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Varnost lesnoobdelovalnih strojev - Krožne žage - 5. del: Krožne žage z delovno mizo/krožne žage za prečni rez od spodaj navzgor (z dopnili do vključno A2)

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 scie circulaires - Partie 5: Scies circulaires combinées à table et à coupe transversale ascendante

Ta slovenski standard je istoveten z: EN 1870-5:2002+A2:2012

ICS:

25.080.60	Strojne žage	Sawing machines
79.120.10	Lesnoobdelovalni stroji	Woodworking machines

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NORME EUROPÉENNE
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English Version

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

Sécurité des machines pour le travail du bois - Machines à
scie 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 and Amendment 2 approved by CEN on 27 July 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN 1870-5:2002+A2:2012 (E)

Foreword

This document (EN 1870-5:2002+A2:2012) has been prepared by Technical Committee CEN/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 2013, and conflicting national standards shall be withdrawn at the latest by March 2013.

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 and Amendment 2, approved by CEN on 2012-07-27.

This document supersedes ^{A2} EN 1870-5:2002+A1:2009 ^{A2}.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ^{A1} ^{A1} and ^{A2} ^{A2}.

^{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.

^{A2} For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document. ^{A2} ^{A1}

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

^{A2} Annexes A, B, C, D, E, F, G and H are normative and Annex ZA is informative. ^{A2}

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

^{A2} *deleted text* ^{A2}

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) ^{A1}

^{A2} *Part 18: Dimension saws*

Part 19: Circular saw benches (with and without sliding table) and building site saws ^{A2}

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 ^{A2} EN ISO 12100:2010 ^{A2} 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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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0 Introduction

This [A2] document [A2] 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 [A2] document [A2] is a type “C” standard as defined in [A2] EN ISO 12100:2010 [A2].

[A2] The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of other standards, for machines that have been designed and built in accordance with the requirements of the provisions of this type C standard. [A2]

The extent to which hazards are covered is indicated in the scope of this [A2] document [A2].

The requirements of this [A2] document [A2] concern designers, manufacturers, suppliers and importers of circular saw benches/up-cutting cross-cut sawing machines. [A2] It is also useful for designers. [A2]

This [A2] document [A2] also includes information to be provided by the manufacturer to the user.

Common requirements for tooling are given in [A2] EN 847-1:2005+A1:2007 [A2].

Electrically driven machines excluded by the scope of this [A2] document [A2] are covered by the requirements of [A2] EN 61029-1:2009 [A2].

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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 ^{A2} if (where) ^{A2} they are covered with plastic edging and/or plastic/light alloy laminates ^{A2} when they are used as intended and under the conditions foreseen by the manufacturer including reasonably foreseeable misuse ^{A2}. ^{A1}

This ^{A2} document ^{A2} 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}

^{A2} This document is not applicable to machines which are manufactured before the date of issue of this EN. ^{A2}

^{A1} NOTE 3 ^{A1} Circular saw benches are dealt with in ^{A2} prEN 1870-19:2011 ^{A2}.

^{A2} NOTE 4 Machines covered by this document are listed under 1.1 of Annex IV of the Machinery Directive. ^{A2}

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} ^{A2} EN 614-1:2006+A1:2009 ^{A2}, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles* ^{A1}

^{A1} ^{A2} EN 847-1:2005+A1:2007 ^{A2}, *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular saw blades* ^{A1}

^{A1} ^{A2} EN 894-1:1997+A1:2008 ^{A2}, *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*

^{A2} EN 894-2:1997+A1:2008 ^{A2}, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 2: Displays*

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A2 EN 894-3:2000+A1:2008 **A2**, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 3: Control actuators* **A1**

A1 deleted text **A1**

A2 deleted text **A2**

A1 **A2** EN 1005-1:2001+A1:2008 **A2**, *Safety of machinery — Human physical performance — Part 1: Terms and definitions*

A2 EN 1005-2:2003+A1:2008 **A2**, *Safety of machinery — Human physical performance — Part 2: Manual handling of machinery and component parts of machinery*

