



**SLOVENSKI STANDARD**  
**SIST EN 1870-5:2003+A1:2009**  
**01-november-2009**

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Safety of woodworking machines - Circular sawing machines - Part 5: Circular sawbenches/up-cutting cross-cut sawing machines

Sicherheit von Holzbearbeitungsmaschinen - Kreissägemaschinen - Teil 5: Kombinierte Tischkreissägemaschinen/von unten schneidende Kappsägemaschinen

Sécurité des machines pour le travail du bois - Machines à scier circulaires - Partie 5: Scies circulaires combinées à table et à coupe transversale ascendante

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**Ta slovenski standard je istoveten z: EN 1870-5:2002+A1:2009**

**ICS:**

25.080.60	Strojne žage	Sawing machines
79.120.10	Lesnoobdelovalni stroji	Woodworking machines

**SIST EN 1870-5:2003+A1:2009** en

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 1870-5:2002+A1**

September 2009

ICS 79.120.10

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English Version

**Safety of woodworking machines - Circular sawing machines -  
Part 5: Circular saw benches/up-cutting cross-cut sawing  
machines**

Sécurité des machines pour le travail du bois - Machines à  
scier circulaires - Partie 5: Scies circulaires combinées à  
table et à coupe transversale ascendante

Sicherheit von Holzbearbeitungsmaschinen -  
Kreissägemaschinen - Teil 5: Kombinierte  
Tischkreissägemaschinen/von unten schneidende  
Kappsägemaschinen

This European Standard was approved by CEN on 8 November 2001 and includes Amendment 1 approved by CEN on 30 July 2009.

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## EN 1870-5:2002+A1:2009 (E)

## Foreword

This document (EN 1870-5:2002+A1:2009) has been prepared by Technical Committee 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of an identical text or by endorsement, at the latest by March 2010, and conflicting national standards shall be withdrawn at the latest by March 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1, approved by CEN on 2009-07-30.

This document supersedes EN 1870-5:2002.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

A1 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 the Machinery Directive.

For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. A1

Organisations contributing to the preparation of this European Standard include European Committee of Woodworking Machinery Manufacturers Association "EUMABOIS".

Annexes A, B, C, D and E are normative and A1 Annexes ZA and ZB A1 are informative.

A1 EN 1870 *Safety of woodworking machines — Circular sawing machines* consists of the following parts:

*Part 1: Circular saw benches (with and without sliding table), dimension saws and building site saws*

*Part 3: Down cutting cross-cut saws and dual purpose down cutting cross-cut saws/circular saw benches*

*Part 4: Multi-blade rip sawing machines with manual loading and/or unloading*

*Part 5: Circular saw -benches/up-cutting cross-cut sawing machines*

*Part 6: Circular sawing machines for firewood and dual purpose circular sawing machines for firewood/circular saw benches, with manual loading and/or unloading*

*Part 7: Single blade log sawing machines with integrated feed table and manual loading and/or unloading*

*Part 8: Single blade edging circular rip sawing machines with power driven saw unit and manual loading and/or unloading*

*Part 9: Double blade circular sawing machines for cross-cutting with integrated feed and with manual loading and/or unloading*

*Part 10: Single blade automatic and semi-automatic up-cutting cross-cut sawing machines*

*Part 11: Semi-automatic and automatic horizontal cross-cut sawing machines with one saw unit (radial arm saws)*

*Part 12: Pendulum cross-cut sawing machines*



*Part 13: Horizontal beam panel sawing machines*

*Part 14: Vertical panel sawing machines*

*Part 15: Multi-blade cross-cut sawing machines with integrated feed of the workpiece and manual loading and/or unloading*

*Part 16: Double mitre sawing machines for V-cutting*

*Part 17: Manual horizontal cutting cross-cut sawing machines with one saw unit (manual radial arm saws) *

The European Standards produced by CEN/TC 142 are particular to woodworking machines and complement the relevant A and B Standards on the subject of general safety (see introduction of  EN ISO 12100-1:2003  for a description of A, B and C standards).

