



SLOVENSKI STANDARD
oSIST prEN 1807-1:2009
01-junij-2009

Varnost lesnoobdelovalnih strojev - Tračne žage - 1. del: Namizne tračne žage in žage za rezanje desk

Safety of woodworking machines - Band sawing machines - Part 1: Table band saws and band re-saws

Sicherheit von Holzbearbeitungsmaschinen - Bandsägemaschinen - Teil 1: Tischbandsägemaschinen und Trennbandsägemaschinen

Sécurité des machines pour le travail du bois - Scies à ruban - Partie 1: Scies à ruban à table et scies à refendre

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ICS:

25.080.60	Strojne žage	Sawing machines
79.120.10	Lesnoobdelovalni stroji	Woodworking machines

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EUROPEAN STANDARD
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Safety of woodworking machines - Band sawing machines - Part 1: Table band saws and band re-saws

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Sicherheit von Holzbearbeitungsmaschinen -
Bandsägemaschinen - Teil 1: Tischbandsägemaschinen
und Trennbandsägemaschinen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 142.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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Foreword

This document (prEN 1807-1:2009) has been prepared by Technical Committee CEN/TC 142 "Woodworking machines - Safety", the secretariat of which is held by UNI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1807:1999.

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 and Out Door Noise Directive.

For relationship with EU Directives, see informative Annexes ZA and ZB, which are integral parts of this document.

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

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).

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Introduction

This document has been prepared to be a harmonized standard to provide one means of conforming to the essential safety requirements of the Machinery Directive and associated EFTA regulations. This document is a type "C" standard as defined in EN ISO 12100-1:2003.

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 according to the provisions of this type C standard.

The requirements of this document are directed to manufacturers and their authorized representatives of table band saws and band re-saws. They are also useful for designers.

This document also includes provisions and examples of information to be provided by the manufacturer to the user.

1 Scope

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This document deals with the significant hazards, hazardous situations and events as listed in Clause 4 which are relevant to stationary and displaceable table band sawing machines and band re-saws with manual loading and/or unloading, hereinafter referred to as "machines", designed to cut solid wood, chipboard, fibreboard, plywood, and also these materials if they are covered with plastic edging and/or plastic/light alloy laminates, when they are used as intended and under the conditions foreseen by the manufacturer.

This European Standard does not apply to:

- a) Transportable machines, i.e. machines set up on a bench or a table similar to a bench, which are intended to carry out work in a stationary position, capable of being lifted by one person by hand. The bench can also be an integrated part of the machine if it consists of hinged legs which can be extended down;

NOTE 1 Transportable electrically driven machines are covered by the requirements of EN 61029-1:2000 together with prEN 61029-2-5:2001

- b) hand held motor-operated electric tools including any adaptation permitting their use in a different mode, i.e. bench mounting.

NOTE 2 hand-held motor-operated electric tools are covered by the requirements of EN 60745-1:2006 together with EN 60745-2-20:2003

- c) log band saws

NOTE 3 log band saws are covered by prEN 1807-2:2008.

This document does not deal with the specific hazards related to thermal engine and P.T.O. equipment fitted to the machine.

This document is not applicable to band sawing machines which are manufactured before the date of its publication as EN.

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NOTE 4 Machines covered by this document are listed under A.4 of Annex IV of the Machinery Directive.

2 Normative references

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.

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

EN 349:1993, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

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

EN 894-1:1997, *Safety of machinery — Ergonomics requirements for the design of display 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 display and control actuators — Part 2: Displays*

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

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

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

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 machines 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 in relation to machinery*

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

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

EN 1760-1:1996, *Safety of machinery — Pressure sensitive protective devices Part 1: General principles for the design and testing of pressure sensitive mats and pressure sensitive floors*

