



**SLOVENSKI STANDARD**  
**SIST EN 1218-4:2004+A2:2009**  
**01-september-2009**

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Safety of woodworking machines - Tenoning machines - Part 4: Edge banding machines fed by chain(s)

Sicherheit von Holzbearbeitungsmaschinen - Zapfenschneid- und Schlitzmaschinen - Teil 4: Kantenanleimmaschinen mit Kettenbandvorschub

Sécurité des machines pour le travail du bois - Tenonneuses - Partie 4: Machines à plaquer sur chant à chaîne(s)

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**Ta slovenski standard je istoveten z: EN 1218-4:2004+A2:2009**

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**ICS:**

79.120.10      Lesnoobdelovalni stroji      Woodworking machines

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EUROPEAN STANDARD

**EN 1218-4:2004+A2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2009

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**Safety of woodworking machines - Tenoning machines - Part 4:  
Edge banding machines fed by chain(s)**

Sécurité des machines pour le travail du bois -  
Tenonneuses - Partie 4: Machines à plaquer sur chant à  
chaîne(s)

Sicherheit von Holzbearbeitungsmaschinen -  
Zapfenschneid- und Schlitzmaschinen - Teil 4:  
Kantenanleimmaschinen mit Kettenbandvorschub

This European Standard was approved by CEN on 24 March 2004 and includes Amendment 1 approved by CEN on 29 September 2005, Amendment 2 approved by CEN on 21 May 2009 and Corrigendum 1 issued by CEN on 20 December 2006.

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 Management Centre or to any CEN member.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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**EN 1218-4:2004+A2:2009 (E)****Foreword**

This document (EN 1218-4:2004+A2:2009) 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of an identical text or by endorsement, at the latest by December 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document supersedes EN 1218-4:2004.

This European Standard was approved by CEN on 24 March 2004 and includes Corrigendum 1 issued by CEN on 20 December 2006, Amendment 1 approved by CEN on 29 September 2005 and Amendment 2 approved by CEN on 21 May 2009.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A<sub>1</sub>**, **A<sub>1</sub>** and **A<sub>2</sub>**, **A<sub>2</sub>**.

The modifications of the related CEN Corrigendum have been implemented at the appropriate places in the text and are indicated by the tags **AC**, **AC**.

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 EU Directive(s).

**A<sub>2</sub>** For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. **A<sub>2</sub>**

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**A<sub>2</sub>** EN 1218, *Safety of woodworking machines — Tenoning machines* consists of the following parts:

*Part 1: Single end tenoning machines with sliding table*

*Part 2: Double end tenoning and/or profiling machines fed by chain or chains*

*Part 3: Hand fed tenoning machines with sliding table for cutting structural timbers*

*Part 4: Edge banding machines fed by chain(s)*

*Part 5: One side profiling machines with fixed table and feed rollers or fed by chain **A<sub>2</sub>***

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 the 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.

## Introduction

This document 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 document is a type C standard as stated in <sup>A2</sup> EN ISO 12100-1:2003 <sup>A2</sup>.

The machinery concerned and the extent to which hazards, hazardous situations and events 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 C type standard take precedence over the provisions of other standards, for machines that have been designed and built in accordance with the provisions of this type C standard.

The requirements of this document are directed to manufacturers and their authorised representatives of edge banding machines fed by chain(s). It is also useful for designers.

This document also includes examples of information which can be provided by the manufacturer to the user.

Common requirements for tooling are given in <sup>A2</sup> EN 847-1:2005 <sup>A2</sup>.

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**EN 1218-4:2004+A2:2009 (E)****1 Scope**

<sup>A2</sup> This document deals with all the significant hazards, hazardous situations and events as listed in Clause 4 which are relevant to edge banding machines fed by chain(s) where the loading and unloading is manual and where the maximum work-piece height capacity is 75 mm. The machine is designed to process in one pass, one end (single end machine) or both ends (double end machine) of solid wood, chipboard, fibreboard or plywood and also these materials where they are covered with plastic laminate or edgings. The work-piece is fed through the processing units by an integrated feed. For the purpose of this document an edge banding machine fed by chain(s) is hereinafter referred to as the machine. <sup>A2</sup>

<sup>A2</sup> *deleted text* <sup>A2</sup>

This document does not apply to single and double end edge banding machines fed by chain or chains with a complete enclosure as defined in 3.3.10.