A2 EN 1005-3:2002+A1:2008 **A2**, *Safety of machinery — Human physical performance — Part 3: Recommended force limits for machinery operation*

A2 EN 1005-4:2005+A1:2008 **A2**, *Safety of machinery — Human physical performance — Part 4: Evaluation of working postures and movements in relation to machinery*

A2 EN 1037:1995+A1:2008 **A2**, *Safety of machinery — Prevention of unexpected start-up* **A1**

A2 EN 1088:1995+A2:2008 **A2**, *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 60439-1:1999¹⁾, *Low-voltage switchgear and controlgear assemblies — Part 1: Type-tested and partially type-tested assemblies (IEC 60439-1:1999)* **A1**

EN 60529²⁾, *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 60947-4-1:2001 **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**

A2 EN 61029-1:2009 **A2**, *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**

1) **A2** EN 60439-1:1999 is impacted by EN 60439-1:1999/A1:2004. **A2**

2) **A2** EN 60529:1991 is impacted by EN 60529:1991/A1:2000. **A2**

EN 61800-5-2:2007, *Adjustable speed electrical power drive systems — Part 5-2: Safety requirements — Functional* (IEC 61800-5-2:2007)

EN ISO 3743-1:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for small movable sources in reverberant fields — Part 1: Comparison method for a hard-walled test room* (ISO 3743-1:2010)

EN ISO 3743-2:2009, *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)

EN ISO 3744:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane* (ISO 3744:2010)

EN ISO 3745:2009³⁾, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Precision methods for anechoic and semi-anechoic rooms* (ISO 3745:2003)

EN ISO 3746:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane* (ISO 3746:2010)

EN ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components* (ISO 4413:2010)

EN ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components* (ISO 4414:2010)

EN ISO 4871:2009, *Acoustics — Declaration and verification of noise emission values of machinery and equipment* (ISO 4871:1996)

EN ISO 9614-1:2009, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurements at discrete points* (ISO 9614-1:1993)

EN ISO 11202:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections* (ISO 11202:2010)

EN ISO 11204:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections* (ISO 11204:2010)

EN ISO 11688-1:2009, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning* (ISO/TR 11688-1:1995)

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

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

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

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³⁾ EN ISO 3745:2009 is replaced by EN ISO 3745:2012.

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

Ⓐ¹ HD 21.1 S4:2002, *Cables of rated voltages up to and including 450/750 V and having thermoplastic insulation — Part 1: General requirements* Ⓐ¹

Ⓐ¹ 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* Ⓐ¹

Ⓐ¹ HD 22.4 S4:2004⁴), *Cables of rated voltages up to and including 450/750 V and having crosslinked insulation — Part 4: Cords and flexible cables* Ⓐ¹

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⁴) Ⓐ² HD 22.4 S4:2004 is superseded by EN 50525-2-21:2011, *Electric cables — Low voltage energy cables of rated voltages up to and including 450/750 V (U_o/U) — Part 2-21: Cables for general applications — Flexible cables with crosslinked elastomeric insulation*. Ⓐ²

