



# SLOVENSKI STANDARD

## SIST EN 12852:2002+A1:2010

01-junij-2010

Nadomešča:  
SIST EN 12852:2002

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**Stroji za predelavo hrane - Naprave za predelavo hrane in mešalniki - Varnostne in higienske zahteve (vključno z dopolnilom A1)**

Food processing machinery - Food processors and blenders - Safety and hygiene requirements

Nahrungsmittelmaschinen - Vertikalkutter und Mixer - Sicherheits- und Hygieneanforderungen

Machines pour les produits alimentaires - Préparateurs culinaires et blenders - Prescriptions relatives à la sécurité et à l'hygiène

**Ta slovenski standard je istoveten z: EN 12852:2001+A1:2010**

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**ICS:**

67.260	Tovarne in oprema za živilsko industrijo	Plants and equipment for the food industry
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**SIST EN 12852:2002+A1:2010** en,fr

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EUROPEAN STANDARD

**EN 12852:2001+A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2010

ICS 67.260

Supersedes EN 12852:2001

English Version

## Food processing machinery - Food processors and blenders - Safety and hygiene requirements

Machines pour les produits alimentaires - Préparateurs  
culinaires et blenders - Prescriptions relatives à la sécurité  
et à l'hygiène

Nahrungsmittelmaschinen - Vertikalkutter und Mixer -  
Sicherheits- und Hygieneanforderungen

This European Standard was approved by CEN on 20 April 2001 and includes Amendment 1 approved by CEN on 25 March 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.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## EN 12852:2001+A1:2010 (E)

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## Foreword

<sup>A1</sup> This document (EN 12852:2001+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. <sup>A1</sup>

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 2010-03-25.

This document supersedes EN 12852:2001.

The start and finish of text introduced or altered by amendment is indicated in the text by tags <sup>A1</sup> <sup>A1</sup>.

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.

It is one of a series of standards on the design and construction of machines used in catering:

- vegetable cutting machines;
- catering attachments for machines having an auxiliary drive hub;
- food processors and blenders; [SIST EN 12852:2002+A1:2010](https://standards.iteh.ai/catalog/standards/sist/b15cac35-3f2b-4b6a-a1eb-5438fe428a0b/sist-en-12852-2002a1-2010)
- hand-held blenders and whisks; <https://standards.iteh.ai/catalog/standards/sist/b15cac35-3f2b-4b6a-a1eb-5438fe428a0b/sist-en-12852-2002a1-2010>
- beam mixers;
- salad dryers;
- vegetable peelers;
- cooking kettles equipped with stirrer and/or mixer.

<sup>A1</sup> 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).

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

<sup>A1</sup> *deleted text* <sup>A1</sup>

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.

**EN 12852:2001+A1:2010 (E)****Introduction**

The use of food processors and blenders generates various mechanical and other risks.

**A1** Their extensive use in numerous countries justifies the need of a standard covering both safety and the hazards to food hygiene.

This European Standard is a type C standard as stated in EN ISO 12100. **A1**

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this standard.

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 This European Standard specifies the safety and hygiene requirements for the design and manufacture of food processors and blenders.

It applies to food processors and blenders having a bowl which is stationary while the food is being processed.

The total volume of the bowl is less than or equal to 150 l.

The machines covered by this standard are intended to carry out various types of operations such as: mincing, mixing, blending, whipping, using a large number of products and raw materials, and which are used in food and catering industries such as restaurants, hotels, coffee shops and pubs.

<sup>A1</sup> This European Standard specifies all significant hazards, hazardous situations and events relevant to food processors and blenders, 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, removal of food blockages, feeding, changing the tools, maintenance and decommissioning of the machine. <sup>A1</sup>

1.2 This standard does not apply to:

- domestic machines;
- machinery dedicated to food industrial processing (e.g. pet food, cannery industry, industrial meat processing).

Small machines called "shakers" which are dedicated to blending liquid, with an impellor, usually driven from above are excluded.

