



SLOVENSKI STANDARD
oSIST prEN ISO 19085-9:2022
01-september-2022

Lesnoobdelovalni stroji - Varnost - 9. del: Krožne žage (s podajalno mizo ali brez nje) (ISO/DIS 19085-9:2022)

Woodworking machines - Safety - Part 9: Circular saw benches (with and without sliding table) (ISO/DIS 19085-9:2022)

Holzbearbeitungsmaschinen - Sicherheit - Teil 9: Tischkreissägemaschinen (mit und ohne Schiebetisch) (ISO/DIS 19085-9:2022)

Machines à bois - Sécurité - Partie 9: Scies circulaires à table de menuisier (avec et sans table mobile) (ISO/DIS 19085-9:2022)

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25.080.60	Strojne žage	Sawing machines
79.120.10	Lesnoobdelovalni stroji	Woodworking machines

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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)

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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 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 machine*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 143, *Woodworking machines*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 19085-9:2019), which has been technically revised. The main changes compared to the previous edition are as follows:

- the Scope now specifies that machines are capable of continuous production use;
- the list of significant hazards has been moved to new [Annex A](#);
- the structure has been simplified and modified, in particular in [5.6](#);
- [Subclause 6.2](#) has been updated and a new full noise test code has been added 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 of International Standards 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 defined in ISO 12100.

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), 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 19085-1:2021, to the extent specified in the Scope of the applicable part of ISO 19085.

As far as possible, the safety requirements of parts of the ISO 19085 series refer to the relevant clauses of ISO 19085-1. Each part includes replacements and additions to the common requirements given in ISO 19085-1.

All parts of the ISO 19085 series have the same structure, so that reference to ISO 19085-1 is made always and only from and to the same subclause number, last indent.

[Clauses 1](#) to [3](#) are specific to each part and, therefore are distinct from ISO 19085-1:2021, Clauses 1 to 3.

For [Clauses 4](#) to [7](#) and the annexes, each subclause in ISO 19085-1:2021, is cited as:

- confirmed as a whole;
- confirmed with additions;
- excluded in total; or
- replaced with specific text.

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This is indicated by one of the following possible statements:

- “ISO 19085-1:2021, [subclause/Annex], applies.”;
- “ISO 19085-1:2021, [subclause/Annex], applies with the following additions.” or “ISO 19085-1:2021, [subclause/Annex], applies with the following additions, subdivided into further specific subclauses.”;
- “ISO 19085-1:2021, [subclause/Annex], does not apply.”;
- “ISO 19085-1:2021, [subclause/Annex], is replaced by the following text.” or “ISO 19085-1:2021, [subclause/Annex], is replaced by the following text, subdivided into further specific subclauses.”.

Other subclauses and annexes specific to this document are indicated by the introductory sentence: “Subclause/Annex specific to this document.”.

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Woodworking machines — Safety —

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

1 Scope

This document specifies the safety requirements and measures for circular saw benches with or without sliding table and/or demountable power feed unit and capable of continuous production use, also known as “table saws” (in the USA), hereinafter referred to also as “machines”.

The machines are designed to cut wood and material with similar physical characteristics to wood.

It deals with all significant hazards, hazardous situations and events as 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.

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 workpiece clamping device.

This document does not apply to:

- a) machines intended for outdoor use on building sites;
NOTE 1 Building site saws (contractor saws) are covered by the requirements of ISO 19085-10:2018.
- b) handheld 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 prior to the date of its publication as an International Standard.

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*

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ISO 13857:2019, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

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

EN 847-1:2017, *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular saw blades*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100:2010, ISO 19085-1:2021 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 <https://www.electropedia.org/>

3.1 circular saw bench table saw

hand-fed machine fitted with a single main circular saw blade which is fixed in position during the cutting operation, and a horizontal table fixed during operation

