SLOVENSKI STANDARD
SIST EN 12852:2002

01-september-2002

Stroji za predelavo hrane - Naprave za predelavo hrane in mešalniki - Varnostne in higienske zahteve

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'hygiene

Ta slovenski standard je istoveten z: **EN 12852:2001**

ICS:

67.260	Tovarne in oprema za živilsko industrijo	Plants and equipment for the food industry

SIST EN 12852:2002 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12852

May 2001

ICS 67.260

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.

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 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 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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 12852:2001 E

Contents

Foreword

This European Standard 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 November 2001, and conflicting national standards shall be withdrawn at the latest by November 2001.

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;

— hand-held blenders and whisks;

— beam mixers;

— salad dryers;

— vegetable peelers;

— cooking kettles equipped with stirrer and/or mixer.

This European Standard 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 Directive(s), see informative Annex ZA, which is an integral part of this standard.

The annexes A and B are normative. Annex C is informative.

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

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

Their extensive use in numerous countries justifies the need of a standard covering both safety and the hazards to food hygiene arising from machine design complementary to prEN 1672-1:1994 and EN 1672-2:1997 which state common requirements for food processing machines.

This European standard has been prepared to be a harmonised standard to provide one means of conformity with the essential safety and hygiene requirements of the Machinery Directive and associated EFTA Regulations.

This European standard is a type C standard as stated in EN 1070:1998.

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.

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.

This standard applies when such machines are used under the intended conditions of use as defined in 3.12 of EN 292-1:1991 and stated in the instruction handbook (see 7.1), including cleaning, removal of food blockages, feeding and changing the tools.

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.

1.3 This standard covers significant hazards at such machines, as identified by risk assessment (see EN 1050:1996), which are listed in clause 4 of this standard. In addition machinery shall comply as appropriate with EN 292 and prEN 1672-1:1994 for hazards which are not covered by this standard.

1.4 This standard does not deal with:

— vibration hazard;

— thermal hazard;

— hazard due to pressure.

1.5 This standard applies primarily to machines which are manufactured after its date of issue.

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 292-1:1991, *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 292-2/A1:1995, *Safety of machinery - Basic concepts, general principles for design - Part 2 : Technical principles and specifications.*

EN 294:1992, *Safety of machinery - Safety distances to prevent danger zones being reached by the upper limbs.*

EN 614-1:1995, *Safety of machinery - Ergonomic design principles - Part 1 : Terminology and general principles.*

EN 953:1997, *Safety of machinery - 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.*

prEN 1005-3:1993, *Safety of machinery - Human physical performance - Part 3 : Recommended force limits for machinery operation.*

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

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

prEN 1672-1:1994, *Food processing machinery - Basic concepts - Part 1 : Safety requirements.*

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

EN 50081-1:1992, *Electromagnetic compatibility - Generic emission standard - Part 1 : Residential, commercial and light industry.*

EN 50081-2:1993, *Electromagnetic compatibility - Generic emission standard - Part 2 : Industrial environment.*

EN 50082-1:1992, *Electromagnetic compatibility - Generic immunity - Part 1 : Residential, commercial and light industry.*

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

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

EN 60947-2:1995*, Low-voltage switchgear and controlgear - Part 2 : Circuit -breakers.*

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

EN ISO 3744:1995, *Acoustics - Determination of sound power levels of noise sources - Engineering method employing an enveloping measurement surface in an essentially free field over a reflecting plane.*

EN ISO 4871:1996, *Acoustics - Declaration and verification of noise emission values of machinery and equipment.*

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.*

EN ISO 11688-1:1998*, Acoustics – Recommended practice for the design of low noise machinery and equipment – Part 1 : Planning.*

ISO 468:1982, *Surface roughness - Parameters, their values and general rules for specifying requirements.*

3 Terms and definitions - Description

3.1 Terms and definitions

For the purposes of this standard, terms and definitions given in EN 1070:1998 and the following apply :

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)

