

Toidutöötlemismasinad. Lintsaagimismasinad. Ohutus- ja hügieeninõuded

Food processing machinery - Band saw machines - Safety and hygiene requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12268:2003+A1:2010 sisaldab Euroopa standardi EN 12268:2003+A1:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.08.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 12.05.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 12268:2003+A1:2010 consists of the English text of the European standard EN 12268:2003+A1:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.08.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 12.05.2010.

The standard is available from Estonian standardisation organisation.

ICS 67.260

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: 605 5050; E-mail: info@evs.ee

English Version

Food processing machinery - Band saw machines - Safety and hygiene requirements

Machines pour les produits alimentaires - Scies à ruban -
Prescriptions relatives à la sécurité et à l'hygiène

Nahrungsmittelmaschinen - Bandsägemaschinen -
Sicherheits- und Hygieneanforderungen

This European Standard was approved by CEN on 9 January 2003 and includes Amendment 1 approved by CEN on 9 April 2010.

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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.



CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, 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.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

	page
Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	8
3 Terms and definitions	9
4 List of hazards.....	10
4.1 General.....	10
4.2 Electrical hazards	12
4.3 Hazard from loss of stability.....	12
4.4 Noise hazard.....	12
4.5 Hazards from non-compliance with ergonomic principles	12
4.6 Hazards from non-compliance with hygiene principles	12
5 Safety requirements and/or measures	13
5.1 General.....	13
5.2 Mechanical hazards	13
5.3 Electrical hazards	17
5.4 Hazard from loss of stability.....	19
5.5 Noise hazard - Noise reduction at the design stage	20
5.6 Ergonomic requirements	20
5.7 Hygiene and cleaning.....	20
6 Verification of safety requirements and/or measures.....	22
7 Information for use	23
7.1 General.....	23
7.2 Operator training.....	25
8 Marking	25
Annex A (normative) Noise test code for band saw machines (grade 2)	27
Annex B (normative) Design principles to ensure cleanability of band saw machines	29
Annex C (normative) Common hazards for food processing machines and reduction requirements applicable to band saw machines.....	34
Annex ZA (informative)  Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC 	36
Bibliography.....	37

Foreword

This document (EN 12268:2003+A1:2010) has been prepared by Technical Committee CEN/TC 153 "Machinery intended for use with foodstuffs and feed", the secretariat of which is held by DIN.

It has been prepared by Working Group 2 "Meat Processing Machinery" of CEN/TC 153.

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 November 2010, and conflicting national standards shall be withdrawn at the latest by November 2010.

This document includes Amendment 1, approved by CEN on 2010-04-09.

This document supersedes EN 12268:2003.

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

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 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).

A1 For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document. **A1**

A1 *deleted text* **A1**

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, 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

A1 This document is a type C standard as stated in EN ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations and hazardous 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 the other standards, for machines that have been designed and built according to the provisions of this type C standard. **A1**

1 Scope

This European Standard specifies requirements for the design and manufacturing of band saw machines (see Figures 1 to 5).

The machines covered by this European Standard are used to cut bone and meat.

The band saw machines covered by this European Standard do not include band saw machines for processing wood and similar materials and the requirements of EN 1807 do not apply.

Band saw machines for domestic use are not included in this European Standard.

This European Standard only applies to machines which are manufactured after the date of issue of this European Standard.

This European Standard covers the following types of machines:

Band saw machines which are placed on the floor and can be wheel-mounted (see Figure 6).

