

**Nadomešča:
SIST EN 1870-19:2014**

Lesnoobdelovalni stroji - Varnost - 9. del: Krožne žage (s podajalno mizo ali brez nje) (ISO 19085-9:2019)

Woodworking machines - Safety - Part 9: Circular saw benches (with and without sliding table) (ISO 19085-9:2019)

Holzbearbeitungsmaschinen - Sicherheit - Teil 9: Tischkreissägemaschinen (mit und ohne Schiebetisch) (ISO 19085-9:2019)

Machines à bois - Sécurité - Partie 9: Scies à table de menuisier (avec et sans table mobile) (ISO 19085-9:2019)

<https://standards.iteh.ai/catalog/standards/sist/76399ea1-7615-4d64-a89c-278b9cfd37b1/sist-en-iso-19085-9-2020>

Ta slovenski standard je istoveten z: EN ISO 19085-9:2020

ICS:

13.110	Varnost strojev	Safety of machinery
25.080.60	Strojne žage	Sawing machines
79.120.10	Lesnoobdelovalni stroji	Woodworking machines

SIST EN ISO 19085-9:2020

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 19085-9:2020](#)

<https://standards.iteh.ai/catalog/standards/sist/76399ea1-7615-4d64-a89c-278b9cfd37b1/sist-en-iso-19085-9-2020>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 19085-9

April 2020

ICS 79.120.10; 13.110

Supersedes EN 1870-19:2013

English Version

Woodworking machines - Safety - Part 9: Circular saw
benches (with and without sliding table) (ISO 19085-
9:2019)

Machines à bois - Sécurité - Partie 9: Scies circulaires à
table de menuisier (avec et sans table mobile) (ISO
19085-9:2019)

Holzbearbeitungsmaschinen - Sicherheit - Teil 9:
Tischkreissägemaschinen (mit und ohne Schiebetisch)
(ISO 19085-9:2019)

This European Standard was approved by CEN on 21 October 2018.

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.

iTeh STANDARD PREVIEW

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, 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

Contents	Page
European foreword	3
Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered	4

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 19085-9:2020](https://standards.iteh.ai/catalog/standards/sist/76399ea1-7615-4d64-a89c-278b9cfd37b1/sist-en-iso-19085-9-2020)
<https://standards.iteh.ai/catalog/standards/sist/76399ea1-7615-4d64-a89c-278b9cfd37b1/sist-en-iso-19085-9-2020>

European foreword

This document (EN ISO 19085-9:2020) 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 October 2020, and conflicting national standards shall be withdrawn at the latest by October 2020.

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 1870-19:2013.

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 the 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, 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, Turkey and the United Kingdom.

<https://standards.iteh.ai/catalog/standards/sist/76399ea1-7615-4d64-a89c-278b9cfd37b1/sist-en-iso-19085-9-2020>

Endorsement notice

The text of ISO 19085-9:2019 has been approved by CEN as EN ISO 19085-9:2020 without any modification.

Annex ZA (informative)

Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered

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

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 Directive 2006/42/EC

Essential Requirements (ERs) of Directive 2006/42/EC	Clauses / subclauses of this EN	Remarks/Notes
1.1.2 Principles of safety integration		
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	
d) constraints in use	7.5, 8.3	
e) equipment	6.1, 8.3	
1.1.3 Materials and products	6.2, 7.3	
1.1.4 Lighting	8.3	
1.1.5 Design of machinery to facilitate its handling	8.3	
1.1.6 Ergonomics	7.5	
1.1.7 Operating position	5.2	
1.2.1 Safety and reliability of control systems	5.1, 5.7, 5.8, 5.11, 5.12, 5.13, 6.5, 6.6, 7.7	
1.2.2 Control devices	5.2, 5.3, 5.4, 5.7	
1.2.3 Starting	5.3	
1.2.4 Stopping	5.4, 5.5, 6.4	
1.2.4.1 Normal stop	5.4.2	
1.2.4.3 Emergency stop	5.4.4	
1.2.6 Failure of the power supply	5.8, 7.7	
1.3.1 Risk of loss of stability	6.1, 8.3	

