International Standard

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Woodworking machines — Safety —

Part 20: Horizontal cutting cross-cut sawing machines with one saw unit (radial arm saws)

Machines à bois — Sécurité —

Partie 20: Tronçonneuses à coupe horizontale avec une unité de sciage (scies à bras radial)

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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).

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.

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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.

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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).

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This document is intended to be used in conjunction with ISO 19085-1:2021.

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.

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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. The ISO 19085 series is intended for 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 (regulators, accident prevention organisations, market surveillance, etc.).

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, for example, 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.

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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 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, the safety requirements of parts of the ISO 19085 series refer to the relevant clauses of ISO 19085-1:2021. Each part includes replacements and additions to the common requirements given in ISO 19085-1:2021.

All parts of the ISO 19085 series have the same structure, so that reference to ISO 19085-1:2021 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.

This is indicated by one of the following possible statements:

— “ISO 19085-1:2021, [subclause/Annex] applies.”;

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— “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 20: Horizontal cutting cross-cut sawing machines with one saw unit (radial arm saws)

1 Scope

This document specifies the safety requirements and measures for horizontal cutting cross-cut sawing machines with one saw unit (radial arm saws) with manual loading or unloading of the workpiece or both and capable of continuous production use, hereinafter referred to also as “machines”.

The machines are designed to cut solid wood and material with similar physical characteristics to wood, as well as:

— aluminium profiles also filled or composed with plastic or foam or rubber based insulating materials;

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

— polymer-matrix composite materials and reinforced with thermoplastic or thermoset or elastomeric materials;

— fibreglass;

— composite bars made from the materials listed above.

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This document deals with all significant hazards, hazardous situations or hazardous events, listed in Annex A, relevant to the machines, when it is used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer.

This document is also applicable to the other life cycle phases of the machines: transport, assembly, adjustment, maintenance, dismantling and scrapping.

This document does not apply to:

a) machines designed for cross cutting of logs;

b) machines designed for either sawing or milling roof timber frames, or both;

c) machines fitted with hydraulic braking systems;

d) machines fitted with hydraulically powered machine actuators;

e) machines fitted with power-operated workpiece positioning system;

f) machines fitted with the facility for either milling (including trenching and grooving), sanding or drilling, or all;

g) machines able to perform cuts parallel to the fence;

h) machines intended for use in potentially explosive atmosphere;

i) machines manufactured prior to the publication of this document.

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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 13851:2019, *Safety of machinery — Two-hand control devices — Principles for design and selection*

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*

IEC 61800-5-2:2016, *Adjustable speed electrical power drive systems - Part 5-2: Safety requirements - Functional*

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 terminology 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
horizontal cutting cross-cut circular sawing machine with one saw unit
radial arm saw
machine where the saw unit is moved horizontally forward along a support (e.g. an arm) in a straight line through the workpiece during the cut and then back to its rest position

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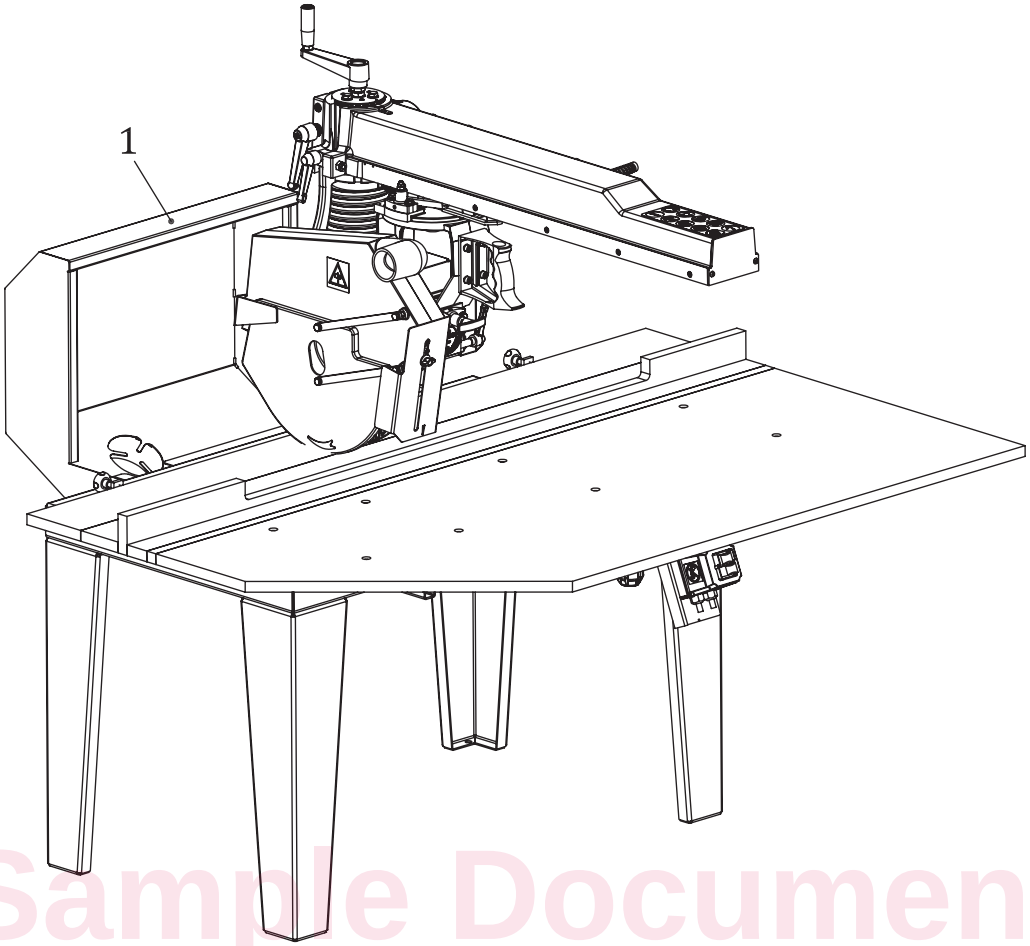
Note 1 to entry: See Figures 1 a), b) and c) for examples of radial arm saws.

