
Stroji za predelavo hrane - Avtomatski stroji za razsekavanje hrbtov v klavnicah - Varnostne in higienske zahteve

Food processing machinery - Automatic back splitting machines of butchery carcasses - Safety and hygiene requirements

Nahrungsmittelmaschinen - Automatische Rückenspaltmaschinen für Schlachttierkörper - Sicherheits- und Hygieneanforderungen

Machines pour les produits alimentaires - Machines automatiques a fendre les carcasses d'animaux de boucherie - Prescriptions relatives a la sécurité et a l'hygiene

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**Food processing machinery - Automatic back splitting machines
of butchery carcasses - Safety and hygiene requirements**

Machines pour les produits alimentaires - Machines
automatiques à fendre les carcasses d'animaux de
boucherie - Prescriptions relatives à la sécurité et à
l'hygiène

Nahrungsmittelmaschinen - Automatische
Rückenspaltmaschinen für Schlachttierkörper - Sicherheits-
und Hygieneanforderungen

This European Standard was approved by CEN on 6 September 2008.

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Contents

Page

Foreword.....	5
Introduction	6
1 Scope	7
1.1 General.....	7
1.2 Description of the concerned machines	8
2 Normative references	8
3 Terms and definitions	9
4 List of significant hazards	10
4.1 General.....	10
4.2 Mechanical hazards (see Figures 2 to 4).....	11
4.2.1 3 different types of automatic back splitting machines	11
4.2.2 Automatic back splitting machines, Effective range of splitting tool	12
4.2.3 Zone of driving- and guiding mechanisms of splitting tools and bearing device of the carcass.....	13
4.2.4 Ejection of cutting tools or parts of cutting tools and of bone particles, falling of tools	14
4.3 Electrical hazards and hazards related to the control system.....	14
4.3.1 Direct or indirect contact with live parts	14
4.3.2 Control systems with insufficient safety level	15
4.4 Hydraulic and pneumatic hazards	15
4.5 Hazards due to loss of stability	15
4.6 Hazard generated by noise	15
4.7 Hazards from non-compliance with ergonomic principles	15
4.8 Hazards from non-compliance with hygiene principles	15
4.8.1 Microbial causes	15
4.8.2 Chemical causes	15
4.8.3 Physical causes	15
5 Safety and hygiene requirements and/or protective measures	16
5.1 General.....	16
5.2 Mechanical hazards	16
5.2.1 Zone 1: Effective range of splitting tool (see Figure 5).....	16
5.2.2 Zone 2: Driving and guiding mechanism (see Figures 6 and 7)	17
5.2.3 Zone 3: Ejection zone of cutting tools (see Figures 5 and 9).....	17
5.2.4 Examples of protection devices (see 5.2.1, 5.2.2, 5.2.3)	18
5.2.5 Common measures to the 3 zones	19
5.2.6 Protection of the cutting tools.....	19
5.2.7 Interlocking devices	19
5.3 Electrical hazards and control system	20
5.3.1 General.....	20
5.3.2 Stopping function of switching devices.....	20
5.3.3 Emergency stop device.....	20
5.3.4 IP degrees of protection against water ingress.....	20
5.3.5 On and Off switch	21
5.3.6 Safety requirements related to electromagnetic phenomena	21
5.3.7 Safety related parts of the control system	21
5.4 Hydraulic and pneumatic hazards	21
5.5 Hazards of loss of stability	21
5.6 Noise reduction.....	21
5.7 Ergonomic requirements	22
5.8 Hygiene and cleaning	22