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<sup>A1</sup> *deleted text* <sup>A1</sup>

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<sup>A1</sup> 1.3 This European Standard is not applicable to food processors and blenders which are manufactured before the date of its publication as EN. <sup>A1</sup>

**EN 12852:2001+A1:2010 (E)****2 A1 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 614-1:2006, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 953, *Safety of machinery — General requirements for the design and construction of fixed and movable guards*

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 60204:2005, modified)*

EN 60529:1991, *Degrees of protection provided by enclosures (IP code)*

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 4287:1998, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters (ISO 4287:1997)*

EN ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 11201:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at the work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane (ISO 11201:1995)*

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 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 - Description****3.1 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



**3.1.1****nominal volume,  $V_n$** 

manufacturer's declared intended working volume of food processed (see 7.1.d)

**3.1.2****total volume,  $V_t$** 

total volume that the bowl can physically contain

**3.1.3****removable**

can be removed and put back by means of basic hand tools

**3.1.4****easily removable**

can be removed and put back easily by one person without the use of tools

**3.1.5****bumper point**

fixed part which limits the movement of the bowl, at the lowest position

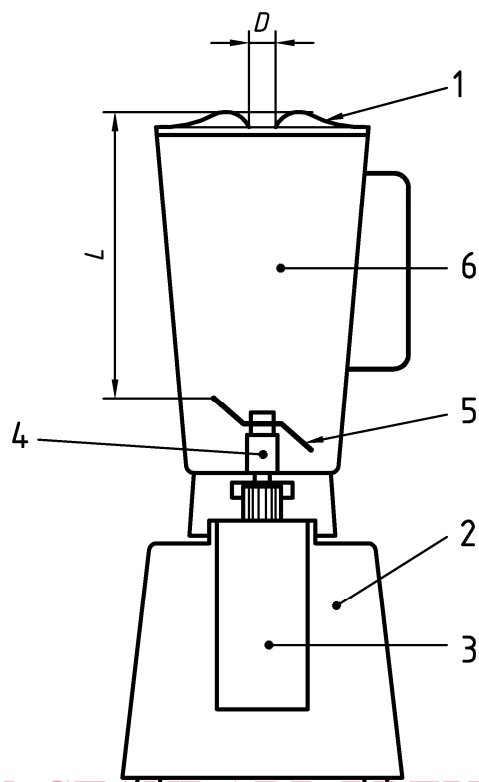
**3.2 Description**

The essential difference between a food processor and a blender is the geometric shape of the working bowl and the speed of the tools, which make the blender able to work with a liquid base, and the food processor able to work with or without a liquid base (see figures 1, 2 and 3)

$L$  is the distance between the upper edge of the aperture and the upper blade of the tool.  $D$  is the circumscribed diameter of the aperture.

For those machines, three types are defined.

- type 1: machines for which  $V_t < 5$  l
- type 2: machines for which  $5 \text{ l} \leq V_t \leq 25 \text{ l}$  and with a total power rating  $P \leq 3 \text{ kW}$
- type 3: machines for which  $25 \text{ l} < V_t \leq 150 \text{ l}$  or with a total power rating  $P > 3 \text{ kW}$



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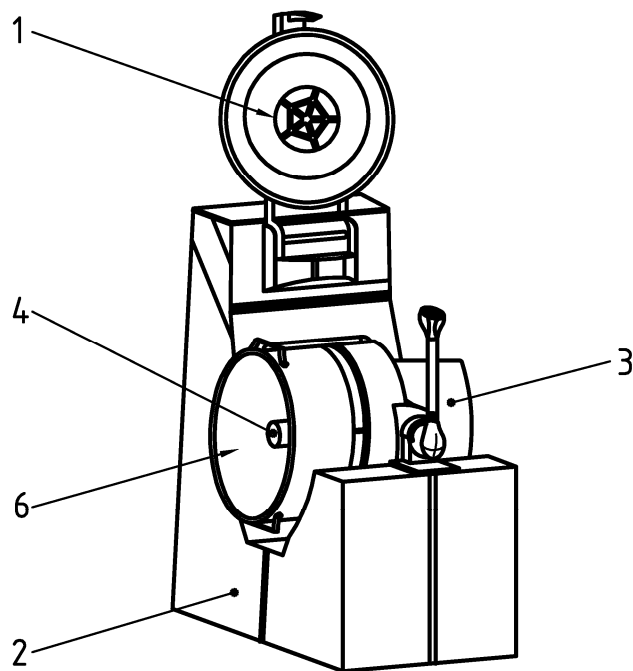
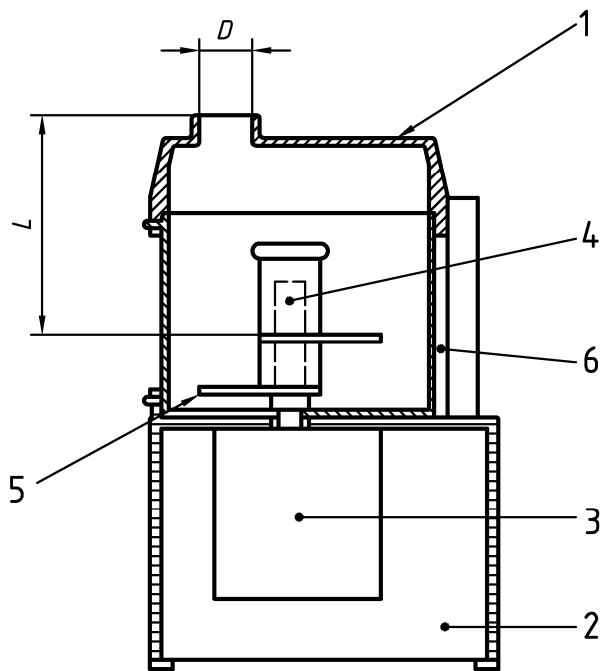
**Key**