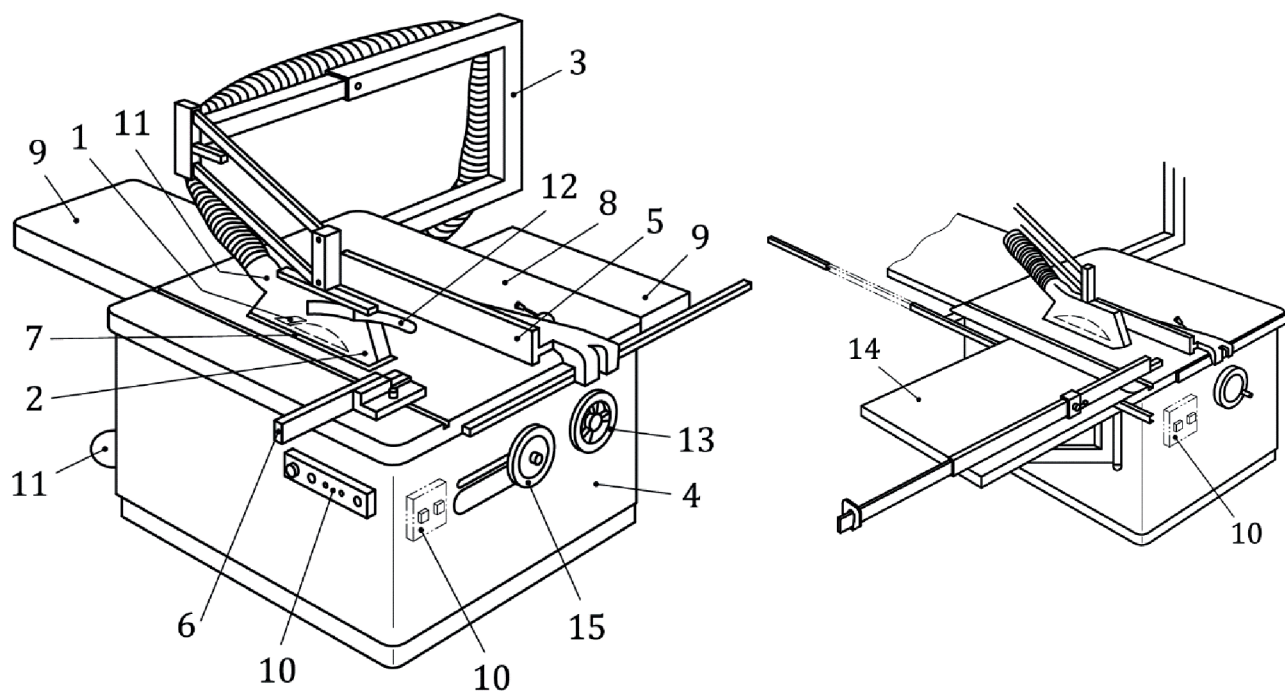
Note 1 to entry: The main parts and their terminology are shown in [Figure 1](#).

Note 2 to entry: The main saw blade is mounted on a spindle below the table.

Note 3 to entry: Circular saw benches are mainly used for ripping, cross cutting, dimensioning and grooving.

3.2 grooving

making of a cut in the surface of the workpiece not deep enough to pass through, using the saw blade or a milling tool



a) Saw bench

b) Saw bench with sliding table

Key

1	ripping knife	9	extension table
2	saw blade guard	10	controls
3	saw blade guard support	11	exhaust outlet
4	fixed guard beneath table	12	push stick
5	rip fence	13	cutting height adjustment
6	cross-cut fence	14	sliding table
7	table insert	15	inclination adjustment
8	machine table		

Figure 1 — Examples of a circular saw bench**3.3****initiation control**

control which, after actuation, enables the provision of power to specific machine actuators, e.g., by a programmable logic control

4 Safety requirements and measures for controls**4.1 Safety and reliability of control systems**

ISO 19085-1:2021, 4.1, applies.

[Annex B](#) provides an informative summary table of Performance Levels (PL) specified in 4 and 5 for each safety function.

4.2 Control devices

ISO 19085-1:2021, 4.2, applies with the following additions.

The electrical control devices except the main switch shall be located:

- a) For machines designed to be used without a sliding table, either:
 - 1) in the shaded area marked X or in the shaded area marked Y in [Figure 2](#); or
 - 2) on a movable control panel;
- b) For machines equipped with a sliding table and/or where provision is made for the use of a sliding table, either:
 - 1) in the shaded area marked Y in [Figure 2](#); or
 - 2) on a movable control panel.

A normal stop control device shall be located adjacent to each start control device.

