European standard EN ISO 19085-11:2024.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 02.10.2024.	Date of Availability of the European standard is 02.10.2024.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.110, 79.120.10

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 19085-11

October 2024

ICS 13.110; 79.120.10

Supersedes EN ISO 19085-11:2020

English Version

Woodworking machines - Safety - Part 11: Combined machines (ISO 19085-11:2024)

Machines à bois - Sécurité - Partie 11: Machines combinées (ISO 19085-11:2024)

Holzbearbeitungsmaschinen - Sicherheit - Teil 11: Kombinierte Maschinen (ISO 19085-11:2024)

This European Standard was approved by CEN on 7 July 2024.

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, 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 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 19085-11:2024 E

European foreword

This document (EN ISO 19085-11:2024) 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 April 2025, and conflicting national standards shall be withdrawn at the latest by April 2025.

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 ISO 19085-11:2020.

This document is intended to be used in conjunction with Part 1 of the series.

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, 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 19085-11:2024 has been approved by CEN as EN ISO 19085-11:2024 without any modification.

Contents

Page

Foreword ..... **v**
Introduction ..... **vi**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **2**
4 Safety requirements and measures for controls **5**
4.1 Safety and reliability of control systems 5
4.2 Control devices 5
4.3 Start 6
4.3.1 Direct start 6
4.3.2 Start via control power-on 6
4.4 Safe stops 6
4.4.1 General 6
4.4.2 Normal stop 6
4.4.3 Operational stop 6
4.4.4 Emergency stop 6
4.5 Braking function of tools 7
4.6 Mode selection 7
4.7 Tool speed changing 7
4.7.1 Speed changing by shifting the belts on the pulleys 7
4.7.2 Speed changing by incremental speed change motor 7
4.7.3 Infinitely variable speed by frequency inverter 7
4.7.4 Spindle speed limiting device for tenoning 7
4.7.5 Changing of the direction of spindle rotation 7
4.8 Failure of any power supply 7
4.9 Manual reset control 8
4.10 Standstill detection and monitoring 8
4.11 Machine moving parts speed monitoring 8
4.12 Time delay 8
4.13 Teleservice 8
4.14 Power-driven adjustments 8
5 Safety requirements and measures for protection against mechanical hazards **8**
5.1 Stability 8
5.2 Risk of break-up during operation 8
5.3 Tool and tool fixing design 9
5.3.1 General 9
5.3.2 Spindle locking 9
5.3.3 Circular saw blade fixing device 9
5.3.4 Flange dimensions for circular saw blades 9
5.3.5 Arbor rings/fixing device for milling tools 9
5.3.6 Quick tool/arbor change system 9
5.3.7 Manual adjustment of arbor height 9
5.3.8 Manual adjustment of arbor inclination 9
5.4 Braking 10
5.4.1 Braking of tools 10
5.4.2 Maximum run-down time 10
5.4.3 Brake release 10
5.5 Safeguards 10
5.5.1 Fixed guards 10
5.5.2 Interlocking movable guards 10
5.5.3 Hold-to-run control 10
5.5.4 Two hand control 10
5.5.5 Electro-sensitive protection equipment (ESPE) 10

5.5.6 Pressure sensitive protection equipment (PSPE) 11
5.5.7 Enabling control device 11
5.6 Prevention of access to hazardous moving parts 11
5.7 Impact hazard 11
5.8 Clamping devices 11
5.9 Measures against ejection 12
5.9.1 General 12
5.9.2 Guards materials and characteristics 12
5.9.3 Anti-kickback devices 12
5.10 Workpiece supports and guides 12
5.11 Safety appliances 13
5.12 Elements not in use 13
5.13 Adjustments in tenoning-sawing mode 13
6 Safety requirements and measures for protection against other hazards 13
6.1 Fire 13
6.2 Noise 13
6.2.1 Noise reduction at the design stage 13
6.2.2 Noise emission measurement and declaration 14
6.3 Emission of chips and dust 14
6.4 Electricity 14
6.5 Ergonomics and handling 14
6.6 Lighting 14
6.7 Pneumatics 14
6.8 Hydraulics 14
6.9 Electromagnetic compatibility 14
6.10 Laser 14
6.11 Static electricity 15
6.12 Errors of fitting 15
6.13 Isolation 15
6.14 Maintenance 15
6.15 Relevant but not significant hazards 15
7 Information for use 15
7.1 Warning devices 15
7.2 Markings 15
7.2.1 General 15
7.2.2 Additional markings 15
7.3 Instruction handbook 15
7.3.1 General 15
7.3.2 Additional information 16
Annex A (informative) **List of significant hazards 17**
Annex B (informative) **Performance level required 19**
Annex C (normative) **Stability test 20**
Annex D (normative) **Test for braking function 21**
Annex E (normative) **Impact test for guards 22**
Annex F (normative) **Noise test code 23**
Annex G (normative) **Table dimensions 26**
Bibliography 28