This document does not deal with any hazards relating to:

- a) mechanical loading of the work-piece to a single machine; or
- b) single machine being used in combination with any other machine (as part of a line); or
- c) use of tools working between the machine halves (see 3.3.1); or
- d) use of laser.

For Computer Numerically Controlled (CNC) machines this document does not cover hazards related to Electro-Magnetic Compatibility (EMC). [SIST EN 1218-4:2004+A2:2009](https://standards.iteh.ai/catalog/standards/sist/3fbd401f-d115-4f14-b569-)

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NOTE The requirements of this document apply to all machines whatever their method of control e.g. electromechanical and/or electronic.

This document is primarily directed to machines which are manufactured after the date of publication by CEN.

**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.

<sup>A2</sup> *deleted text* <sup>A2</sup>

EN 563:1994, *Safety of machinery — Temperatures of touchable surfaces — Ergonomics data to establish temperature limit values for hot surfaces*

<sup>A2</sup> EN 614-1:2006, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles* <sup>A2</sup>

<sup>A2</sup> EN 847-1:2005, *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular saw blades* <sup>A2</sup>

<sup>A2</sup> 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* <sup>A2</sup>

<sup>A2</sup> deleted text <sup>A2</sup>

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*

<sup>A2</sup> 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* <sup>A2</sup>

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

<sup>A2</sup> deleted text <sup>A2</sup>

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

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EN 1760-2:2001, *Safety of machinery — Pressure sensitive protection devices — Part 2: General principles for the design and testing of pressure sensitive edges and pressure sensitive bars*

EN 1837:1999, *Safety of machinery — Integral lighting of machines*

EN 50144-1:1995, *Safety of hand-held electric motor operated tools — Part 1: General requirements*

<sup>A2</sup> 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* <sup>A2</sup>

<sup>A2</sup> EN 60204-1:2006 <sup>A2</sup>, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements* <sup>A2</sup> (IEC 60204-1:2005, modified) <sup>A2</sup>

<sup>A2</sup> EN 60439-1:1999, *Low-voltage switchgear and controlgear assemblies — Part 1: Type-tested and partially type-tested assemblies (IEC 60439-1:1999)* <sup>A2</sup>

EN 60529:1991, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

<sup>A2</sup> EN 60947-4-1:2001 <sup>A2</sup>, *Low-voltage switchgear and controlgear — Part 4-1: Contactors and motor starters — Electromechanical contactors and motor starters* <sup>A2</sup> (IEC 60947-4-1:2000) <sup>A2</sup>

<sup>A2</sup> EN 60947-5-1:2004 <sup>A2</sup>, *Low-voltage switchgear and controlgear — Part 5-1: Control circuit devices and switching elements — Electromechanical control circuit devices* <sup>A2</sup> (IEC 60947-5-1:2003) <sup>A2</sup>

**EN 1218-4:2004+A2:2009 (E)**

EN 61310-1:2008, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals (IEC 61310-1:2007)* <sup>(A2)</sup>

CLC/TS 61496-2:2006 <sup>(A2)</sup>, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs) (IEC 61496-2:2006)* <sup>(A2)</sup>

EN ISO 354:2003, *Acoustics — Measurement of sound absorption in a reverberation room (ISO 354:2003)*

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 — 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 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, 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 13849-1:2008 *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)* <sup>(A2)</sup>

EN ISO 13850:2008, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)* <sup>(A2)</sup>

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*

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

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

Ⓐ 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* Ⓐ

### 3 Terms and definitions

#### 3.1 General

For the purposes of this document, the terms and definitions given in Ⓐ EN ISO 12100-1:2003 Ⓐ apply. Additional definitions specifically needed for this document are shown in 3.2 and 3.3.