The shaded areas X and Y are located below the table at a distance of at least 50 mm from the table top and more than 600 mm above the floor (see *a* in [Figure 2](#)) and:

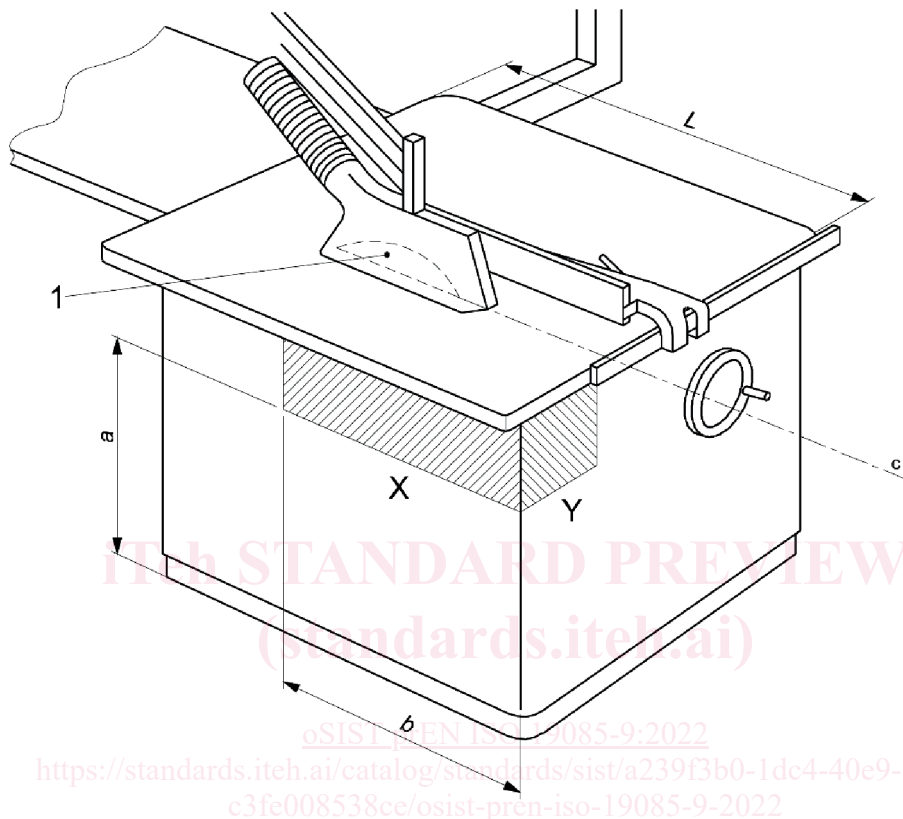
- i) on the left side of the machine (area X) and extending not more than half of the table length, *L* (see *b* in [Figure 2](#));
- ii) on the front side of the machine (area Y) on the left of the cutting line.

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The movable control panel fixed to the machine shall be located so that:

- its front face is at a distance from the front edge of the table not exceeding 700 mm;
- its upper surface is at a distance from the floor level not exceeding 1 800 mm.

Verification: By checking the relevant drawings, measurement and inspection of the machine.



Key

- X left side controls area
- Y front side controls area (on the left of cutting line)
- 1 saw blade
- L length of machine table
- a ≥ 600 mm.
- b $\leq \frac{1}{2} L$.
- c Cutting line.

Figure 2 — Position of control devices

4.3 Start

ISO 19085-1:2021, 4.3, applies with the following additions.

The scoring saw blade drive shall not be capable of being started before the main saw blade drive.

The SRP/CS for interlocking between the scoring saw blade drive and the main saw blade drive shall achieve $PL_r = c$.

Verification: By checking the relevant drawings and/or circuit diagrams, inspection of the machine and relevant functional testing of the machine.

4.3.1 Direct start

ISO 19085-1:2021, 4.3.1, applies.

4.3.2 Start via control power-on

ISO 19085-1:2021, 4.3.2, does not apply.

4.4 Safe stops

4.4.1 General

ISO 19085-1:2021, 4.4.1, applies.

4.4.2 Normal stop

ISO 19085-1:2021, 4.4.2, applies.

4.4.3 Operational stop

ISO 19085-1:2021, 4.4.3, does not apply.

4.4.4 Emergency stop

ISO 19085-1:2021, 4.4.4, applies.

4.5 Braking function of tools

ISO 19085-1:2021, 4.5, applies.

4.6 Mode selection

ISO 19085-1:2021, 4.6, does not apply.

4.7 Tool speed changing

4.7.1 Speed changing by shifting the belts on the pulleys

ISO 19085-1:2021, 4.7.1, applies.

4.7.2 Speed changing by incremental speed change motor

ISO 19085-1:2021, 4.7.2, applies.

4.7.3 Infinitely variable speed by frequency inverter

ISO 19085-1:2021, 4.7.3, applies.

4.8 Failure of any power supply

ISO 19085-1:2021, 4.8, applies with the following additions.

As an exception non-return valves are not required if workpiece clamping is provided by pneumatic cylinders.