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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**EN 1870-5:2002+A1:2009 (E)****0 Introduction**

This European Standard has been prepared to be a harmonised standard to provide one means of conforming to the essential safety requirements of the Machinery Directive, and associated EFTA regulations. This European Standard is a type "C" standard as defined in [EN ISO 12100-1:2003](#).

The extent to which hazards are covered is indicated in the scope of this European Standard.

The requirements of this European Standard concern designers, manufacturers, suppliers and importers of circular saw benches/up-cutting cross-cut sawing machines.

This European Standard also includes information to be provided by the manufacturer to the user.

Common requirements for tooling are given in [EN 847-1:2005](#).

Electrically driven machines excluded by the scope of this European Standard are covered by the requirements of [EN 61029-1:2000](#).

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## 1 Scope

**A1** This document deals with all significant hazards, hazardous situations and events as listed in Clause 4 which are relevant to circular saw benches/up-cutting cross-cut sawing machines, hereinafter referred to as “machines”, designed to cut solid wood, chipboard, fibreboard, plywood and also these materials where they are covered with plastic edging and/or plastic/light alloy laminates. **A1**

This European Standard does not apply to:

- **A1** hand-held motor-operated electric tools or any adaptation permitting their use in a different mode, i.e. bench mounting; **A1**
- **A1** NOTE 1 Hand-held motor-operated electric tools and saw benches to form an integrated whole with a hand-held motor-operated electric tools are covered by EN 60745-1:2006 together with EN 60745-2-5:2007. **A1**
- **A1** machines set up on a bench or a table similar to a bench, which is intended to carry out work in a stationary position, capable of being lifted by one person by hand. **A1**.

**A1** NOTE 2 Transportable motor-operated electric tools are covered by the requirements of EN 61029-1:2000 together with EN 61029-2-1:2002. **A1**

**A1** *deleted text* **A1**

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For Computer Numerically Controlled (CNC) machines this European Standard does not cover hazards related to Electro-Magnetic Compatibility (EMC).

This European Standard is primarily directed at machines which are manufactured after the date of issue of this European Standard.

**A1** NOTE 3 **A1** Circular saw benches are dealt with in EN 1870-1:1999.

## 2 Normative references

**A1** The following referenced documents are indispensable for the application 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. **A1**.

**A1** *deleted text* **A1**

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

**A1** EN 847-1:2005, *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular saw blades* **A1**

**A1** EN 894-1:1997, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 1: General principles for human interactions with displays and control actuators*

EN 894-2:1997, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 2: Displays*

EN 894-3:2000, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 3: Control actuators* **A1**

## EN 1870-5:2002+A1:2009 (E)

**A1** deleted text **A1**

EN 982:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

**A1** EN 1005-1:2001, *Safety of machinery — Human physical performance — Part 1: Terms and definitions*

EN 1005-2:2003, *Safety of machinery — Human physical performance — Part 2: Manual handling of machinery and component parts of machinery*

EN 1005-3:2002, *Safety of machinery — Human physical performance — Part 3: Recommended force limits for machinery operation*

EN 1005-4:2005, *Safety of machinery — Human physical performance — Part 4: Evaluation of working postures and movements in relation to machinery*

EN 1037:1995, *Safety of machinery — Prevention of unexpected start-up* **A1**

EN 1088:1995, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

**A1** EN 50370-1:2005, *Electromagnetic compatibility (EMC) — Product family standard for machine-tools — Part 1: Emission*

EN 50370-2:2003, *Electromagnetic compatibility (EMC) — Product family standard for machine-tools — Part 2: Immunity* **A1**

**A1** EN 60204-1:2006 **A1**, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements* **A1** (IEC 60204-1:2005, modified) **A1**

**A1** EN 60439-1:1999, *Low-voltage switchgear and controlgear assemblies — Part 1: Type-tested and partially type-tested assemblies (IEC 60439-1:1999)* **A1**

EN 60529, *Degree of protection provided by enclosures (IP code) (IEC 60529:1989)*

**A1** EN 60825-1:2007, *Safety of laser products — Part 1: Equipment classification and requirements (IEC 60825-1:2007)* **A1**