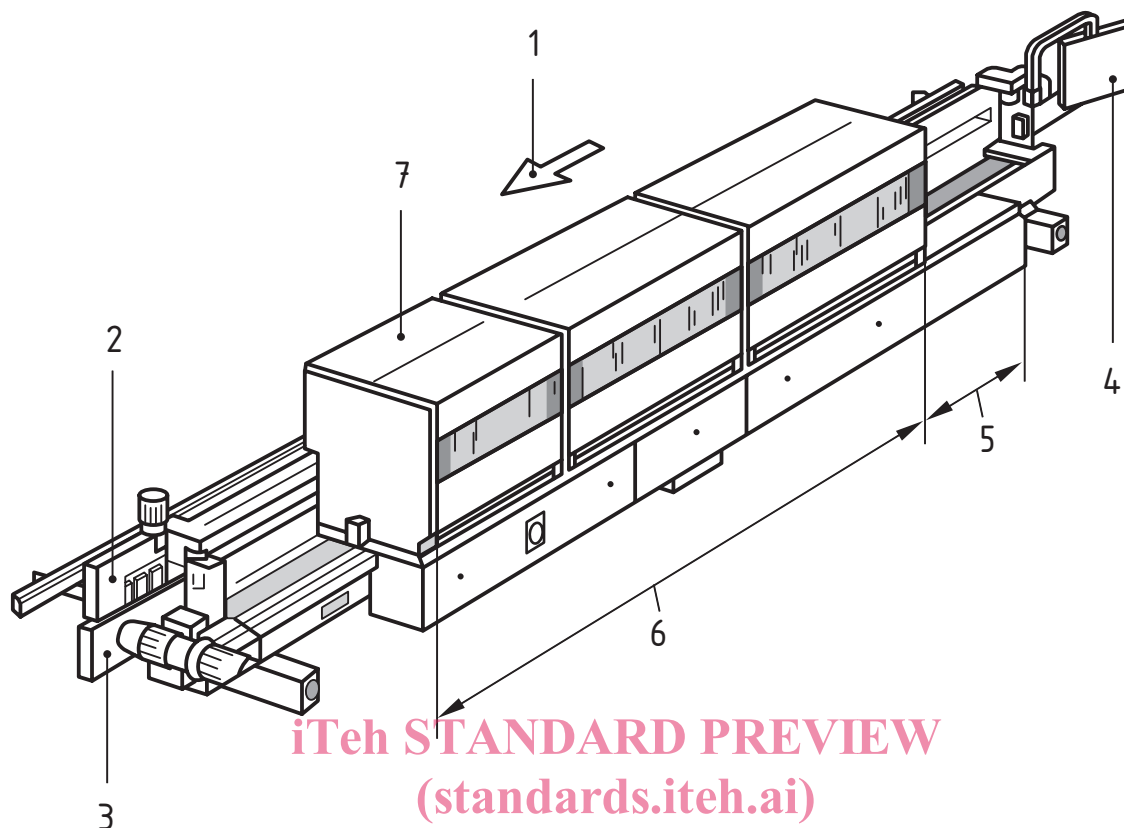
#### 3.2 Terms

The main parts of a single end machine and a double end machine and their terminology are illustrated in Figures 1 and 2.