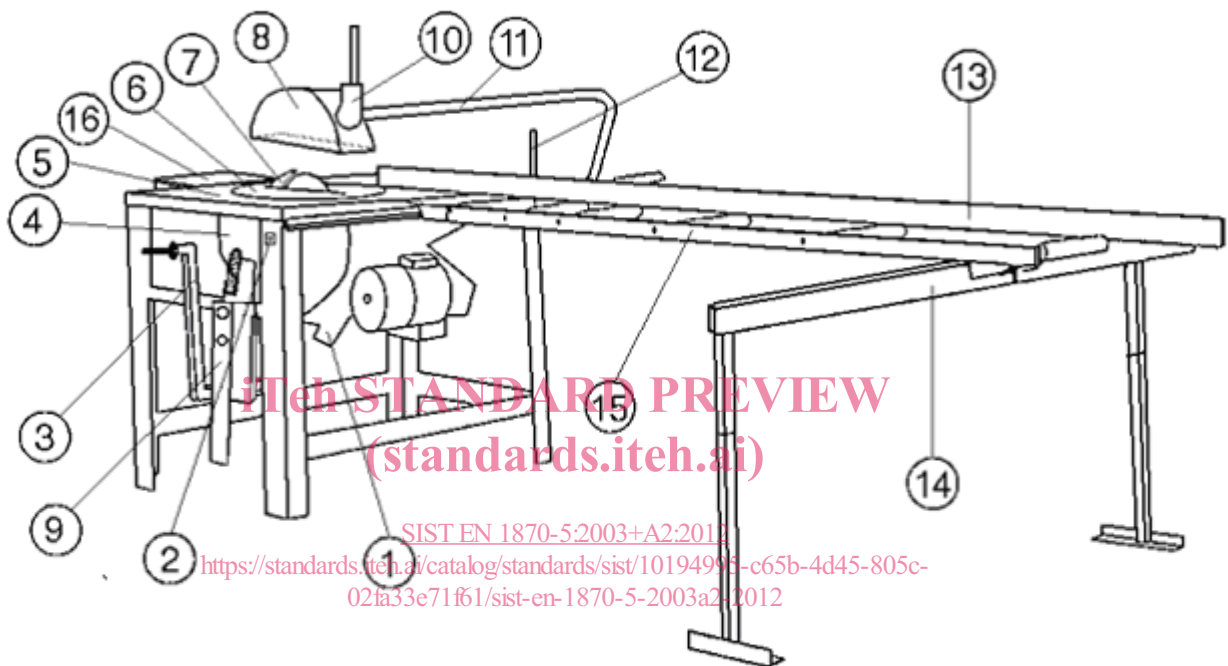
3 Terms and definitions

3.1 General

For the purposes of this A_2 document A_2 the following terms and definitions apply.

3.2 Terms

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



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

3.3 Definitions

3.3.1

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

circular sawing machine with a single saw blade and one fixed rotational speed

NOTE The saw unit is situated below the workpiece support (table) and the machine may be used in three modes:

- 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
- 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
- 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.