Note 2 to entry: The workpiece is manually positioned on and removed from the workpiece support.

Note 3 to entry: The radial arm saw with power operated cutting stroke as per the example in Figure 1 c) has a shorter cutting stroke and the saw unit support completely internal to the saw unit enclosure.

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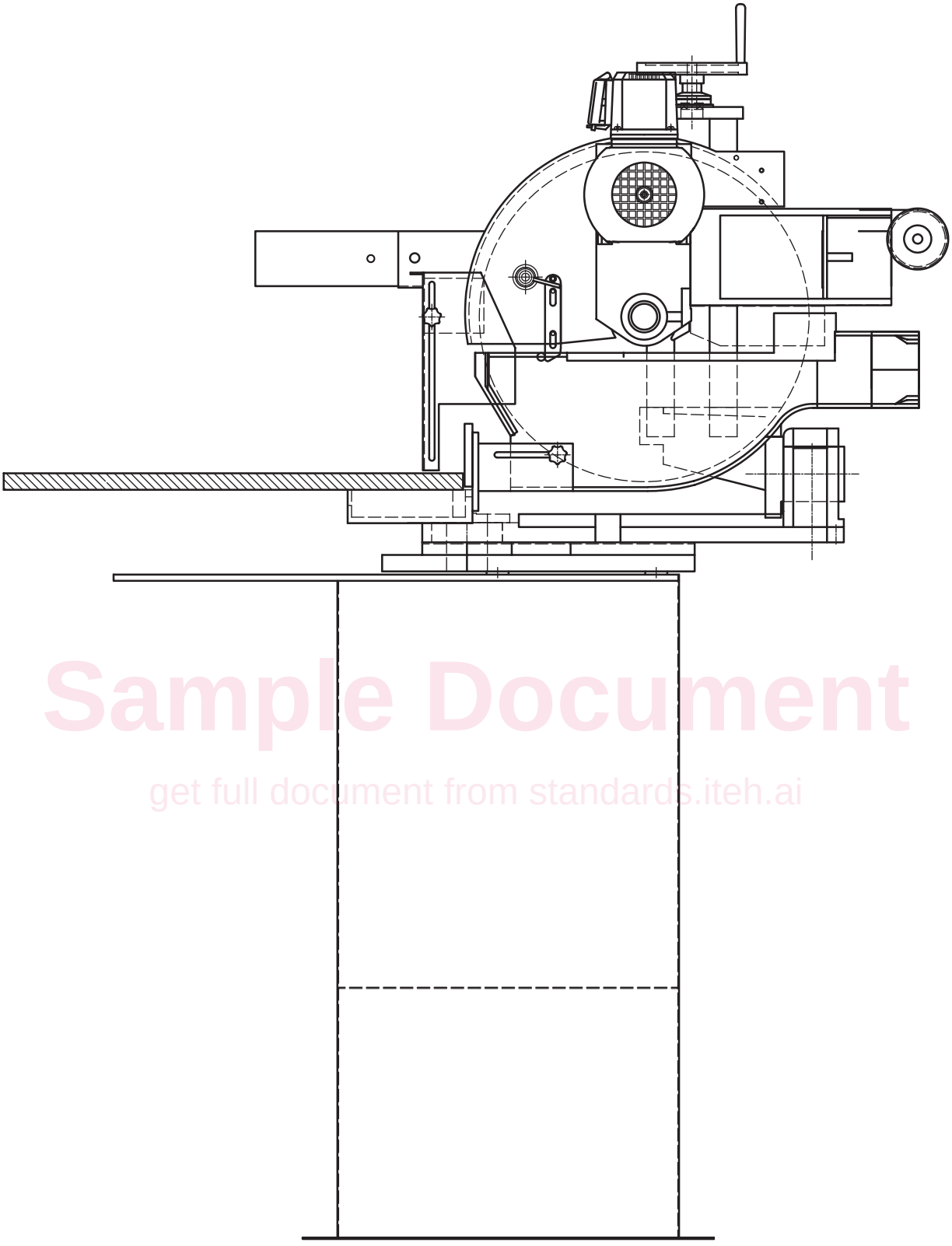
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a) Radial arm saw with manual cutting stroke, with automatic adjustable lateral guards and manually adjustable front guard

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b) Radial arm saw with manual cutting stroke, with lateral fixed guards and manually adjustable front guard

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