**A1** EN 60497-4-1:2001 **A1**, *Low voltage switchgear and control gear — Part 4: Contactors and motor starters - Section 1: Electromechanical contactors and motor starters* **A1** (IEC 60947-4-1:2000) **A1**

**A1** EN 60947-5-1:2004 **A1**, *Low voltage switchgear and control gear — Part 5: Control circuit devices and switching elements Section 1: Electromechanical control circuit devices* **A1** (IEC 60947-5-1:2003) **A1**

**A1** EN 61029-1:2000 **A1**, *Safety of transportable motor operated electric tools — Part 1: General requirements* **A1** (IEC 61029-1:1990, modified) **A1**

**A1** EN 61310-1:2008, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals (IEC 61310-1:2007)* **A1**

EN ISO 3743-1, *Acoustics — Determination of sound power levels of noise sources — Engineering methods for small, moveable sources in reverberant fields — Part 1: Comparison method for hard walled test rooms (ISO 3743-1:1994)*

EN ISO 3743-2, **A1** *Acoustics — Determination of sound power levels of noise sources using sound pressure*

— *Engineering methods for small, movable sources in reverberant fields — Part 2: Methods for special reverberation test rooms (ISO 3743-2:1994)* <sup>(A1)</sup>

EN ISO 3744, <sup>(A1)</sup> *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane (ISO 3744:1994)* <sup>(A1)</sup>

<sup>(A1)</sup> EN ISO 3745:2003, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Precision methods for anechoic and semi-anechoic rooms (ISO 3745:2003)* <sup>(A1)</sup>

EN ISO 3746:1995, <sup>(A1)</sup> *Acoustics — Determination of sound power levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:1995)* <sup>(A1)</sup>

EN ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 9614-1, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurements at discrete points (ISO 9614-1:1993)*

EN ISO 11202:1995, <sup>(A1)</sup> *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Survey method in situ (ISO 11202:1995)* <sup>(A1)</sup>

EN ISO 11204:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a workstation and at other specified positions — Method requiring environmental corrections (ISO 11204:1995)*

EN ISO 11688-1, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

<sup>(A1)</sup> EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology and methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)* <sup>(A1)</sup>

<sup>(A1)</sup> EN ISO 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)* <sup>(A1)</sup>

<sup>(A1)</sup> EN ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)* <sup>(A1)</sup>

<sup>(A1)</sup> *deleted text* <sup>(A1)</sup>

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

<sup>(A1)</sup> HD 21.1 S4:2002, *Cables of rated voltages up to and including 450/750 V and having thermoplastic insulation — Part 1: General requirements* <sup>(A1)</sup>

<sup>(A1)</sup> HD 22.1 S4:2002, *Cables of rated voltages up to and including 450/750 V and having cross-linked insulation — Part 1: General requirements* <sup>(A1)</sup>