EN 50178:1997, *Electronic equipment for use in power installations*

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*

- EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*
- EN 60439-1:1999, *Low voltage switchgear and control gear assemblies — Part 1: Type tested and partially type tested assemblies (IEC 60439-1:1999)*
- EN 60529:1991, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*
- EN 60825-1:1994, *Safety of laser products — Equipment classification, requirements and user's guide (IEC 60825-1:1993)*
- EN 61310-1:1995, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:1995)*
- EN 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2004, modified)*
- CEN/TS 61496-2:2006, *Safety of machinery — Electro-sensitive protective equipment Part 2 : Particular requirements for equipment using active opto-electronic protective devices (IEC 61496-2:2006)*
- EN 61508-3:2001, *Functional safety of electrical/electronic/programmable electronic safety-related systems — Part 3: Software requirements (IEC 61508-3:1998 + Corrigendum 1999)*
- EN 62061:2005, *Safety of machinery — Functional safety of safety-related electrical, electronic and programmable control systems (IEC 62061:2005)*
- EN ISO 3743-1:1995, *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 3743-2:1996, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering methods for small, moveable sources in reverberant fields — Part 2: Methods for special reverberation test rooms (ISO 3743-2:1994)*
- EN ISO 3744:1995, *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)*
- 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)*
- EN ISO 3746:1995, *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)*
- EN ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*
- EN ISO 9614-1:1995, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points (ISO 9614-1:1993)*
- EN ISO 11202:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a workstation and at other specified positions (ISO 11202:1995)*
- 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 11688-1:1998, *Acoustics — Recommended practice for the design of low noise machinery and equipment — Part I: Planning (ISO/TR 11688- 1:1995)*

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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)*

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

EN ISO 13849-2:2003, *Safety of machinery — Safety-related parts of controls systems — Part 2: Validation (ISO 13849-2:2003)*

EN ISO 13850:2006, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*

ISO 1940-1:1996, *Mechanical vibration — Balance quality requirements of rigid rotors Part 1 : Determination of permissible residual unbalance*

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

HD 22.4 S4:2004, *Cables of rated voltages up to and including 450/750 V — Part 4: Cords and flexible cables*

3 Terms and definitions**3.1 General**

For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply.

3.2 Definitions**3.2.1****band sawing machine**

a sawing machine with one or more saw blades in the form of continuous bands each mounted on and running between two or more band wheels

3.2.2**saw blade straining**

force exerted on the saw blade to keep it in position on the band wheels during cutting (see Figure 10)

3.2.3**saw blade tensioning**

process used to form the cross-section of the saw blade, either by rolling or hammering, in order to ensure that the front and back edges of the saw blade grip the band wheels

3.2.4**saw blade tracking**

means used to maintain the position of the saw blade on the band wheels (see Figure 11)

3.2.5**table band saw**

hand fed band sawing machine with a fixed or tilting table (bed) or tilting frame (see Figures 1, 3 and 4).

The machine may have any of the following accessory attachments: firewood support; demountable power feed unit for re-sawing.

3.2.6**band re-saw**

band sawing machine with integrated feed used for secondary conversion of solid wood (see Figures 2, 5 and 6)

3.2.7**manual control**

situation where each process movement is initiated by the operator

3.2.8**machine actuator**

power mechanism used to effect motion of the machine

3.2.9**hand feed**

manual holding and/or guiding of the workpiece. 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

3.2.10**demountable power feed unit**

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

3.2.11**integrated feed**

feed mechanism for the workpiece or band saw blade which is integrated with the machine and where the workpiece or machine element with incorporated band saw blade are held and controlled mechanically during the machining operation

3.2.12**run-up time**

elapsed time from the actuation of the start control device until the driven band wheel reaches the intended speed

3.2.13**run-down time**

elapsed time from the actuation of the stop control device until driven band wheel standstill

3.2.14**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, travelling table or reciprocating carriage; i.e. for which there is no intermediate loading device to receive and transfer the workpiece from the operator to the integrated feed

3.2.15**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

3.2.16**cutting area**

area where the saw blade can be involved in the cutting process

3.2.17**non-cutting area**

area where the saw blade is not involved in the cutting process

prEN 1807-1:2009 (E)**3.2.18****displaceable machine**

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

3.2.19**stationary machine**

machine designed to be located on or fixed to the floor or other parts of the structure of the premises and to be stationary during use

3.2.20**information of the supplier**

statements, sales literature, leaflets or other documents, where the manufacturer (or supplier) declares either the characteristics or the compliance of the material or product to a relevant standard

3.2.21**safety programmable logic controller (PLC)**

programmable logic controller dedicated to safety related application designed in the required category according to EN ISO 13849-1:2006

3.2.22**safety related electrical control system (SRECS)**

electrical part of a control system whose failure can result in an immediate increase of the risk(s) (3.4 of EN 62061:2005)

3.2.23**embedded software**

software that is part of the system supplied by the manufacturer that is not normally accessible for modification

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NOTE 1 Firmware or system software are synonymous with embedded software (see 3.2.47 of EN 62061: 2005).