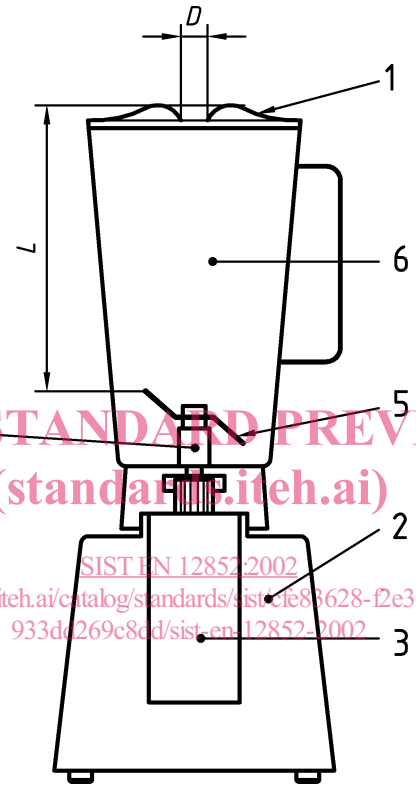
L is the distance between the upper edge of the aperture and the upper blade of the tool. *D* is the circumscribed diameter of the aperture.

For those machines, three types are defined :

— type 1 : machines for which V_t < 5 l

— type 2 : machines for which 5 l ≤ V_t ≤ 25 l and with a total power rating P ≤ 3 kW

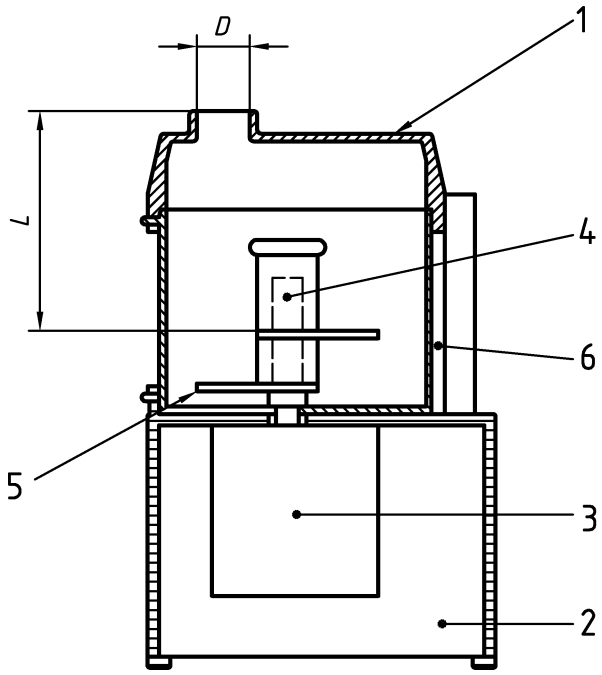
— type 3 : machines for which 25 l < V_t ≤ 150 l or with a total power rating P > 3 kW

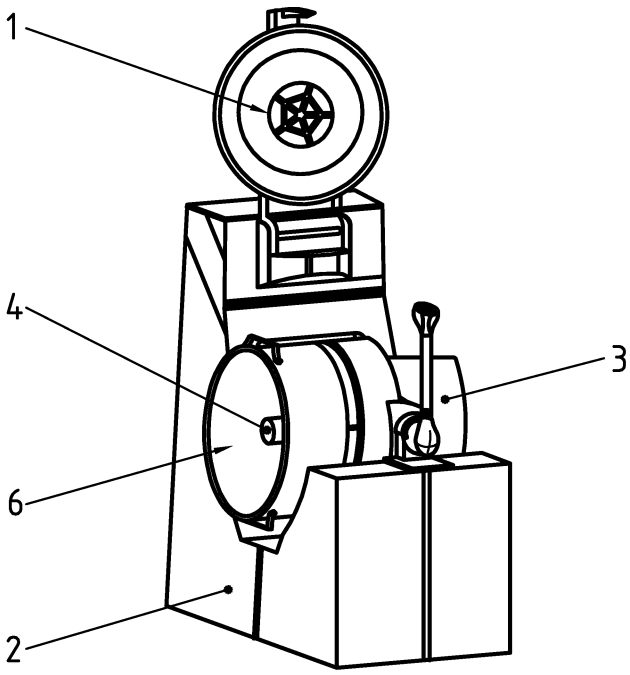


Key

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

Figure 1 — Example of a blender





Key
1 : Cover or lid
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Figure 2 — Example of a food processor

Figure 3 — Example of a food processor with tilting bowl

4 List of hazards

This standard covers the following significant hazards related to intended conditions of use.