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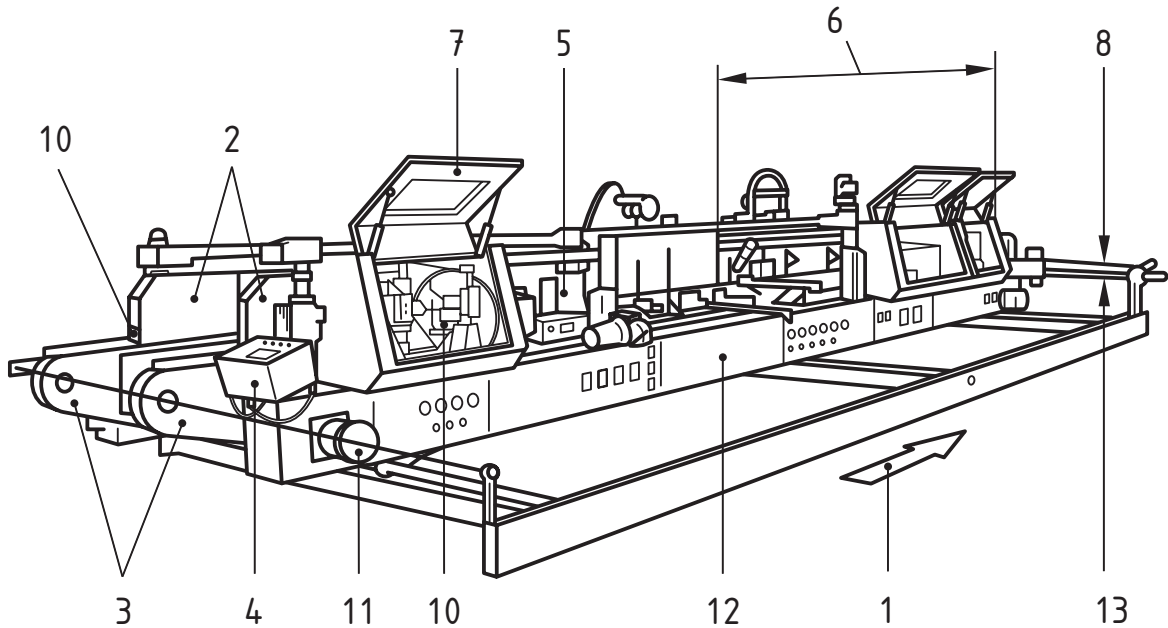
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**Key**

- 1 Feed direction
- 2 Top pressure beam
- 3 Chain beam
- 4 Controls
- 5 Edge banding zone
- 6 Additional operation zone
- 7 Integral enclosure

**Figure 1 — Terminology of a single end machine**

**Key**

- 1 Feed direction
- 2 Top pressure beam
- 3 Chain beam
- 4 Controls
- 5 Edge banding zone
- 6 Additional operation zone
- 7 Integral enclosure
- 8 Trip wire at out feed
- 9 Feed cross drive shaft
- 10 Trip device at in feed
- 11 Device to prevent involuntary access between machine halves  
e.g. trip wire
- 12 Machine halves
- 13 Preceding sizing/milling zone (optional)

**Figure 2 — Terminology of a double end machine**

**3.3 Definitions****3.3.1****edge banding machine fed by chain(s)**

machine designed for bonding in one pass the edge band on one end of the work-piece (single end edge banding machine (see Figure 1)) or on both ends of the work-piece (double end edge banding machine (see Figure 2)), consisting of an edge banding zone with various units e.g. heating, bonding and pressing for flexible or solid edges and of a zone for additional operations such as snipping, trimming, milling, sanding, polishing, chamfering etc. In addition the edge banding zone may be preceded by a sizing/profiling zone

**3.3.2****integrated feed**

feed mechanism for the work-piece or tool which is integrated with the machine and where the work-piece or machine element with incorporated tool are held and controlled mechanically during the machining operation

**3.3.3****ejection**

unexpected movement of the work-piece or parts of it or part of the machine from the machine during processing

## EN 1218-4:2004+A2:2009 (E)

## 3.3.4

**run-up time**

time elapsed from the actuation of the start control device until the spindle reaches the intended speed

## 3.3.5

**run-down time**

time elapsed from the actuation of the stop control device to spindle stand still