5.8.1	General	22
5.8.2	Food areas	22
5.8.3	Splash area	22
5.8.4	Non-food areas	22
5.8.5	Surface conditions	22
5.8.6	Cleaning	22
6	Verification of safety and hygiene requirements and/or protective measures	23
7	Information for use	25
7.1	General	25
7.2	Signals and warning devices	25
7.3	Instruction handbook	25
7.4	Operator training	26
7.5	Marking	26
Annex A	(normative) Noise test code for automatic back splitting machines of butchery carcasses (grade 2)	28
A.1	Sound measurements	28
A.1.1	Emission sound pressure level determination	28
A.1.2	Sound power level determination	28
A.2	Installation and mounting conditions	28
A.3	Operating conditions	28
A.4	Measurement	28
A.5	Information to be recorded	29
A.6	Measurement uncertainty	29
A.7	Information to be reported	29
A.8	Declaration and verification of the noise emission values	29
Annex B	(normative) Design principles to ensure cleanability of automatic back splitting machines of butchery carcasses	30
B.1	Definitions	30
B.2	Materials of construction	31
B.2.1	General	31
B.2.2	Type of materials	31
B.3	Design	31
B.3.1	General	31
B.3.2	Food area	31
B.3.3	Splash area	33
B.3.4	Non-food area	34
Annex C	(normative) Common hazards for food processing machines and reduction requirements applicable to back splitting machines	35
C.1	Cutting hazards	35
C.2	Risks from cleaning	35
C.3	External influences on electrical equipment	35
C.4	Restoration of energy supply after an interruption	35
C.5	Hazards due to cleaning substances	36
C.6	Hazards from neglecting use of PPE	36
C.7	Hazard from noise	36
Annex ZA	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC	37
Annex ZB	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC	38
	Bibliography	39

EN 15166:2008 (E)

Figures

Figure 1 — Back splitting machine for beef, type C.....	7
Figure 2 — Automatic back splitting machine for pork, type B.....	11
Figure 3 — Automatic back splitting machine for beef, type C	11
Figure 4 — Automatic back splitting machine for pork, type A.....	12
Figure 5 — Effective range	13
Figure 6 — Single structure	13
Figure 7 — Multiple structure	14
Figure 8 — Multiple structure	14
Figure 9 — Installations diagram of the machine, type C.....	16
Figure 10 — Single structure, protection using fixed devices.....	18
Figure 11 — Multiple structure, protection by the machine structure	18
Figure B.1 — Smooth surfaces – Food area	30
Figure B.2 — Angles and radii in food area.....	31
Figure B.3 — Angles in food area	32
Figure B.4 — Intersecting surfaces in food area.....	32
Figure B.5 — Permissive fastening methods – head profiles.....	34

Tables

Table 1 — Test methods	24
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Foreword

This document (EN 15166:2008) has been prepared by Technical Committee CEN/TC 153 "Food processing machinery — Safety and hygiene specifications", the secretariat of which is held by DIN.

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 June 2009, and conflicting national standards shall be withdrawn at the latest by June 2009.

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 98/37/EC and 2006/42/EC.

For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document.

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 the United Kingdom.

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Introduction

This document is a type C standard as stated in EN ISO 12100-1.

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 the other standards, for machines that have been designed and built according to the provisions of this type C standard.

