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Woodworking machines — Safety —

Part 13:

Multi-blade rip sawing machines with manual loading and/or unloading

Machines à bois — Sécurité —

Partie 13: Déligneuses multi-lames à chargement et/ou déchargement manuel

ICS: 13.110; 79.120.10

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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 on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 39, *Machine tools*, Subcommittee SC 4, *Woodworking machines*.

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

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, 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, safety requirements are referenced to the relevant sections of ISO 19085-1, to avoid repetition and reduce their length. The other parts contain replacements and additions to the common requirements given in ISO 19085-1.

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

the corresponding subclauses or annexes of ISO 19085-1.

This interrelation is indicated in the first paragraph of each subclause right after the title by one of the following statements:

- “This subclause of ISO 19085-1 applies.”;
- “This subclause of ISO 19085-1 applies with the following additions.” or “This subclause of ISO 19085-1 applies with the following additions, subdivided into further specific subclauses.”;
- “This subclause of ISO 19085-1 does not apply.”;
- “This subclause of ISO 19085-1 is replaced by the following text.” or “This subclause of ISO 19085-1 is replaced by the following text, divided into further specific subclauses.”.

Specific subclauses and annexes in this part of ISO 19085 without correspondent in ISO 19085-1 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, with no need for indication since they are specific to each part of the series.

NOTE Requirements for tools are given in EN 847-1:2013.

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Woodworking machines — Safety — Part 13: Multi-blade rip sawing machines with manual loading and/or unloading

1 Scope

This part of ISO 19085 gives the safety requirements and measures for stationary multi-blade rip sawing machines manually loaded and/or unloaded, hereinafter referred to as “machines”, designed to cut solid wood and material with similar physical characteristics to wood.

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.

This part of ISO 19085 does not deal with specific hazards related to the combination of single machines with any other machine as part of a line.

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, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 19085-1:2017, *Woodworking machines – Safety – Part-1: common requirements*

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*

ISO 13856-3:2013, *Safety of machinery — Pressure sensitive protective devices — Part 3: General principles for the design and testing of pressure sensitive bumpers, plates, wires and similar devices*

ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

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

EN 614-1:2006+A1:2009, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 847-1:2013, *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular saw blades*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100:2010, in ISO 13849-1:2016, in ISO 19085-1:2017 and the following apply.

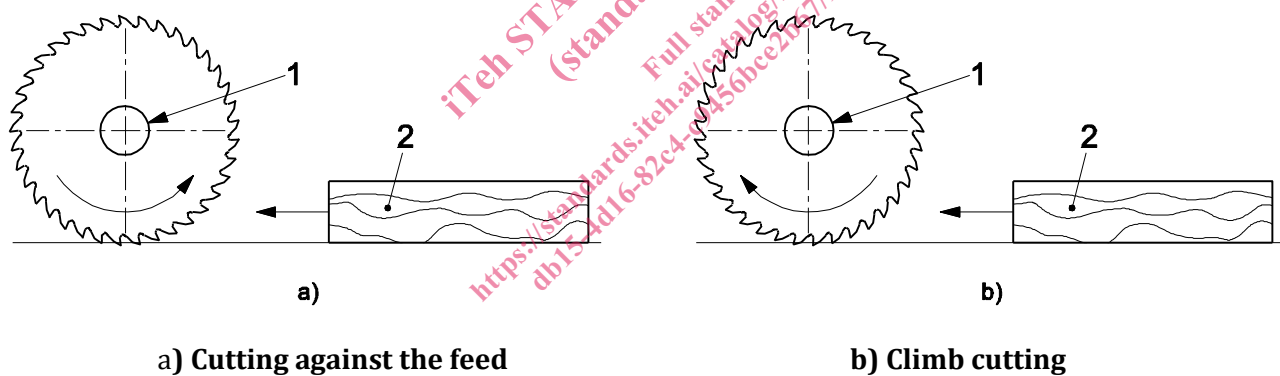
3.1 multi-blade rip sawing machine

machine designed to be used with saw blades at different positions on the spindles which are fixed in position during cutting, where the workpiece is fed to the blades by an integrated power feed i.e. rollers, chain conveyor or chain bed

Note 1 to entry: The saw blades can be mounted on one or more saw spindles which may be capable of vertical adjustment. The saw blades may be capable of axial adjustment either relative to the spindle or together with the spindle. The saw blade spindles may be arranged so that they are:

- a) all mounted above the workpiece support;
- b) all mounted below the workpiece support;
- c) mounted both above and below the workpiece support.

Note 2 to entry: The cutting mode can be ‘against the feed’ or ‘climb cutting’ or a combination of both (see Figure 1).