- 1: Cover or lid
- 2: Housing
- 3: Motor
- 4: Shaft
- 5: Tool
- 6: Bowl

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**Figure 1 — Example of a blender**

**Key**

- 1: Cover or lid
- 2: Housing
- 3: Motor
- 4: Shaft
- 5: Tool
- 6: Bowl


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**Figure 2 — Example of a food processor**      **Figure 3 — Example of a food processor with tilting bowl**

## EN 12852:2001+A1:2010 (E)

4  List of significant hazards

## 4.1 General

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

## 4.2 Mechanical hazards

## 4.2.1 Access to the danger zones

Mechanical hazards arise from contact with the moving tool, the tilting device and the drive mechanism (see figure 4).

The hazards may arise by:

- zone 1: reaching into the bowl and contacting the moving tool

Hazard of cutting fingers;

- zone 2: tool drive shaft

Hazard of cutting fingers with rotating shaft;

- zone 3: access to the drive mechanism

Hazard of crushing hands;

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- zone 4: tilting zone of the bowl

Hazard of crushing arms and hands;

- zone 5: ejection of blades in the event of breakage

Hazard of cutting or penetration to body.

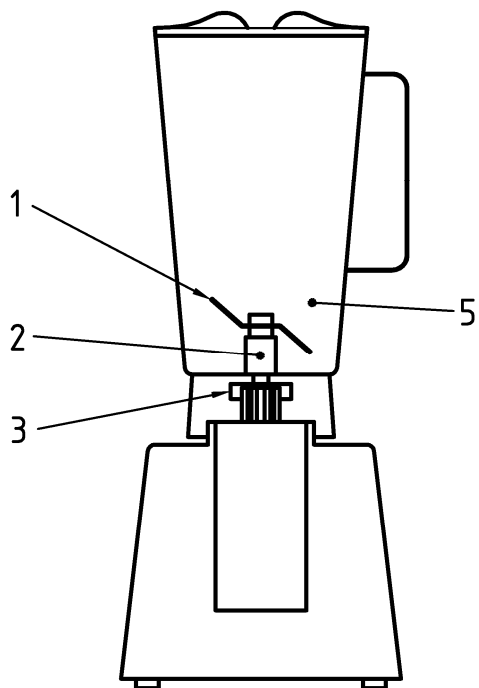


Figure 4a — On a blender

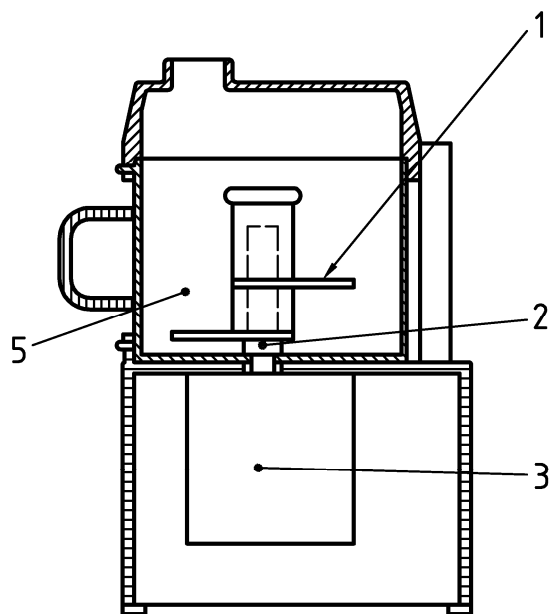


Figure 4b — On a food processor

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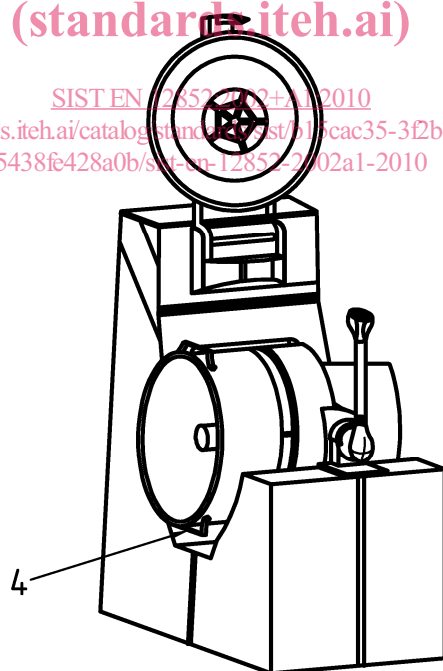


Figure 4c — Zone 4 - On a food processor with tilting bowl

Figure 4 — Danger zones

### 4.2.2 Loss of stability

Hazards of crushing and impact to the body.

**EN 12852:2001+A1:2010 (E)****4.2.3 Incorrect assembly and fitting**

Hazards of cutting and impact to the fingers or hands.

**4.2.4 Handling, cleaning and storage of cutting devices**

Hazards of cutting and impact to the fingers and hands.

**4.3 Electrical hazards**

Hazards of electric shock by direct or indirect contact with live parts.

**4.4 Hazards generated by neglecting hygiene principles in machine design****4.4.1 Hazards to the operator**

Hazards from the food being processed, e.g. inhalation of flour, sugar, ... and from the cleaning agents used to disinfect the machine.

NOTE See also [A1](#) prCEN/TR 1672-1 [A1](#) which deals with the hygiene risk to the operator.

**4.4.2 Hazards to the consumer**

Inability to clean food and splash areas effectively and thoroughly.

Contamination of the food by undesirable materials including residues of food, microbiological organisms as well as residues of cleaning and disinfecting fluids.