NOTE 2 Manufacturer means manufacturer of the system.

NOTE 3 For Example the operating system of a speed monitoring device.

3.2.24**application software**

software specific to the application that is specifically implemented by the designer of the SRECS generally containing logic sequences, limits and expressions that control the appropriate inputs, outputs, calculations and decisions necessary to meet SRECS functional requirements (see 3.2.46 of EN 62061:2005)

NOTE For Example the PLC program to run a machine.

3.2.25**irregular shaped workpiece**

a workpiece with no even surface for stable guiding on the saw table, e.g. firewood.

3.3 Terminology

The names of the main parts of the machines are shown in Figures 1 to 6 and Tables 1 and 2.

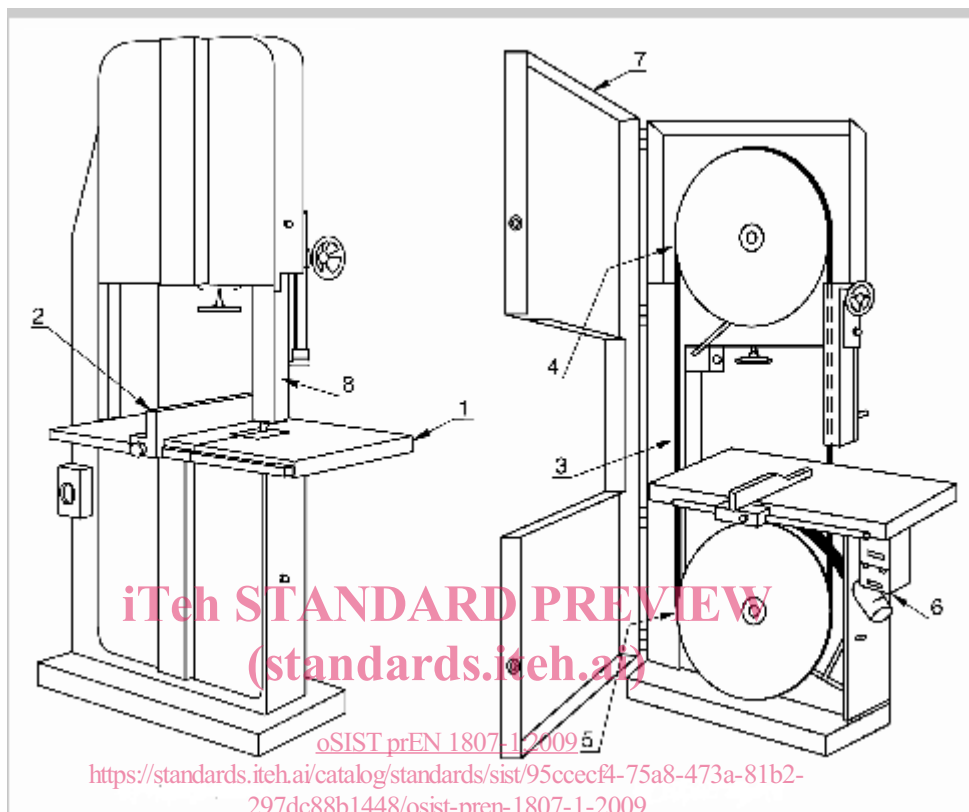


Figure 1 — Hand fed table band saw

Table 1 — Terminology for table band saw

1	Table
2	Adjustable fence
3	Band saw blade
4	Top band wheel
5	Bottom band wheel
6	Start and stop controls
7	Band wheel guard
8	Adjustable guard for saw blade