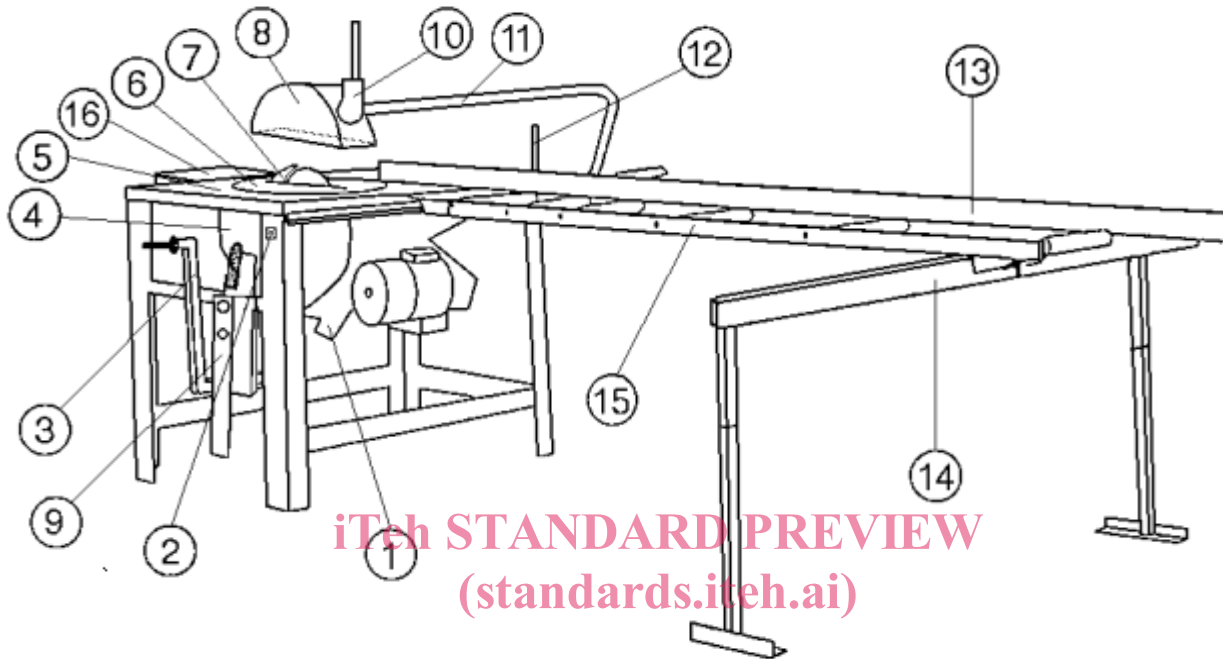
<sup>(A1)</sup> HD 22.4 S4:2004, *Cables of rated voltages up to and including 450/750 V and having crosslinked insulation — Part 4: Cords and flexible cables* <sup>(A1)</sup>

### 3 Terms and definitions

For the purposes of this European Standard the following terms and definitions apply.

#### 3.1 Terms

The main parts of the machine and their terminology are illustrated in Figure 1.



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Key	
1	Under table extraction point
2	Controls
3	Elevation arm
4	Fixed guard beneath table
5	Table
6	Rotating part of table
7	Riving knife
8	Saw blade guard
9	Push stick
10	Saw blade guard exhaust outlet
11	Saw guard support
12	Moveable roller table locking clamp
13	Rip- and cross-cut fence
14	Moveable roller table support
15	Moveable roller table
16	Extension table

**Figure 1 — Terminology**

#### 3.2 Definitions

##### 3.2.1

##### **circular saw bench/up-cutting cross-cut sawing machine**

circular sawing machine with a single saw blade. The saw blade spindle has one fixed rotational speed. The saw unit is situated below the workpiece support (table) and the machine may be used in three modes:

- a) for ripping, with the saw blade set parallel to the fence. The workpiece is fed manually or by a demountable power feed (see Figure 2); or
- b) for cross-cutting, with the saw unit set at 90° to the fence. The workpiece is fed manually by use of a sliding infeed table which moves at 90° to the fence (see Figure 3); or
- c) for cross cutting where the saw unit is raised manually e.g. by a hand lever, to cut through the stationary workpiece (see Figure 4)

In addition, in each mode the saw unit may be tilted about the horizontal axis of the saw spindle to produce an angled cut on the workpiece. In the cross-cutting modes the saw unit can be additionally rotated about a vertical axis to produce a bevelled cut.