**4.5 Hazards generated by neglecting ergonomic principles in machine design**

Neglecting ergonomic principles can cause mistakes in operation of controls or physical injury to the operator due to over-reaching, heavy loads, awkward posture, etc.

**4.6 Noise**

Noise may be a hazard resulting in:

- permanent loss of hearing;
- tinnitus;
- tiredness, stress, etc.

**5 [A1](#) Safety and hygiene requirements and/or protective measures****5.1 General**

Machinery shall comply with the safety requirements and/or protective measures of this clause.

In addition, the machine shall be designed according to the principles of EN ISO 12100-2 for relevant but not significant hazards, which are not dealt with by this European Standard.

For hazards which are to be reduced by the application of the type B-standards such as EN 614-1, EN 953, EN 1005-3, EN 1088, EN 60204-1, EN 60529, EN ISO 12100, EN ISO 13849-1 and EN ISO 13857, the manufacturer shall carry out a risk assessment to establish the requirements of the type B-standard. This specific risk assessment shall be part of the general risk assessment of the machine. [A1](#)

## 5.2 Mechanical hazards

**A1** deleted text **A1**

### 5.2.1 **A1** Access to danger zones (see Figure 4)

#### 5.2.1.1 General

All the interlocking devices associated with guards shall comply with 5.7 of EN 1088:1995.

Fixed and movable guards shall comply with EN 953.

The level of safety of the interlocking devices shall be consistent with the control systems into which they are integrated.

The safety related parts of the control systems shall meet at least performance level c and category 1 in accordance with EN ISO 13849-1:2008.

NOTE The category 1 in accordance with EN ISO 13849-1:2008 is equivalent to category 1 of EN 954-1:1996.

Instructions about the use and the maintenance of these devices shall be provided in the instruction handbook. **A1**

#### 5.2.1.2 Zones 1 and 2

Specific user needs mean that the minimum safety distances cannot comply with **A1** EN ISO 13857 **A1**, in particular, if an aperture is needed to add some ingredients such as fruits, vegetables, butter, eggs during processing. For this reason specific dimensions shall be respected for type 1 and type 2 machines.

##### 5.2.1.2.1 Type 1

Dimensions shall be  $L \geq 120$  mm and  $D \leq 52$  mm (see figures 1 and 2)

**A1** This requirement can be achieved by integral guards (see Figure 5) or by interlocking removable covers or lids. Where interlocking removable covers or lids are used, this interlocking shall be achieved according to 3.25.6 of EN ISO 12100-1:2003, 5.3.2.5 of EN ISO 12100-2:2003 and EN 1088:1995. **A1**