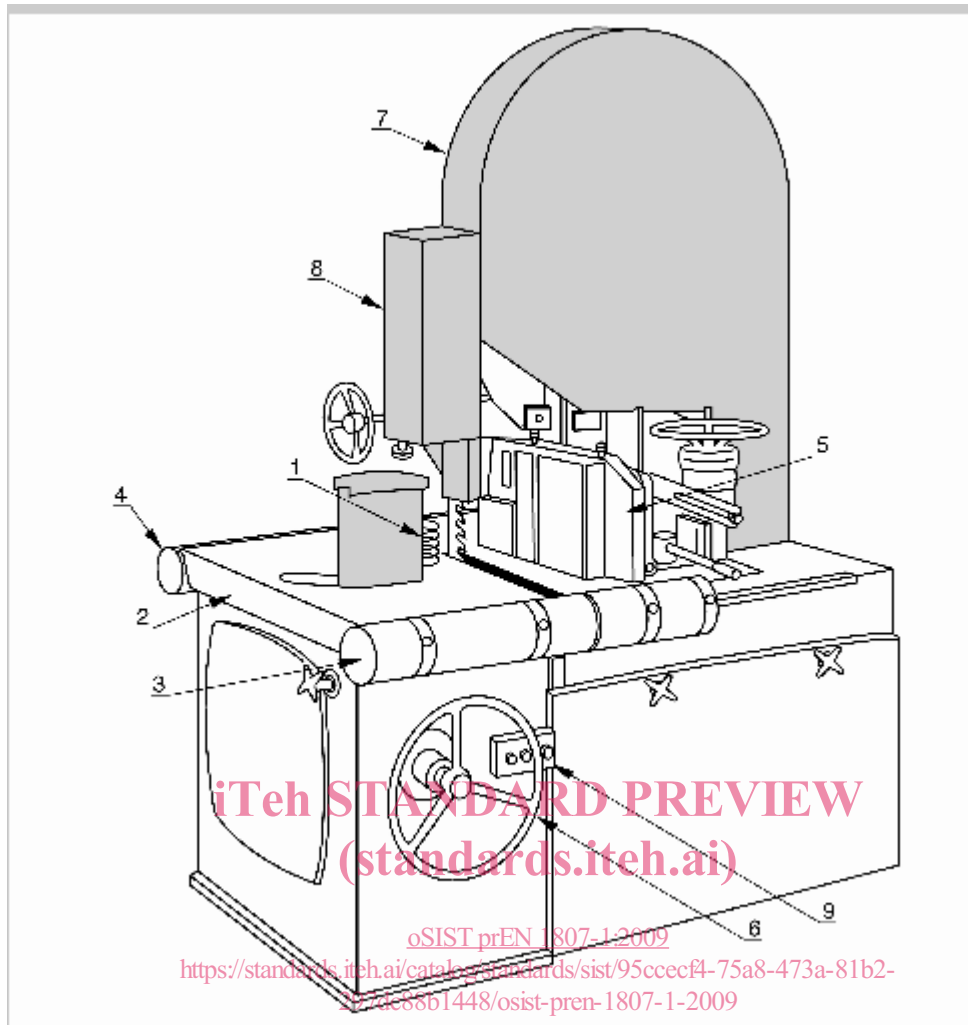


Figure 2 — Band re-saw

Table 2 — Terminology for band re-saw

1	Feed roller
2	Workpiece support (table)
3	Infeed table roller
4	Outfeed table roller
5	Fence
6	Handwheel for adjustment of feed rollers
7	Band wheel guard
8	Adjustable guard for saw blade
9	Start and stop controls