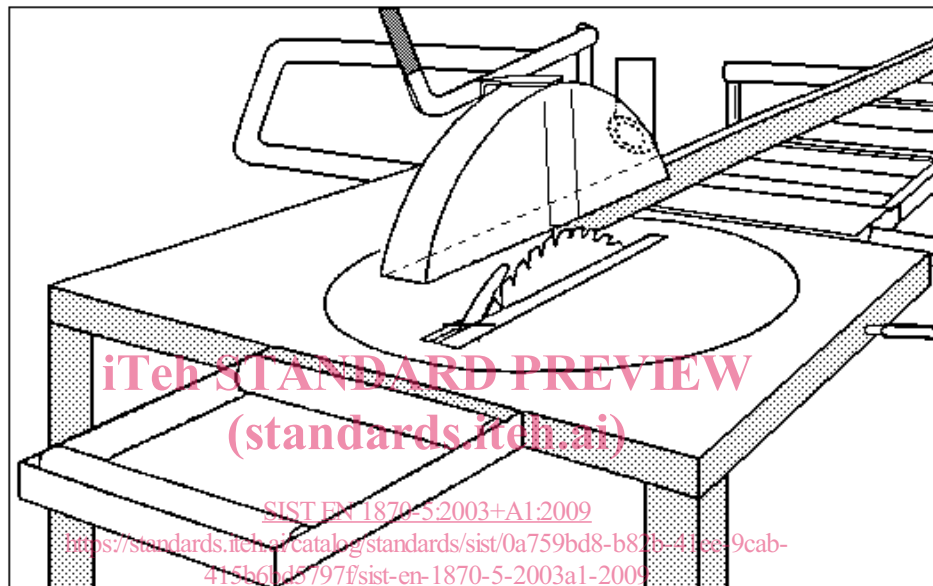


Figure 2 — Example of a machine in the ripping mode

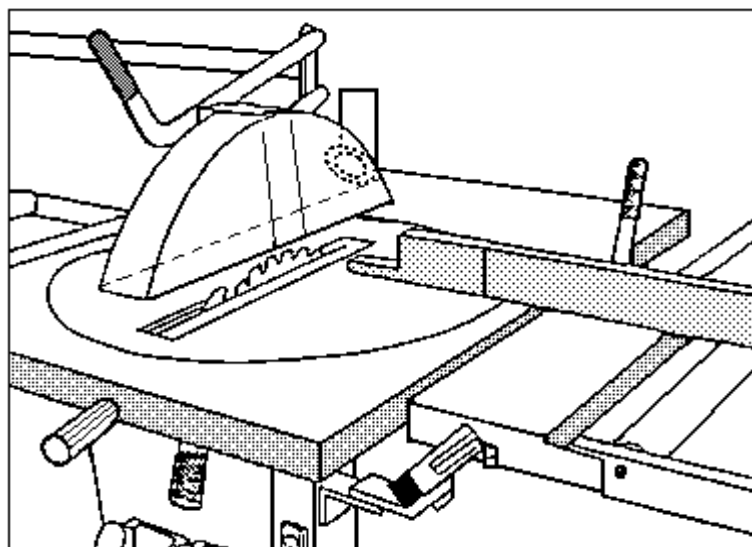
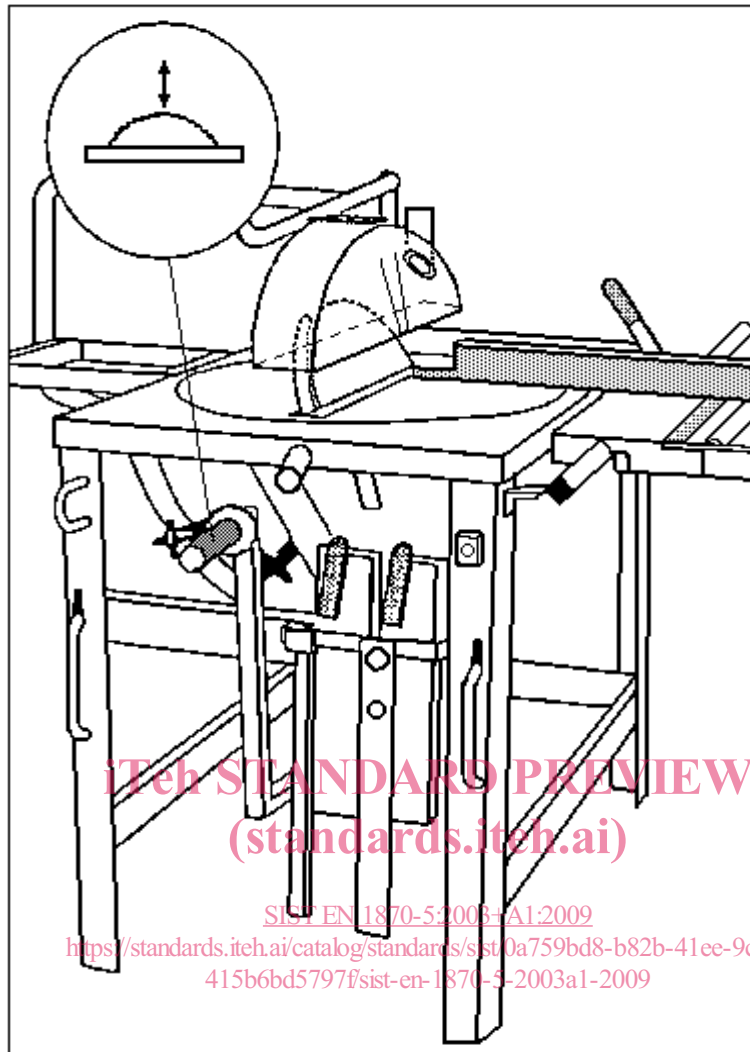