- Key**
- 1 fixed saw blade
 - 2 workpiece
 - feed direction

Figure 1 — Relation between cutting direction and feed direction

NOTE 3 to entry: Examples of machines configurations are shown in Figure 2

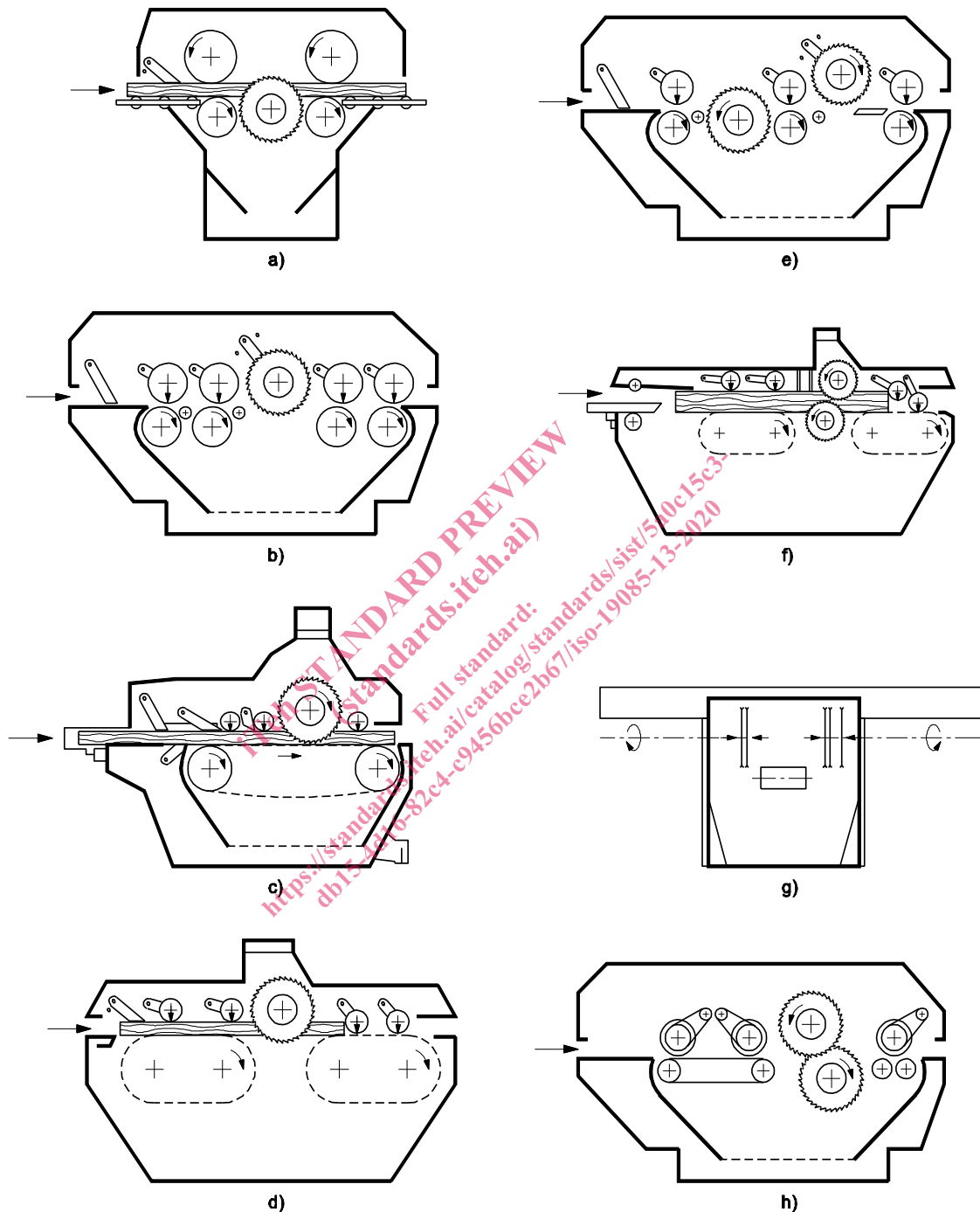
3.2 loading the machine

manual or automatic placing of the workpiece onto a carriage, magazine, lift, hopper, moveable bed, conveyor or the presentation of the workpiece to an integrated feed device

3.3

anti-splinter fingers

moveable elements at the infeed of the machine to prevent the ejection of splinters

**Key**

Blades spindles: single-spindle machines in a), b), c), d); double-spindle machines in e), f), g), h), with the spindles in line in g), one above and one below the workpiece level in e), f), h).

Workpiece support and integrated feed: by spiked rollers in a), b), e); by chain conveyor in c), d), f); by a combination of the two in g), h).

Figure 2 — Examples of machines configurations as of spindles number and feed technology

3.4 cutting width capacity

maximum distance between external cutting surfaces of the two outside saw blades mounted at extreme positions on the saw spindle