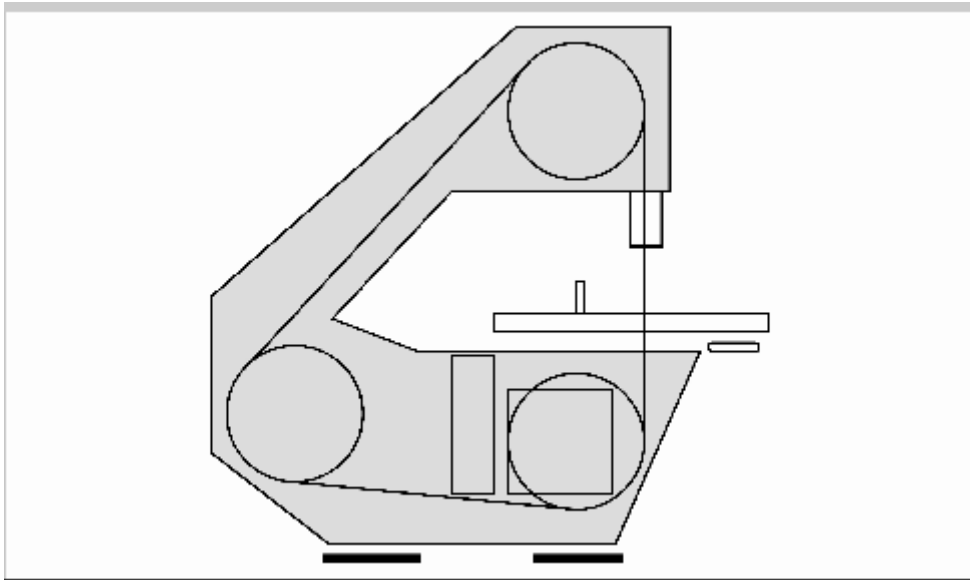


Figure 3 — Hand fed table band saw with three band wheels

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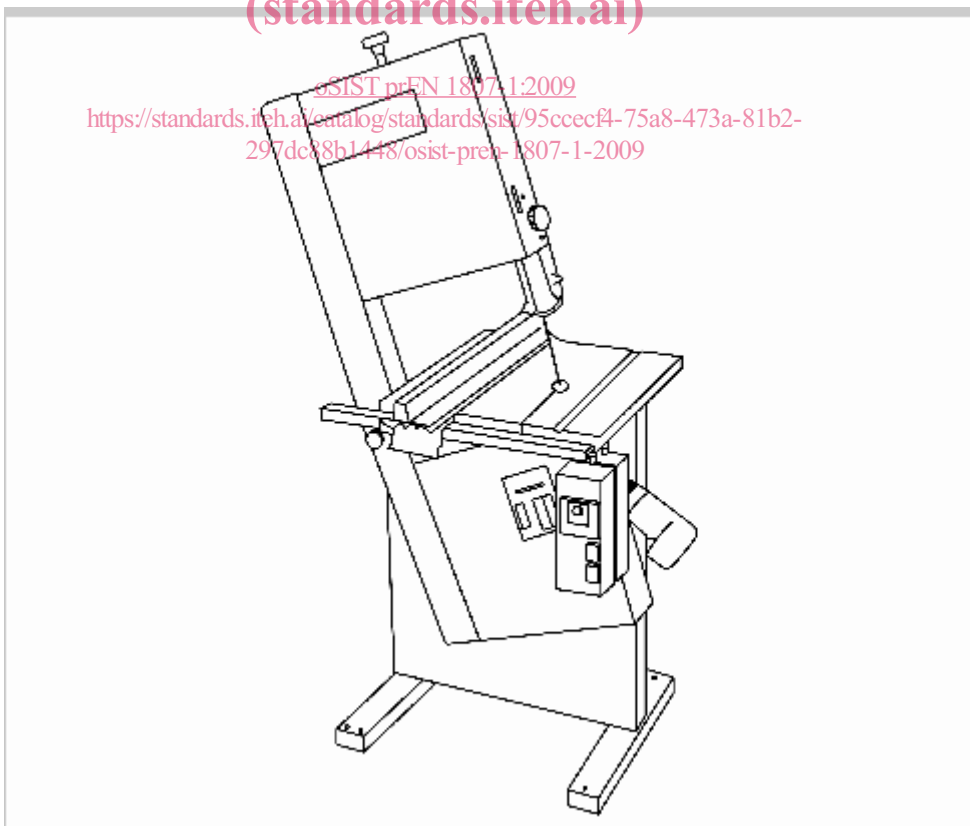


Figure 4 — Hand fed table band saw (tilting saw unit)