Figure 3 — Example of a machine in the cross-cutting mode with moved workpiece



**Figure 4 — Example of a machine in the cross-cutting mode with stationary workpiece**

### 3.2.2

#### **infeed table**

additional table at the infeed of the machine, used as:

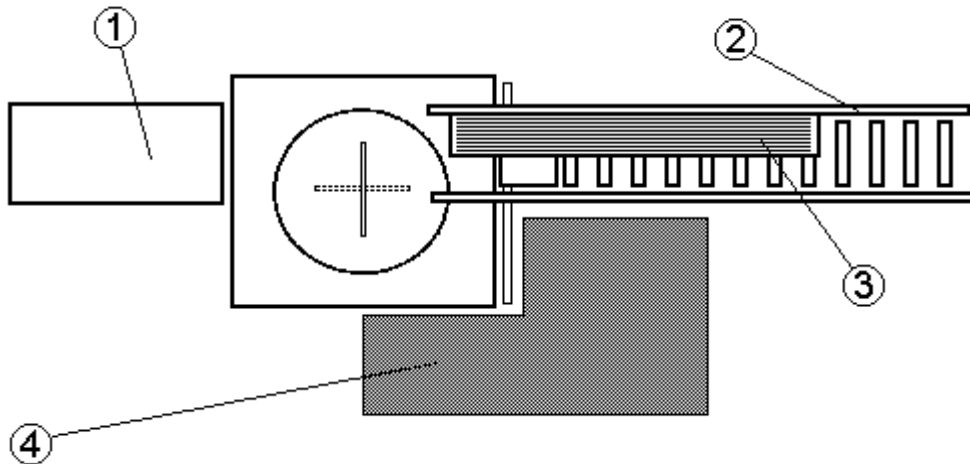
- a support for the rip fence and to facilitate feeding the workpiece for ripping during use of the machine as a circular saw bench;
- a sliding table for cross-cutting with the saw blade unit in a fixed position;
- additional fixed position workpiece support during use of the machine as an up-cutting cross-cut sawing machine

### 3.2.3

#### **operator position**

that area occupied by the operator for use in the bench sawing mode and for use in both cross-cut sawing modes, as shown in Figure 5

Plan view of machine



<b>Key</b>	1	Outfeed table
	2	Infeed table
	3	Workpiece
	4	Operating area for ripping and cross-cutting modes

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 Figure 5 — Operating position  
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### 3.2.4

**displaceable machine** <sup>(A1)</sup>

machine which is located on the floor, stationary during use and equipped with a device, normally wheels, which allows it to be moved between locations

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### 3.2.5

**machine actuator**

power mechanism used to effect motion of the machine

### 3.2.6

**hand feed**

manual holding and/or manual guiding of the workpiece (or of a machine element incorporating a tool). Hand feed includes the use of a hand operated carriage on which the workpiece is placed manually or clamped, and the use of a demountable power feed unit

NOTE The words in brackets are not applicable to this machine.

### 3.2.7

**demountable power feed unit**

feed mechanism which is mounted on the machine so that it can be moved from the working position without the use of a spanner or similar additional device

### 3.2.8

**ejection**

unexpected movement of the workpiece or parts of it or part of the machine from the machine during processing

### 3.2.9

**kickback**

particular form of ejection and is describing the unexpected movement of the workpiece or parts of it or parts of the machine opposite to the direction of feed during processing