



SLOVENSKI STANDARD

SIST EN 12267:2003

01-julij-2003

Stroji za predelavo hrane - Krožne žage - Varnostne in higienske zahteve

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

Nahrungsmittelmaschinen - Kreissägemaschinen - Sicherheits- und Hygieneanforderungen

Machines pour les produits alimentaires - Scies circulaires - Prescriptions relatives a la sécurité et a l'hygiene

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ICS:

67.260

Tovarne in oprema za
živilsko industrijo

Plants and equipment for the
food industry

SIST EN 12267:2003

en

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English version

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

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Nahrungsmittelmaschinen - Kreissägemaschinen -
Sicherheits- und Hygieneanforderungen

This European Standard was approved by CEN on 9 January 2003.

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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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This document (EN 12267:2003) has been prepared by Technical Committee CEN TC 153 "Food processing machinery – Safety and hygiene requirements", 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of an identical text or by endorsement, at the latest by October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

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 EC Directive(s).

For relationship with EC Directives, see informative Annex ZA, which is an integral part of this document.

It is one of a series of standards which have been prepared for machines and equipment for meat processing in compliance with EN 1672-2:1997 and annex C and attends to machines, which are attached by Annex IV of Machinery Directive 98/37/EC.

Annexes A, B and C are normative.

This European Standard also contains a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Standard covers

- Circular saw machines standing on the floor and
- Circular saw machines installed in a cutting line.

The extent to which hazards are covered is indicated in this European Standard. For other hazards which are not covered by this European Standard, machinery should comply with EN 292 where applicable.

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1 Scope

This European Standard specifies requirements for the design and manufacturing of circular saw machines (see Figures 1 and 2).

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

The circular saw machines covered by this European Standard do not include circular saw machines for processing of wood and similar materials and the requirements of EN 1870-1 do not apply.

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

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

This European Standard covers the following types of machines:

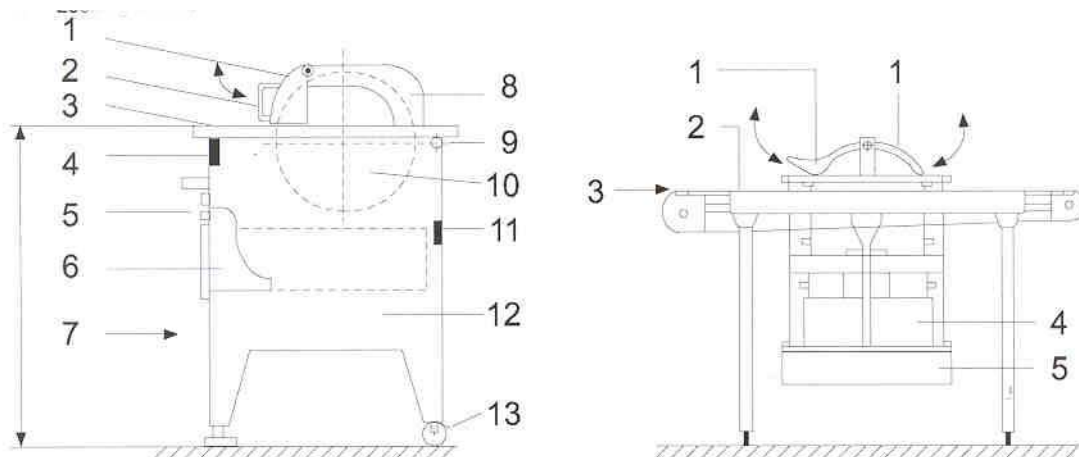
Circular saw machines with a feed table and a fixed product pusher

- The distance „A“ from the floor to the top surface of the feed table is from 800 mm to 1050 mm. The saw blade diameter is between 350 mm and 400 mm (see Figure 1).
- Circular saw machines installed in a cutting line (e.g. conveyor belt or roller conveyor), e.g. with a protective component which can be lifted on the feed and discharge side. The saw blade diameter is between 350 mm and 400 mm (see Figure 2).

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Key

- | | | | |
|----|------------------------------------|---|----------------------------------|
| 1 | Product pusher | 1 | Protective hood |
| 2 | Handle | 2 | Roller conveyor or belt conveyor |
| 3 | Feed table | 3 | Feed side |
| 4 | Interlocking switch for feed table | 4 | Casing |
| 5 | ON / OFF switch | 5 | Chip pan |
| 6 | Chip pan | | |
| 7 | Operator side | | |
| 8 | Protective hood | | |
| 9 | Hinge | | |
| 10 | Saw blade 350 mm - 400 mm diameter | | |
| 11 | Interlocking switch for chip pan | | |
| 12 | Machine rack | | |
| 13 | Locking device | | |

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Figure 1 — Circular saw machine with machine base

Figure 2 — Circular saw machine in cutting line

Circular saw machines comprise a machine base, a fixed, foldable feed table, a product pusher, a protective hood which can be lifted, a saw blade, a drive and electrical components, depending on machine type.

Circular saw machines with a machine base can be wheel-mounted (see Figure 1).

The intended uses of the machines are described in clause 7.

On floor-type circular saw machines (see Figure 3) the product to be cut is placed by hand onto the feed table and pushed against the cutting zone of the saw blade by means of the product pusher and sawed.