## 3.3.6

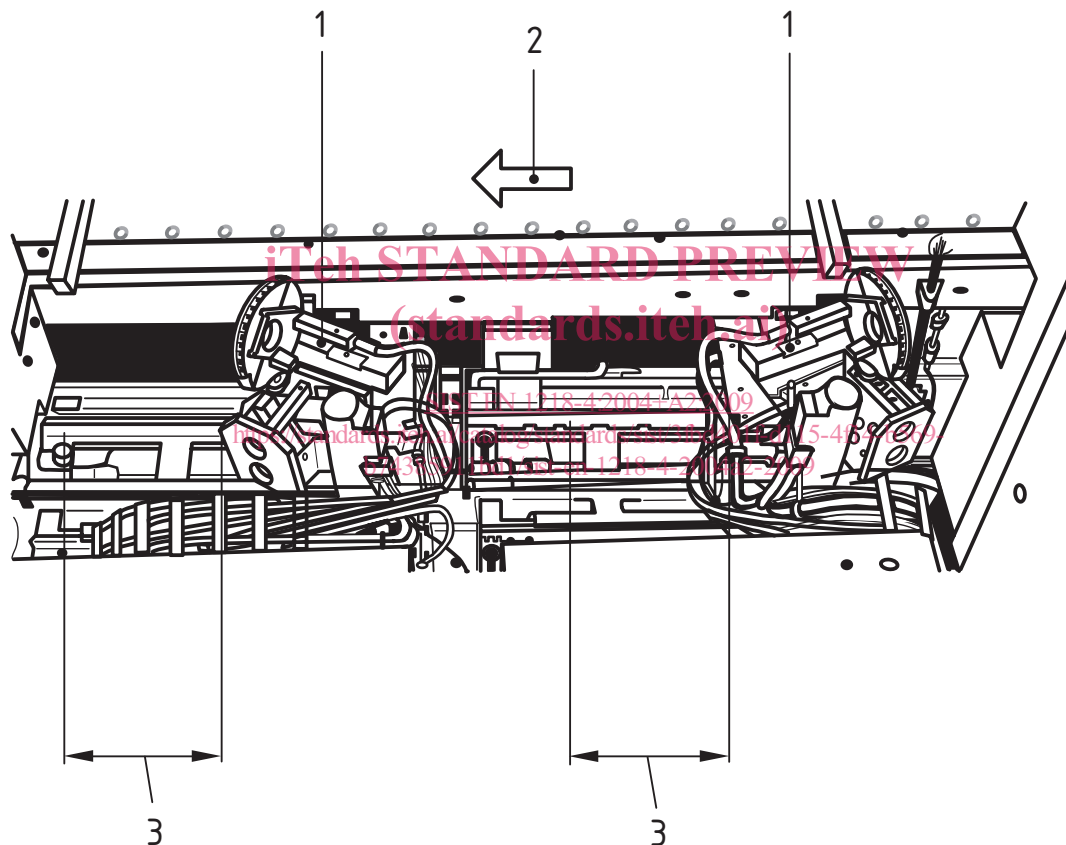
**machine actuator**

power mechanism used to effect the motion of the machine

## 3.3.7

**dynamic processing unit**

unit which moves with the work-piece during processing and returns to its starting position ready for the following (succeeding) work-piece (see Figure 3)

**Key**

- 1 Dynamic processing unit (e.g. sniper saw)
- 2 Feed direction
- 3 Movement zone

**Figure 3 — Example of a dynamic processing unit**

## 3.3.8

**machine half**

part of a machine consisting of a frame, chain beam, top pressure beam and working units. Each machine half processes one, different, end of the work-piece. One or both machine halves move to accept work-pieces of different dimensions

### 3.3.9

#### **integral enclosure (double and single end machines)**

guarding designed to fit close to the machine and provide a measure of sound attenuation and where certain setting adjustments may be available outside the enclosure. Each machine half is provided with separate guarding and on the adjustable machine half/halves this guarding moves with it when adjustment is made for work-piece width

### 3.3.10

#### **complete enclosure**

total machine enclosure primarily designed for noise attenuation and to permit the operator to move around freely within it and where all machine setting and adjustments are available inside it

### 3.3.11

#### **▣<sub>2</sub> displaceable machine ▣<sub>2</sub>**

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

### 3.3.12

#### **▣<sub>2</sub> information from the supplier ▣<sub>2</sub>**

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

## **4 ▣<sub>2</sub> List of significant hazards ▣<sub>2</sub>**

▣<sub>2</sub> This clause contains all the significant hazards, hazardous situations and events (see EN 1050:1996) as far as they are dealt with in this document, 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 Table 1 in accordance with Annex A of EN 1050:1996.