— Type A

Band saw machine with a feed table and a fixed product pusher

Cutting height $SH < 250$ mm

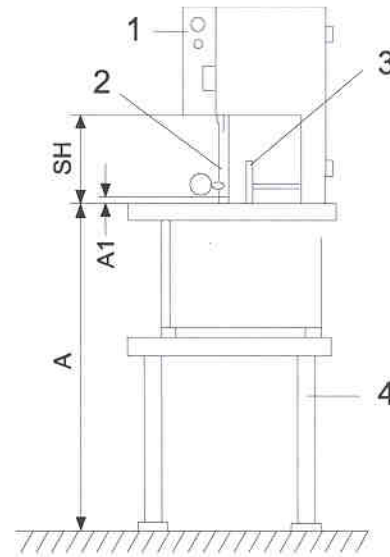
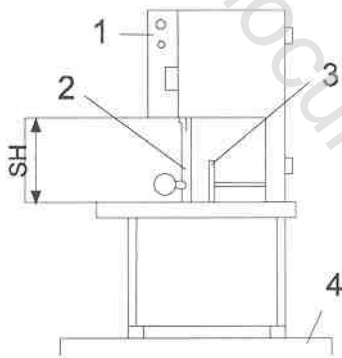


— Band saw machines designed as table-top machines with and without base

— Band saw machines designed as floor-type machines

— Band saw machines integrated in a cutting line 

Location: Table (see Figure 1) or base (see Figure 2). Distance A from the floor to the top surface of the feed table is between 800 mm and 1050 mm.



Key

- 1 ON / OFF switch
- 2 Product pusher
- 3 Portioning plate
- 4 Table

- 1 ON / OFF switch
- 2 Product pusher
- 3 Portioning plate
- 4 Base

Figure 1 — Type A, Band saw machine with product pusher - Location: table top

Figure 2 — Type A, Band saw machine with product pusher - Location: base

— Type B

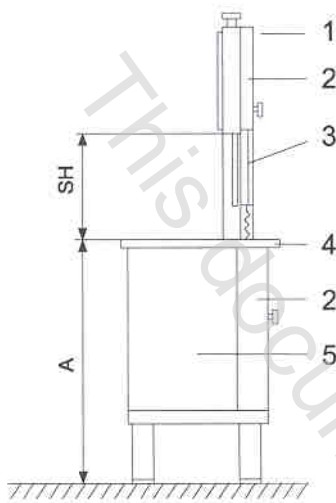
Band saw machine with a feed table, a protective rail and a cutting height $250 \text{ mm} \leq SH < 420 \text{ mm}$.

Distance A from the floor to the top surface of the feed table is between 800 mm and 1050 mm. Location: floor (see Figure 3)

— Type C

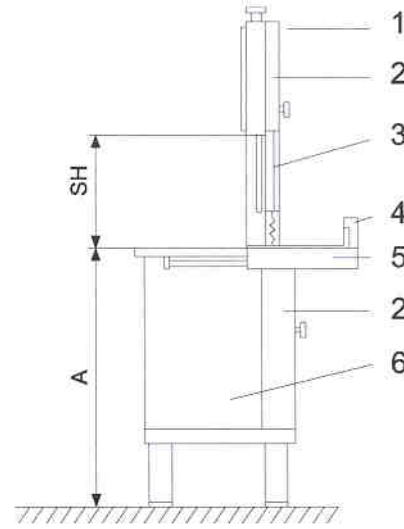
Band saw machine with a sliding feed table, a protective rail and a cutting height $250 \text{ mm} \leq SH < 420 \text{ mm}$.

Distance A from the floor to the top surface of the sliding feed table is between 800 mm and 1050 mm. Location: floor (see Figure 4).

**Key**

- 1 ON / OFF switch
- 2 Door
- 3 Protective rail / Product pusher
- 4 Feed table
- 5 Machine rack

