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Woodworking machines — Safety —

Part 12: Tenoning/profiling machines

Machines à bois — Sécurité —

Partie 12: Machines à tenonner/profiler

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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 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 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.

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 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 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 subclause or annex right after the title by one of the following statements:

— “ISO 19085-1:2017, [subclause/Annex], applies.”;

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

— “ISO 19085-1:2017, [subclause/Annex], does not apply.”;

— “ISO 19085-1:2017, [subclause/Annex], is replaced by the following text.” or “ISO 19085-1:2017, [subclause/Annex], 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: “Subclause/Annex 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 847-1:2017 and EN 847-2:2017. Requirements for tool clamping devices are given in EN 847-3:2013.

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Woodworking machines — Safety —

Part 12: Tenoning/profiling machines

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1 Scope

This document gives the safety requirements and measures for stationary, manually loaded and unloaded:

— single end tenoning machines with manual feed sliding table;

— single end tenoning machines with mechanical feed sliding table;

— single end tenoning and/or profiling machines with mechanical feed;

— double end tenoning and/or profiling machines with mechanical feed, also designed to be automatically loaded/unloaded;

— angular systems for tenoning and profiling with mechanical feed;

with maximum work-piece height capacity of 200 mm for single end machines and 500 mm for double end machines, hereinafter referred to as “machines”.

It deals with all significant hazards, hazardous situations and events as listed in Clause 4 relevant to machines, when 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 For relevant but not significant hazards, e.g. sharp edges of the machine frame, see ISO 12100:2010.

The machines are designed to process in one pass one end or two sides, either opposite or perpendicular to each other, of work-pieces made of:

1) solid wood;

2) materials with similar physical characteristics to wood (see ISO 19085-1:2017, 3.2);

3) fibre-cement, rock/glass wool, gypsum, plasterboard, only with machines with mechanical feed.

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

— sanding units;

— fixed or movable work-piece support;

— automatic tool changing;

— automatic work-piece returner;

— glass bead saw unit;

— hinge recessing unit;

— post forming edge pre-cutting;

— boring unit;

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— dynamic processing unit;

— sawing unit installed out of the integral enclosure, between machine halves in double end machines;

— foiling unit;

— coating unit;

— grooving unit with milling tool installed out of the integral enclosure, between machine halves;

— brushing unit;

— gluing unit;

— sealing unit;

— dowels inserting unit;

— tongues inserting unit;

— inkjet marking unit;

— laser marking unit;

— labelling unit;

— work-piece back-up device (anti-chipping / anti-splintering device);

— quick tool changing system.

This document does not deal with any hazards related to:

a) systems for automatic loading and unloading of the work-piece to a single machine other than automatic work-piece returner;

b) single machine being used in combination with any other machine (as part of a line);

c) use of tools, other than saw blades or milling tools for grooving, installed between machine halves and out of the integral enclosure in double end machines;

d) use of tools protruding out of the integral enclosure;

e) chemical characteristics of fibre-cement, rock/glass wool, gypsum, plasterboard and their dust.

It is not applicable to machines intended for use in potentially explosive atmosphere nor to machines manufactured prior to its publication.

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 286-2:2010, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 2: Tables of standard tolerance classes and limit deviations for holes and shafts*

ISO 7960:1995, *Airborne noise emitted by machine tools — Operating conditions for woodworking machines*

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

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

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ISO 13856-2:2013, *Safety of machinery — Pressure-sensitive protective devices — Part 2: General principles for design and testing of pressure-sensitive edges and pressure-sensitive bars*

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

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

IEC 60825-1:2014, *Safety of laser products - Part 1: Equipment classification and requirements*

IEC 61310-1:2007, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals*

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

EN 847-2:2017, *Tools for woodworking — Safety requirements — Part 2: Requirements for the shank of shank mounted milling tools/circular saw blades*

EN 847-3:2013, *Tools for woodworking — Safety requirements — Part 3: Clamping devices*

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/

3.1
single end tenoning machine with manual feed sliding table
machine designed for the production of *tenons* (3.10) on one end of a work-piece during one cycle where the tenon is cut by means of milling tools and saw blades mounted on one or more spindles and with manual feed sliding table supporting the work-piece during processing

Note 1 to entry: See Figure 1 for an example.

3.2
single end tenoning machine with mechanical feed sliding table
machine designed for the production of *tenons* (3.10) on one end of a work-piece during one cycle where the tenon is cut by means of milling tools and saw blades mounted on one or more spindles, with mechanical feed sliding table and with one operator position for both loading and unloading

Note 1 to entry: See Figure 2 for an example.

3.3
single end tenoning and/or profiling machine with mechanical feed
machine designed for production of *tenons* (3.10) and/or profiles on one side of the work-piece in one pass

Note 1 to entry: This machine is also known as “shaper-sander” or “shape and sand machine” (e.g. in North America). See Figure 3 for an example.

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