1.3.2 Risk of break-up during operation	6.2, 8.3	
1.3.3 Risks due to falling or ejected objects	6.2, 6.3, 6.5, 6.8, 6.9, 8.3	
1.3.6 Risks relating to variations in the operating conditions	5.7, 6.6	
1.3.7 Risks related to moving parts	6.6, 6.7, 8.3	
1.3.8 Choice of protection against risks related to moving parts	6.5, 6.6, 6.7, 8.3	
1.3.8.1 Moving transmission parts	6.6.3	
1.3.8.2 Moving parts involved in the process	6.6.2	
1.3.9 Risk of uncontrolled movements	6.1.1	
1.4.1 General requirements	6.9	
1.4.2.1 Fixed guards	6.5.1	
1.4.2.2 Interlocking movable guards	6.5.2	
1.4.2.3 Adjustable guards restricting access	6.6.2	
1.4.3 Special requirements for protective devices	6.5.3	
1.5.1 Electricity supply	7.4, 7.13	
1.5.2 Static electricity	7.11	
1.5.3 Energy supply other than electricity	7.7	
1.5.4 Errors of fitting	7.12	
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	
1.5.13 Emission of hazardous materials and substances	7.3	
1.6.1 Machinery maintenance	7.14, 8.3	
1.6.2 Access to operating position and servicing points	7.14, 8.3	
1.6.3 Isolation of energy sources	7.13, 8.3	
1.6.4 Operator intervention	7.14, 8.3	
1.6.5 Cleaning of internal parts	7.14, 8.3	
1.7.1 Information and warnings on the machinery	7.10, 8.1, 8.2	
1.7.2 Warning devices	7.10, 8.1	
1.7.3 Marking of machinery	8.2	
1.7.4 Instructions	7.10, 8.3	
2.3 Machinery for working wood and analogous materials		

EN ISO 19085-9:2020 (E)

a) guiding	6.10, 6.11	
b) ejection	6.2, 6.3, 6.5, 6.6, 6.8, 6.9, 8.3	
c) brake	5.5, 6.4	
d) accidental tool contact	6.6.2, 8.3	

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.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 19085-9:2020](https://standards.iteh.ai/catalog/standards/sist/76399ea1-7615-4d64-a89c-278b9cfd37b1/sist-en-iso-19085-9-2020)

<https://standards.iteh.ai/catalog/standards/sist/76399ea1-7615-4d64-a89c-278b9cfd37b1/sist-en-iso-19085-9-2020>

INTERNATIONAL
STANDARD

ISO
19085-9

First edition
2019-04

Woodworking machines — Safety —
Part 9:
Circular saw benches (with and
without sliding table)

Machines à bois — Sécurité —

Partie 9: Scies circulaires à table de menuisier (avec et sans table
mobile)
iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 19085-9:2020

<https://standards.iteh.ai/catalog/standards/sist/76399ea1-7615-4d64-a89c-278b9cfd37b1/sist-en-iso-19085-9-2020>



Reference number
ISO 19085-9:2019(E)

© ISO 2019

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 19085-9:2020

<https://standards.iteh.ai/catalog/standards/sist/76399ea1-7615-4d64-a89c-278b9cf37b1/sist-en-iso-19085-9-2020>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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

Published in Switzerland

Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	2
3 Terms and definitions	2
4 List of significant hazards	3
5 Safety requirements and measures for controls	5
5.1 Safety and reliability of control systems.....	5
5.2 Control devices.....	5
5.3 Start.....	6
5.4 Safe stops.....	7
5.4.1 General.....	7
5.4.2 Normal stop.....	7
5.4.3 Operational stop.....	7
5.4.4 Emergency stop.....	7
5.5 Braking function of tool spindles.....	7
5.6 Mode selection.....	7
5.7 Spindle speed changing.....	7
5.7.1 Spindle speed changing by changing belts on the pulleys.....	7
5.7.2 Spindle speed changing by incremental speed change motor.....	7
5.7.3 Infinitely variable speed by frequency inverter.....	7
5.8 Failure of any power supply.....	7
5.9 Manual reset control.....	7
5.10 Enabling control.....	8
5.11 Machine moving parts speed monitoring.....	8
5.12 Time delay.....	8
5.13 Power-operated adjustment of the saw blades and/or fences.....	8
6 Safety requirements and measures for protection against mechanical hazards	9
6.1 Stability.....	9
6.1.1 Stationary machines.....	9
6.1.2 Displaceable machines.....	9
6.2 Risk of break-up during operation.....	9
6.3 Tool holder and tool design.....	9
6.3.1 General.....	9
6.3.2 Spindle locking.....	9
6.3.3 Circular saw blade fixing device.....	9
6.3.4 Flange dimension for circular saw blades.....	9
6.3.5 Fixing device for milling tools.....	9
6.4 Braking.....	10
6.4.1 Braking of tool spindles.....	10
6.4.2 Maximum run-down time.....	10
6.4.3 Brake release.....	10
6.5 Safeguards.....	10
6.5.1 Fixed guards.....	10
6.5.2 Interlocking movable guards.....	10
6.5.3 Hold-to-run control.....	10
6.5.4 Two-hand control.....	10
6.5.5 Electro-sensitive protective equipment (ESPE).....	10
6.5.6 Pressure-sensitive protective equipment (PSPE).....	11
6.6 Prevention of access to moving parts.....	11
6.6.1 General.....	11
6.6.2 Guarding of tools.....	11