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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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 4 *Woodworking machines,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 142, *Woodworking machines - Safety,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 19085-11:2020), which has been technically revised. The main changes are as follows:

— the scope now specifies that machines are intended for continuous production use;

— the list of significant hazards has been moved to a new Annex A;

— subclause 6.2 has been updated;

— a new noise test code has been specified in Annex F.

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

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.

Introduction

The ISO 19085 series provides technical safety requirements for the design and construction of woodworking machinery, as well as for the content of the relevant instruction handbook. It concerns designers, manufacturers, suppliers and importers of the machines specified in the scope.

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 (e.g. regulators, accident prevention organisations, market surveillance).

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 in 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 (as defined in ISO 12100:2010), 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 the ISO 19085 series applicable to that type, together with the relevant requirements from ISO 19085-1:2021, to the extent specified in the Scope of the applicable part of the ISO 19085 series.

As far as possible, in this document, safety requirements are referenced to the relevant subclauses of ISO 19085-1:2021, ISO 19085-5:2024, ISO 19085-6:2024, ISO 19085-7:2024 and ISO 19085-9:2024 to avoid repetition and reduce their length.

Specific subclauses and annexes in this document without a correspondent in ISO 19085-1:2021, ISO 19085-5:2024, ISO 19085-6:2024, ISO 19085-7:2024 and ISO 19085-9:2024 are indicated by the introductory sentence: “Subclause (or annex) specific to this document.”

Clauses 1 to 3 are specific to each part and, therefore are distinct from ISO 19085-1:2021, Clauses 1 to 3.

Woodworking machines — Safety —

Part 11: Combined machines

1 Scope

This document specifies the safety requirements and measures for combined woodworking machines (defined in 3.1), capable of continuous production use, with manual loading and unloading of the workpiece and hereinafter referred to also as "machines".

The machines are designed to cut solid wood and material with similar physical characteristics to wood (see ISO 19085-1:2021, 3.2).

This document deals with all significant hazards, hazardous situations and events, listed in Annex A, relevant to the machines, when operated, adjusted and maintained as intended and under the conditions foreseen by the manufacturer; reasonably foreseeable misuse has been considered too. Transport, assembly, dismantling, disabling and scrapping phases have also been taken into account.

This document applies to machines also equipped with the devices or additional working units listed in the Scopes of ISO 19085-5:2024, ISO 19085-6:2024, ISO 19085-7:2024 and ISO 19085-9:2024.

This document does not apply to:

a) machines incorporating a planing unit and a mortising device only;

NOTE Machines incorporating a planing unit and a mortising device only are dealt with in ISO 19085-7:2024.

b) combined machines incorporating a band saw unit;

c) machines with a mortising unit with a separate drive other than the planing unit drive;

d) machines intended for use in potentially explosive atmosphere;

e) machines manufactured before the publication of this document.

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 19085-1:2021, *Woodworking machines — Safety — Part 1: Common requirements*

ISO 19085-5:2024, *Woodworking machines — Safety — Part 5: Dimension saws*

ISO 19085-6:2024, *Woodworking machines — Safety — Part 6: Single spindle vertical moulding machines (toupie)*

ISO 19085-7:2024, *Woodworking machines — Safety — Part 7: Surface planing, thickness planing, combined surface/thickness planing machines*

ISO 19085-9:2024, *Woodworking machines — Safety — Part 9: Circular saw benches (with and without sliding table)*