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1 Scope

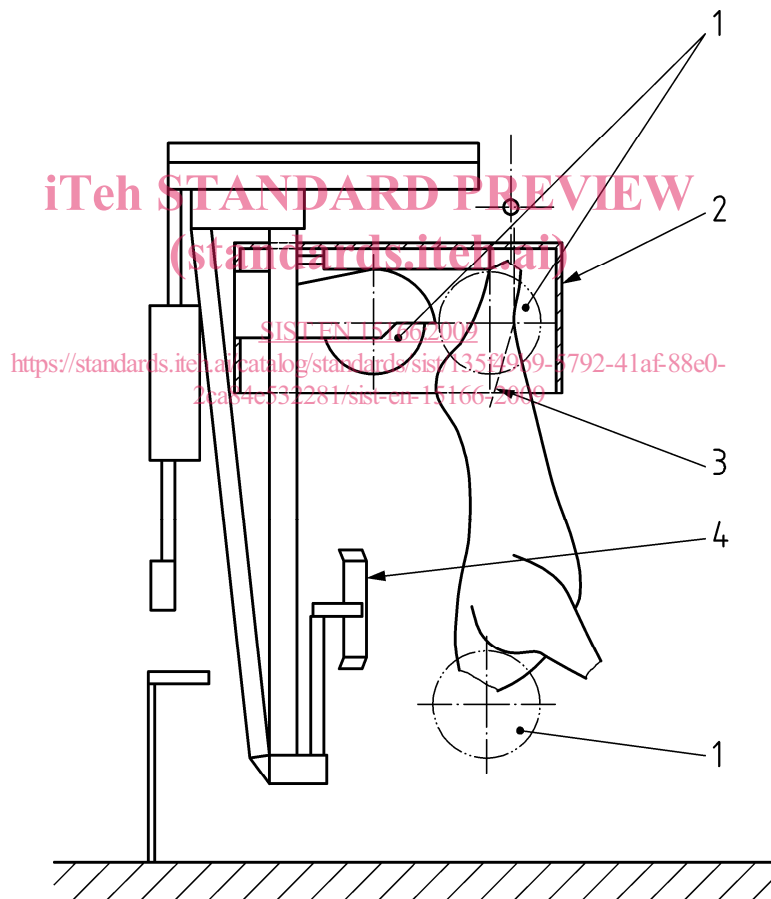
1.1 General

This European Standard applies to automatic back splitting machines and specifies safety and health requirements for machines used in slaughterhouses in order to fully automatically split meat animal (beef and pork) along the back-bone axis, splitting the carcass into two parts (see Figure 1).

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

This document deals with the significant hazards, hazardous situations and events during transport, assembly and installation, commissioning and use as defined in EN ISO 12100-1:2003, 5.3.

This document is not applicable to automatic back splitting machines, which are manufactured before the date of its publication as EN.



Key

- 1 saw blade
- 2 saw blade cover
- 3 guiding device
- 4 bearing device
- 1 + 2 + 3 + 4 = cutting system

Figure 1 —Back splitting machine for beef, type C

EN 15166:2008 (E)**1.2 Description of the concerned machines**

The machines concerned by this standard are those used in slaughterhouses. They are fitted with a cutting device and are driven by electric, hydraulic and/or pneumatic energy.

The utilized cutting tools are:

- circular saws,
- splitting tools.

Three types of machines are considered (see Figures 1 to 11):

- Splitting machines for pork carcasses, type A (splitter),
- Splitting machines for pork carcasses, type B (circular saw),
- Splitting machines for beef carcasses, type C (circular saw).

There are two different operation cycles:

- carcasses can be splitted when they are at standstill (in general they are hanging on a sequence conveyed transport system);
- carcasses can also be splitted during their continuous movement by conveyor, in this case the movement of the tool is synchronized with that of the carcass.

When the split is finished, the cutting tool returns automatically to its initial position.

The machines run automatically. Under normal operating conditions there is no manual intervention.

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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 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 982, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

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

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 61310-1, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:2007)*

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

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

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

EN ISO 14121-1, *Safety of machinery — Risk assessment — Part 1: Principles (ISO 14121-1:2007)*

3 Terms and definitions

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

3.1

guiding device

device for guiding the saw blade

3.2

bearing device

system for fixation of carcass during splitting process

3.3

circular saw

cutting tool in shape of a dented disc

EN 15166:2008 (E)**3.4****splitting device**

cutting tool in shape of a knife or guillotine

3.5**splitting tool**

cutting tool (circular saw or splitting device inclusive guard)

3.6**splitting cycle**

cycle including the following operations:

- positioning the splitting tool,
- cutting of the carcass by lowering of the splitting tool,
- returning of the splitting tool,
- cleaning