ISO 19085-9:2019(E)

6.6.3	Guarding of drives	18
6.6.4	Guarding of shearing and/or crushing zones	18
6.7	Impact hazard	19
6.8	Clamping devices	19
6.9	Measures against ejection	19
6.9.1	General	19
6.9.2	Guards materials and characteristics	19
6.9.3	Anti-kickback devices	19
6.10	Work-piece supports and guide	23
6.10.1	Rip fence	23
6.10.2	Cross-cut fence	26
6.10.3	Machine table	27
6.10.4	Extension table	27
6.11	Safety appliances	27
7	Safety requirements and measures for protection against other hazards	29
7.1	Fire	29
7.2	Noise	29
7.2.1	Noise reduction at the design stage	29
7.2.2	Noise emission measurement	29
7.3	Emission of chips and dust	29
7.4	Electricity	29
7.4.1	General	29
7.4.2	Displaceable machines	30
7.5	Ergonomics and handling	30
7.6	Lighting	30
7.7	Pneumatics	30
7.8	Hydraulics	30
7.9	Electromagnetic compatibility	30
7.10	Laser	30
7.11	Static electricity	30
7.12	Errors of fitting	30
7.13	Isolation	31
7.14	Maintenance	31
8	Information for use	31
8.1	Warning devices	31
8.2	Marking	31
8.2.1	General	31
8.2.2	Additional markings	31
8.3	Instruction handbook	31
8.3.1	General	31
8.3.2	Additional information	32
	Annex A (informative) Performance level required	35
	Annex B (normative) Test for braking function	36
	Annex C (normative) Stability test for displaceable machines	37
	Annex D (normative) Impact test for guards	38
	Annex E (normative) Noise emission measurement for machines not in ISO 7960:1995	39
	Annex F (normative) Saw blade guard rigidity test	40
	Annex G (normative) Minimum dimensions of machine table, extension table and table insert	44
	Annex H (normative) Riving knife longitudinal and lateral stability test	46
	Bibliography	48

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 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*.

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.

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.

ISO 19085-9:2019(E)

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 that the manufacturer will need to give to the user.

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.

Thus, [Clauses 5, 6, 7](#) and [8](#) with their subclauses and the annexes of this part can either

— confirm as a whole,

— confirm with additions,

— exclude in total, or

— replace with specific text

iTech STANDARD PREVIEW
(standards.iteh.ai)
SIST EN ISO 19085-9:2020
<https://standards.iteh.ai/catalog/standards/sist/76399ea1-7615-4d64-a89c-278b9cf37b1/sist-en-iso-19085-9-2020>

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

This interrelation is indicated in the first paragraph of each 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 part without correspondence to ISO 19085-1:2017 are indicated by the introductory sentence: “Subclause (or Annex) specific to this part of ISO 19085.”

[Clauses 1, 2, 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 847-1:2017.

Woodworking machines — Safety —

Part 9: Circular saw benches (with and without sliding table)

1 Scope

This document gives the safety requirements and measures for stationary and displaceable circular saw benches (with or without sliding table and/or demountable power feed unit), also known as “table saws” (in the USA), hereinafter referred to as “machines”, designed to cut wood and material with similar physical characteristics to wood.

NOTE 1 For the definition of stationary and displaceable machine, see ISO 19085-1:2017, 3.4 and 3.5.

It deals with all significant hazards, hazardous situations and events as listed in [Clause 4](#) relevant to these 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 are taken into account.

NOTE 2 For relevant but not significant hazards, e.g. sharp edges of the machine frame, see ISO 12100:2010.

It is also applicable to machines fitted with one or more of the following devices, or working unit, whose hazards have been dealt with:

- device for the main saw blade and scoring saw blade to be raised and lowered through the table;
- device to tilt the main saw blade and scoring saw blade for angled cutting;
- device for scoring;
- device for grooving with milling tool with a width not exceeding 20 mm in one pass;
- demountable power feed unit;
- additional manually operated sliding table;
- powered work-piece clamping device.

NOTE 3 Circular saw benches are used for ripping, cross cutting, dimensioning and grooving.

This document does not apply to:

- a) transportable/displaceable machines intended for outdoor use on building sites;

NOTE 4 Building site saws (contractor saws) are covered by the requirements of ISO 19085-10:2018.

- b) hand held woodworking machines including any adaptation permitting their use in a different mode, i.e. bench mounting;
- c) machines intended for use in a potentially explosive atmosphere;
- d) machines manufactured before the date of its publication as an International Standard;
- e) transportable machines with a maximum saw blade diameter of ≤ 315 mm.

NOTE 5 Transportable motor-operated electric tools are dealt with in IEC 62841-1:2014 and IEC 62841-3-1:2014.