Figure 3 — Type B, Band saw machine with protective rail and fixed feed table



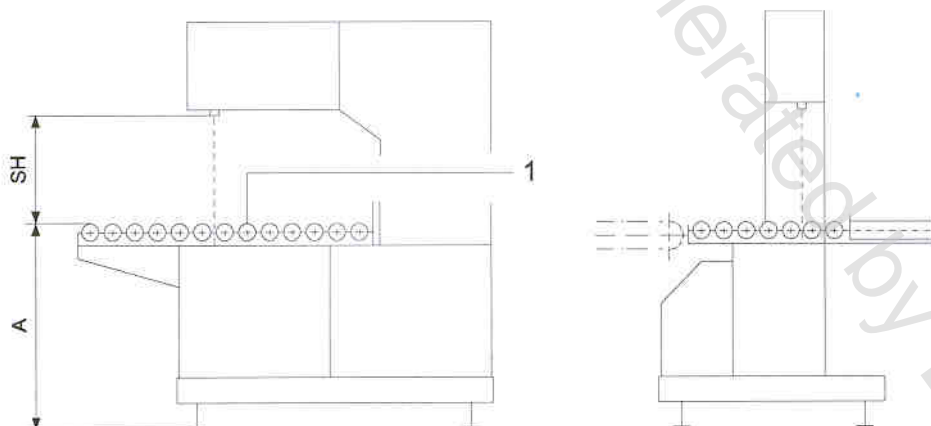
- 1 ON / OFF switch
- 2 Door
- 3 Protective rail / Product pusher
- 4 Finger protection bar
- 5 Sliding feed table
- 6 Machine rack

Figure 4 — Type C Band saw machine with rail and feed sliding table

— Type D

Band saw machine with feed and removal unit (e.g. roller conveyor, conveyor belt); integrated in a cutting plant, cutting height $SH < 550\text{mm}$.

Distance A from the floor to the feed surface is between 800 mm and 1050 mm. Location: floor (see Figure 5).



$SH < 550\text{ mm}$

Key

- 1 Roller conveyor or transport conveyor

Figure 5 — Type D, Band saw machine with feed and removal unit

Band saw machines consist of a machine casing, a fixed feed table or a sliding feed table, a roller conveyor or conveyor belt, a product pusher, a height-adjustable protective rail, a top and a bottom wheel, a saw blade, an upper and lower blade guide, a blade tensioning device, a drive and electrical components, depending on machine type. The requirements for automatic loading/unloading systems, conveyors, etc. do not fall within the scope of this European Standard.

A1 This European Standard deals with all significant hazards, hazardous situations and events relevant to band saw machines, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4).

This European Standard deals with the hazards which can arise during commissioning, operation, cleaning, use, maintenance and decommissioning of the machine. **A1**

On floor-type band saw machines, the product to be cut is placed by hand onto the fixed feed table or sliding feed table and pushed against the cutting zone of the saw blade by means of the product pusher or the rear table wall on the sliding feed table or by means of the roller conveyor or conveyor belt and sawed.

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.

- EN 614-1:2006, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*
- EN 953:1997, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*
- EN 1005-1, *Safety of machinery — Human physical performance — Part 1: Terms and definitions*
- EN 1005-2, *Safety of machinery — Human physical performance — Part 2: Manual handling of machinery and component parts of machinery*
- EN 1005-3, *Safety of machinery — Human physical performance — Part 3: Recommended force limits for machinery operation*
- EN 1088:1995, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*
- EN 1672-2:2005, *Food processing machinery — Basic concepts — Part 2: Hygiene requirements*
- EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1: 2005, modified)*
- EN 60529, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*
- EN ISO 3744, *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 4871, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*
- EN ISO 11204:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station 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)*

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 and specifications (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)*

EN ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by the upper and lower limbs (ISO 13857:2008)* ^{A1}

3 Terms and definitions

^{A1} For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply. ^{A1}

3.1

portioning plate

plate parallel to the saw blade and adjustable to the required slice thickness

3.2

bottom wheel

wheel below the table for driving the saw blade

3.3

blade guide

component for guiding the saw blade

3.4

blade tensioning device

component for tensioning and releasing the tension of a saw blade

3.5

finger protection bar

device on the table rear wall to prevent fingers from reaching the cutting zone

3.6

product pusher

movable device for manually pushing the product towards the cutting zone

3.7

last slice device

plate for feeding the last part of the product

3.8

saw blade

cutting tool in the form of a continuous toothed band

3.9

protective rail

device for covering the unused portion of the saw blade above the cutting zone

3.10

cutting height

thickness of product that can be processed by the machines