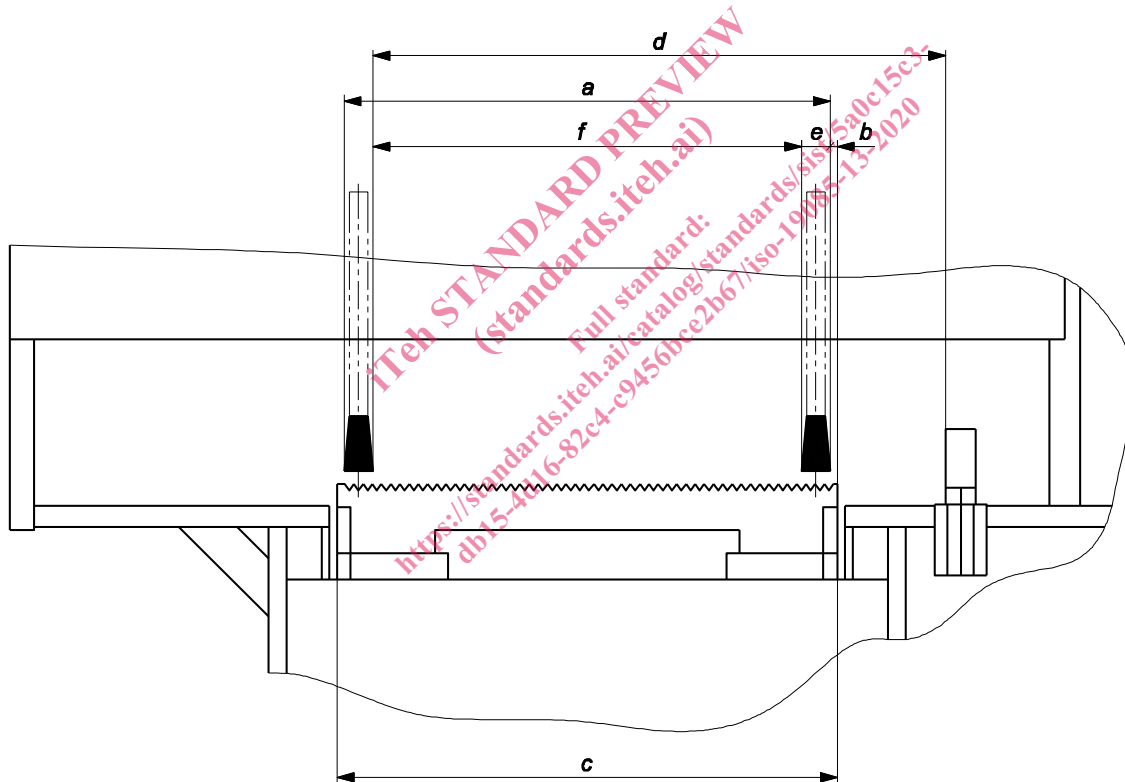
Note 1 to entry: See Figure 3, key f.

3.5 manual loading of power fed machines

where the workpiece is presented by the operator directly to the machine integrated feed, e.g. rotating feed rollers, chain conveyor or chain bed; i.e. for which there is no intermediate loading device to receive and transfer the workpiece from the operator to the integrated feed

3.6 manual unloading of power fed machines

where the workpiece is removed by the operator directly from the machine outfeed, i.e. for which there is no intermediate unloading device to receive and transfer the workpiece from the machine outfeed to the operator



Key

- a* maximum distance between the two outer cutting planes of the outside saw blades
- b* distance between the inner surface of the outside saw blade and the lateral limitation given by the feed system
- c* width of the workpiece conveyor
- d* maximum distance between saw blade and fence
- e* cutting width of the saw blade
- f* cutting width capacity, distance between the inner cutting planes of the outside saw-blades

Figure 3 — Cutting width capacity

4 List of significant hazards

This clause contains all the significant hazards, hazardous situations and events (see ISO 12100:2010), identified by risk assessment as significant for the machines as defined in the scope and which require action to eliminate or reduce the risk. This document deals with these significant hazards by defining safety requirements and/or measures or by reference to relevant standards. These hazards are listed in Tables 1.

Table 1 — List of significant hazards

No	Hazards, hazardous situations and hazardous events	ISO 12100:2010	Relevant sub-clause of this document
1	Mechanical hazards related to: - machine parts or workpieces:		
	a) shape;	6.2.2.1, 6.2.2.2, 6.3	6.2, 6.3, 6.9, 6.6, Annex F
	b) relative location;		5.2, 5.4.4, 5.9, 6.9, 6.6, 7.5
	c) mass and stability (potential energy of elements which may move under the effect of gravity)		5.15
	d) mass and velocity (kinetic energy of elements in controlled or uncontrolled motion);		5.13, 5.9, 6.9, 6.10
	e) mechanical strength.		6.2, 6.9
	- accumulation of energy inside the machinery:		
	f) liquids and gases under pressure;	6.2.10, 6.3.5.4	6.9, 7.8, 7.9
1.1	Crushing hazard		6.10, 6.6
1.2	Shearing hazard		6.10, 6.7
1.3	Cutting or severing hazard		6.3, 6.4, 6.9, 6.10, 6.6
1.4	Entanglement hazard		6.10, 6.6
1.5	Drawing-in or trapping hazard		6.10, 6.6
1.6	Impact hazard		6.2, 6.9
1.7	Stabbing and puncture hazard		6.2, 6.10
1.9	High pressure fluid injection or ejection hazard	6.2.10	6.10, 7.8, 7.9
2	Electrical hazards due to:		
2.1	Contact of persons with live parts (direct contact)	6.2.9, 6.3.5.4	7.4
2.2	Contact of persons with parts which have become live under faulty conditions (indirect contact)	6.2.9	7.4
2.4	Electrostatic phenomena	6.2.9	7.11