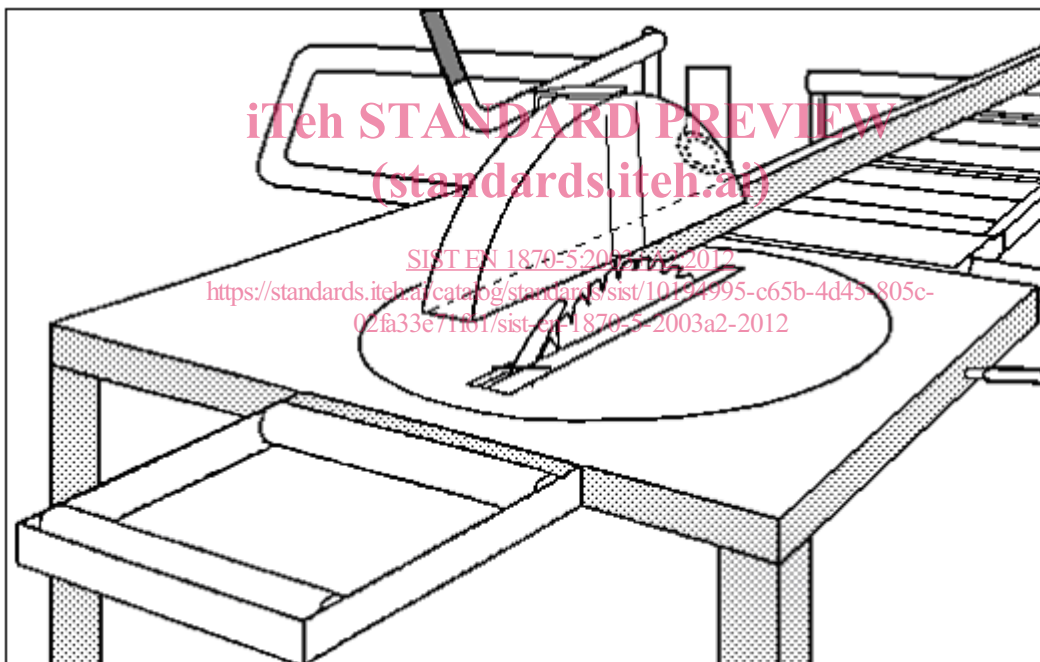


Figure 2 — Example of a machine in the ripping mode

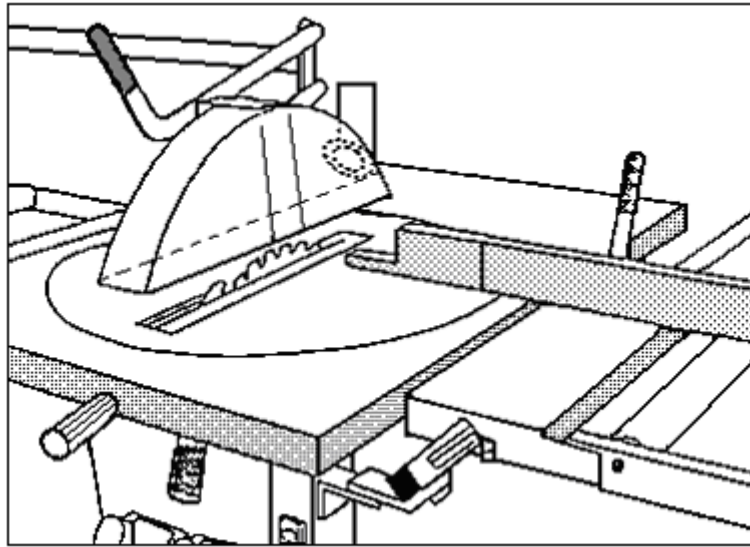


Figure 3 — Example of a machine in the cross-cutting mode with moved workpiece

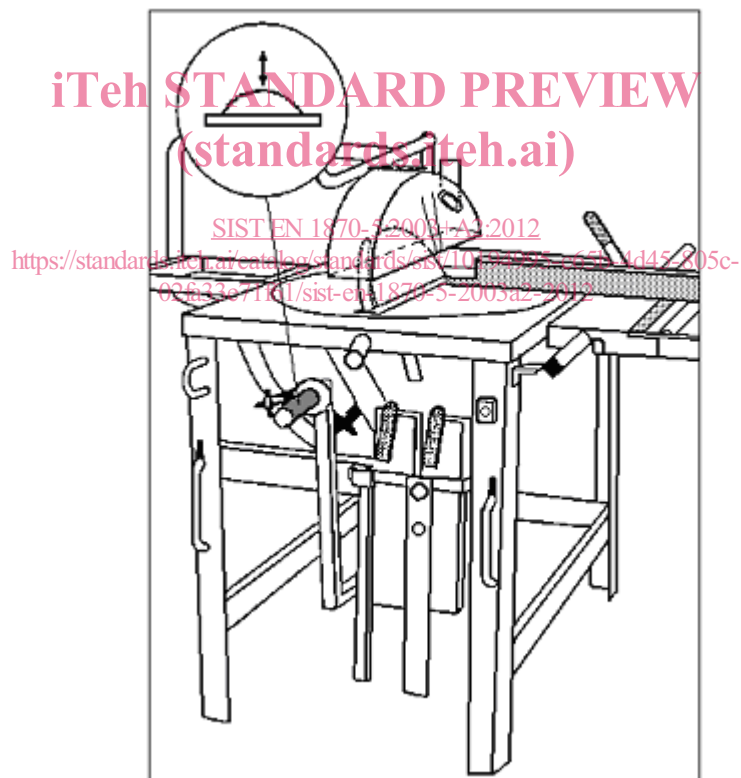


Figure 4 — Example of a machine in the cross-cutting mode with stationary workpiece

A₂ 3.3.2 **A₂**
infeed table

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

- a) a support for the rip fence and to facilitate feeding the workpiece for ripping during use of the machine as a circular saw bench;