3.7**gambrel**

device for hanging a carcass with two legs

4 List of significant hazards**4.1 General**

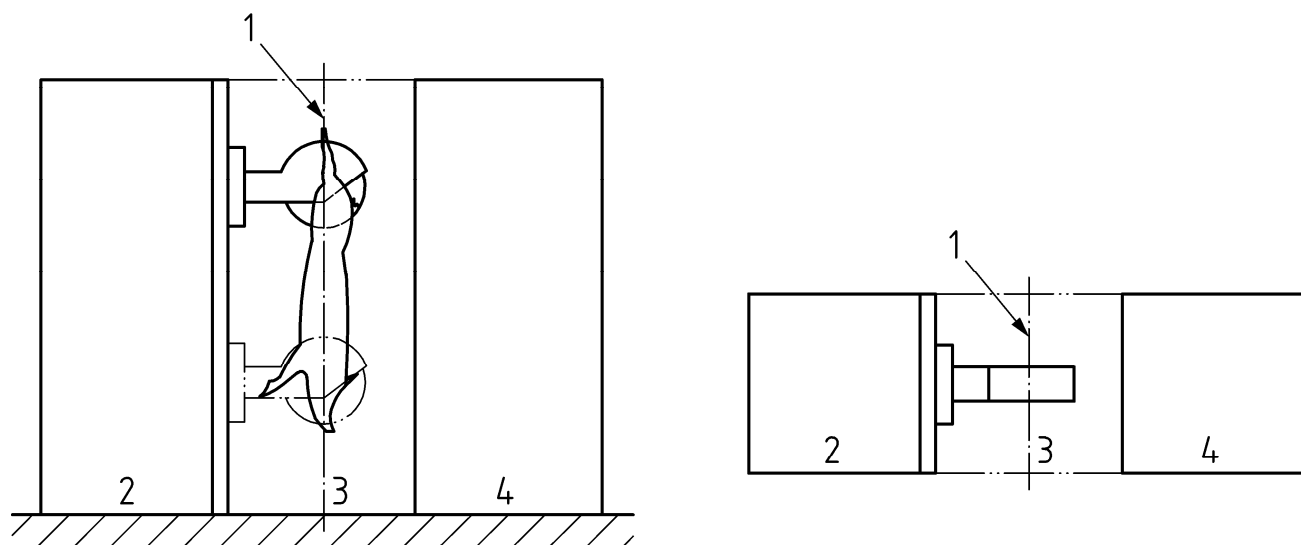
This clause and Annex C contains all the significant hazards, hazardous situations and events, as far as they are dealt with in this standard, identified by risk assessment as significant for this type of machinery and which require action identified to eliminate or reduce risk.

Before using this standard it is important to carry out a risk assessment according to EN ISO 14121-1 of the automatic back splitting machine to check that it has identified all significant hazards, hazardous situations and events in this clause.

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4.2 Mechanical hazards (see Figures 2 to 4)

4.2.1 3 different types of automatic back splitting machines

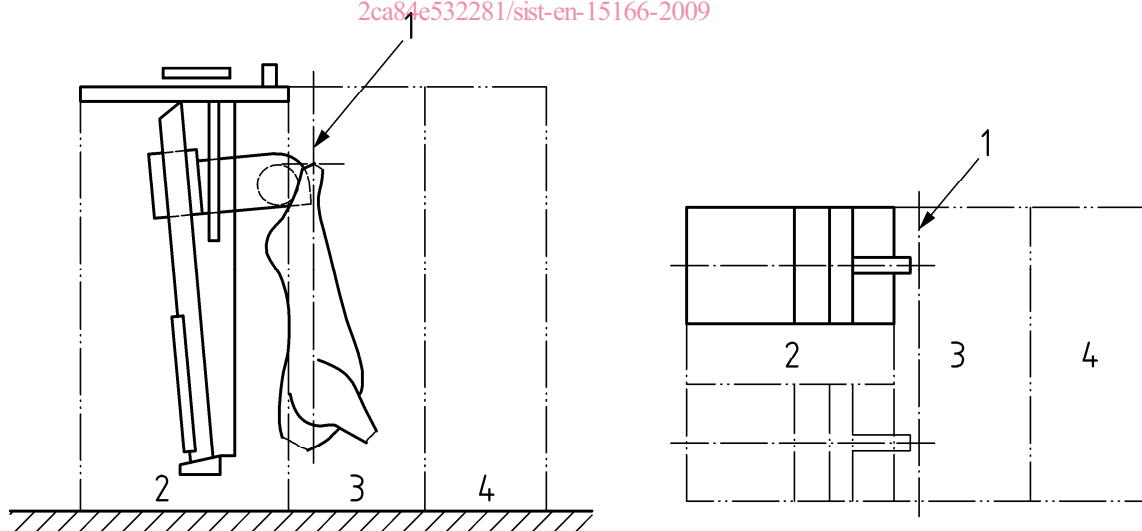


Key

- 1 rail axis
- 2 zone 2
- 3 zone 1
- 4 zone 3

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Figure 2 — Automatic back splitting machine for pork, type B
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Key

- 1 rail axis
- 2 zone 2
- 3 zone 1
- 4 zone 3

Figure 3 — Automatic back splitting machine for beef, type C