NOTE If the machine is not used under the above conditions, the manufacturer should, when informed of such a situation, check by a new risk analysis that the preventive measures remain valid and sufficient.

4.1 Mechanical hazards

4.1.1 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;

— 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.

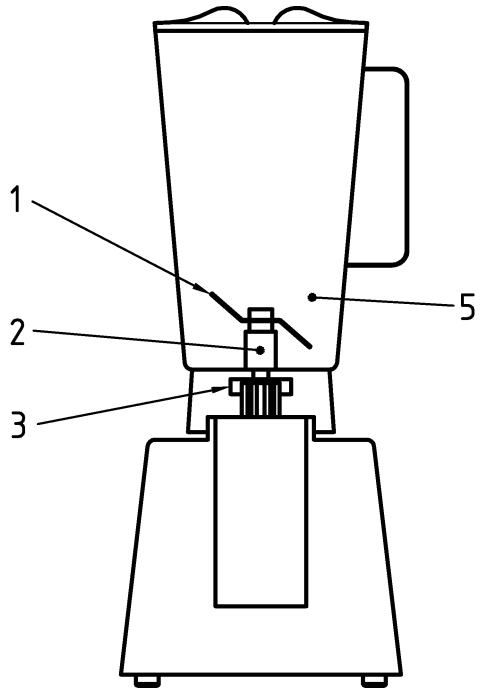

Figure 4a — On a blender

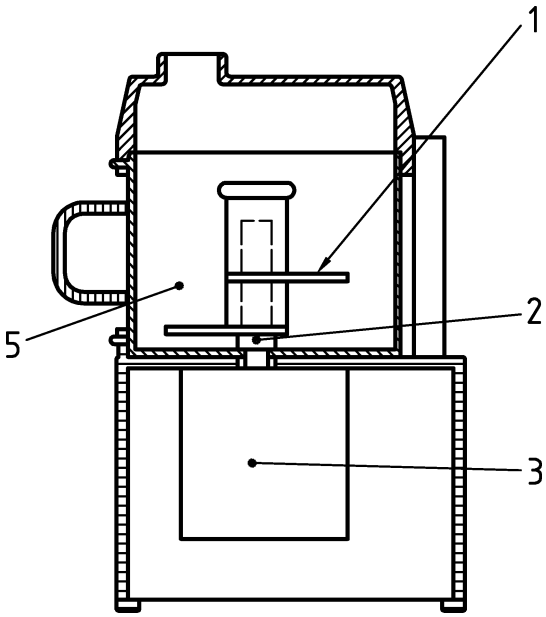

Figure 4b — On a food processor

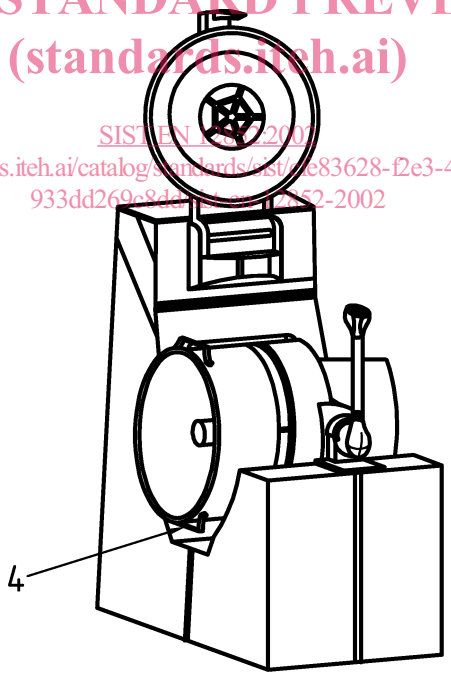

Figure 4c — Zone 4 - On a food processor with tilting bowl

Figure 4 — Danger zones

4.1.2 Loss of stability

Hazards of crushing and impact to the body.

4.1.3 Incorrect assembly and fitting

Hazards of cutting and impact to the fingers or hands.