On circular saw machines which are installed in a cutting line (see Figure 4) the product to be cut is pushed by hand via the conveyor belt or roller conveyor against the cutting zone of the saw blade and sawed.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 292-1, *Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology.*

EN 292-2:1991, *Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles and specifications.*

EN 614-1, *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 954-1:1996, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design.*

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.*

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EN 1070:1998, *Safety of machinery – Terminology*

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

EN 1672-2:1997, *Food processing machinery - Basic concepts - Part 2: Hygiene requirements.*

EN 60204-1:1997, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:1997).*

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

EN 61000-6-1, *Electromagnetic compatibility (EMC) - Part 6-1: Generic standards; Immunity for residential, commercial and light-industrial environments (IEC 61000-6-1:1997, modified).*

EN 61000-6-2, *Electromagnetic compatibility (EMC) - Part 6-2: Generic standards; Immunity for industrial environments (IEC 61000-6-2:1999, modified).*

EN 61000-6-3, *Electromagnetic compatibility (EMC) - Part 6-3: Generic standards; Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3:1996, modified).*

EN 61000-6-4, *Electromagnetic compatibility (EMC) - Part 6-4: Generic standards; Emission standard for industrial environments (IEC 61000-6-4:1997, modified).*

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, *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 (EN 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)*.

3 Terms and definitions

For the purposes of this European Standard the terms and definitions given in EN 1070:1998 and the following apply (see Figures 1 and 2).

3.1 movable protective hood
movable device for covering the saw blade at the cutting zone and on the discharge side above the feed level

3.2 product pusher
movable device for pushing the bone against the cutting zone and for covering the saw blade above the table

3.3 saw blade
toothed cutting tool in the form of a disc

3.4 protective hood
device for covering the saw blade above and below the table except for the cutting zone

3.5 cutting line
device for automatic product processing with conveyor belts or roller conveyors

3.6 feed table
surface with an integrated saw blade for placing the bone in position for cutting

4 List of hazards

4.1 General

This clause and annex C (normative) contain the hazards and hazardous situations based upon EN 1050:1996 as far as they are dealt with in this European Standard, identified by a risk assessment significant for circular saw cutting machines, and actions to eliminate or reduce risk.

Before using this standard it is important to carry out a risk assessment of the cutting machine to check that it has the hazards identified in this clause.

4.2 Mechanical hazards

4.2.1 Circular saw machine with feed table and fixed product pusher (see Figure 3)

4.2.1.1 Area of saw blade

— Zone 1

Saw blade at the cutting zone, above the feed table

Hazard of cutting or severing fingers.

— Zone 2

Saw blade outside the cutting zone, above the feed table

Hazard of cutting or severing fingers.

— Zone 3

Saw blade outside the cutting zone, below the feed table

Hazard of cutting or severing fingers.

4.2.1.2 Area of drive mechanism

— Zone 4

Saw blade drive

Crushing hazard to fingers or hand.

4.2.2 Circular saw machine in cutting line (see Figure 4) - Area of saw blade

— Zone 1

Saw blade at the cutting zone, above the feed plane

Hazard of cutting or severing fingers.

— Zone 2

Saw blade outside the cutting zone, above the feed plane

Hazard of cutting or severing fingers

— Zone 3

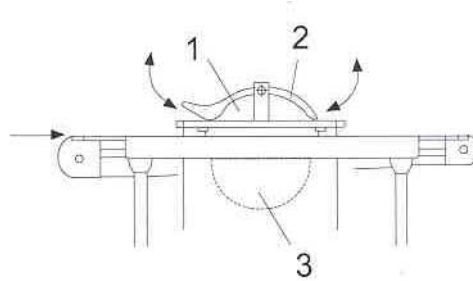
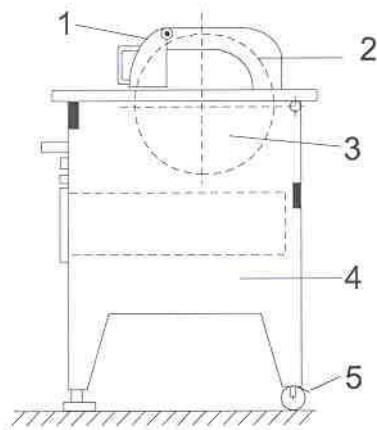
Saw blade outside the cutting zone, below the feed plane

Hazard of cutting or severing fingers.

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Key

- 1 Zone 1
- 2 Zone 2
- 3 Zone 3
- 4 Zone 4
- 5 Zone 5

- 1 Zone 1
- 2 Zone 2
- 3 Zone 3

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Figure 3 — Floor type circular saw machine - danger zones

Figure 4 — Circular saw machine in cutting line - danger zones

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4.3 Electrical hazards <https://standards.iteh.ai/catalog/standards/sist/c3339e8a-86c5-40a3-80bf-444bf5c33aa4/sist-en-12267-2003>

4.3.1 Direct or indirect contact with life parts

Hazard from electrical shock to the body.

4.3.2 Electrical components with insufficient safety level

Hazards arising from malfunction of electrical components.

Hazards from the effect of failure/unexpected stoppage on other elements in a cutting line.

4.4 Hazard from loss of stability

- Zone 5

Wheel-mounted circular saw machines (see Figure 3)

Impact or squeezing hazard to the body if machine topples over.

4.5 Noise hazard

Noise can lead to

- permanent loss of hearing,
- ringing in the ears (tinnitus),
- fatigue, stress etc.