



SLOVENSKI STANDARD

SIST EN 13621:2004+A1:2010

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Nadomešča:
SIST EN 13621:2004

Stroji za predelavo hrane - Odcejalniki za solato - Varnostne in higienske zahteve (vključno z dopolnilom A1)

Food processing machinery - Salad dryers - Safety and hygiene requirements

Nahrungsmittelmaschinen - Salatschleudern - Sicherheits- und Hygieneanforderungen

Machines pour les produits alimentaires - Essoreuses à salade - Prescriptions relatives à la sécurité et à l'hygiène

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97.040.50	Majhni gospodinjski aparati	Small kitchen appliances

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EUROPEAN STANDARD
NORME EUROPÉENNE
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Food processing machinery - Salad dryers - Safety and hygiene requirements

Machines pour les produits alimentaires - Essoreuses à salade - Prescriptions relatives à la sécurité et à l'hygiène

Nahrungsmittelmaschinen - Salatschleudern - Sicherheits- und Hygieneanforderungen

This European Standard was approved by CEN on 6 May 2004 and includes Amendment 1 approved by CEN on 18 March 2010.

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EN 13621:2004+A1:2010 (E)**Foreword**

This document (EN 13621:2004+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.

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of an identical text or by endorsement, at the latest by October 2010, and conflicting national standards shall be withdrawn at the latest by October 2010.

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 includes Amendment 1, approved by CEN on 2010-03-18.

This document supersedes EN 13621:2004.

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

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

- 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.

A1 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 Directives.

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

The use of salad dryers involves various mechanical and other hazards.

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

A1 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 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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EN 13621:2004+A1:2010 (E)**1 Scope**

1.1 This document specifies the safety and hygiene requirements for the design and manufacture of salad dryers taking account of installation, cleaning, removal of jammed food, feeding, maintenance and decommissioning. The spinning function is obtained by the rotation of a perforated basket in which the product being processed is placed.

It applies to machines:

- which are intended for use in the commercial and institutional catering industry;
- having a rotation speed between 300 rpm and 900 rpm;
- having a nominal output below 2 kW;
- having a nominal volume of the basket less than 100 l.

These machines can be stationary or movable.

The machines concerned by this document are those appliances which are intended for eliminating by spinning the water present on salad after washing. These machines can also be used for spinning other vegetables such as spinach, watercress, radish, French beans, etc.

The machines covered by this document are not intended to be cleaned with water jet.

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

NOTE If the machine is not used under above conditions, the manufacturer should verify, when he is informed of such situation, if the preventive measures remain valid (see 3.22 of EN ISO 12100-1:2003).

The feeding principle of the machine can be notably:

- manual loading into the basket left in position in the machine;
- placing in and withdrawal from the machine of the loaded basket.

1.2 Noise is not considered to be a significant hazard with salad dryers. This does not mean that the manufacturer of these machines is absolved from reducing noise and making a noise declaration. Therefore a noise test code is proposed in Annex A.

1.3 Vibrations are not considered as a hazard with these machines.

1.4 This document is not applicable to the machines which are manufactured before the date of publication of this document by CEN.

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.

A1 EN 614-1:2006, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 953, *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 1088, *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, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN ISO 3744:2009, *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, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 11201:2009, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane (ISO 11201:1995, including Cor 1:1997)*

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 13849-1:2008, *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 upper and lower limbs (ISO 13857:2008) ^(A1)*

3 Terms and definitions – Description

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ^(A1) EN ISO 12100-1:2003 ^(A1) and in ^(A1) EN 1672-2:2005 ^(A1) and the following apply.

3.1.1

nominal load

mass of unsoaked lettuce, in kilograms, intended by the manufacturer to be processed

3.2 Description

3.2.1 Classes of machines

For those machines, two classes are defined:

— class 1: machines having a rotation speed up to 500 rpm;

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— class 2: machines having a rotation speed above 500 rpm up to 900 rpm.

3.2.2 Principal elements of a salad dryer:

Salad dryers are made up as show in Figure 1 of:

- tank (1) for receiving the spinning water;
- perforated basket (generally removable) (2) in which the product to be spun is placed;
- basket drive device (3);
- rotation generating device (4);
- electrical equipment (5);
- water evacuation device (6);
- if necessary: a cover (7) intended to prevent from splashes. This cover is not a safeguard against mechanical hazards, excepted for class 2.

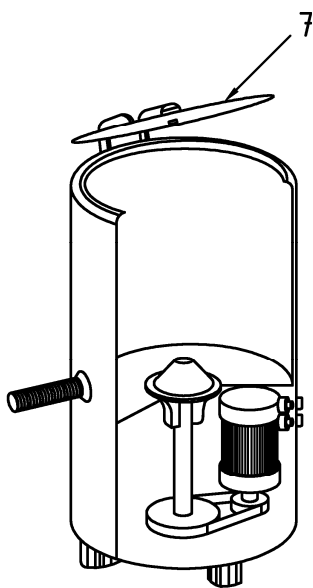


Figure 1.a – Dryer with a cover

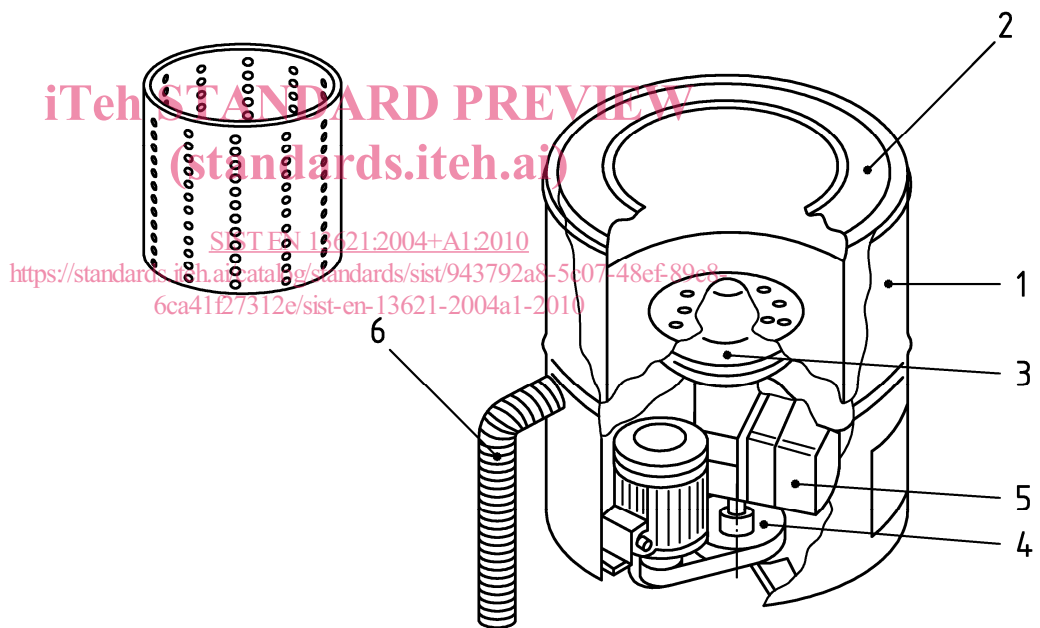


Figure 1.b – Dryer without a cover

Figure 1 — Example of a dryer

4 List of significant hazards

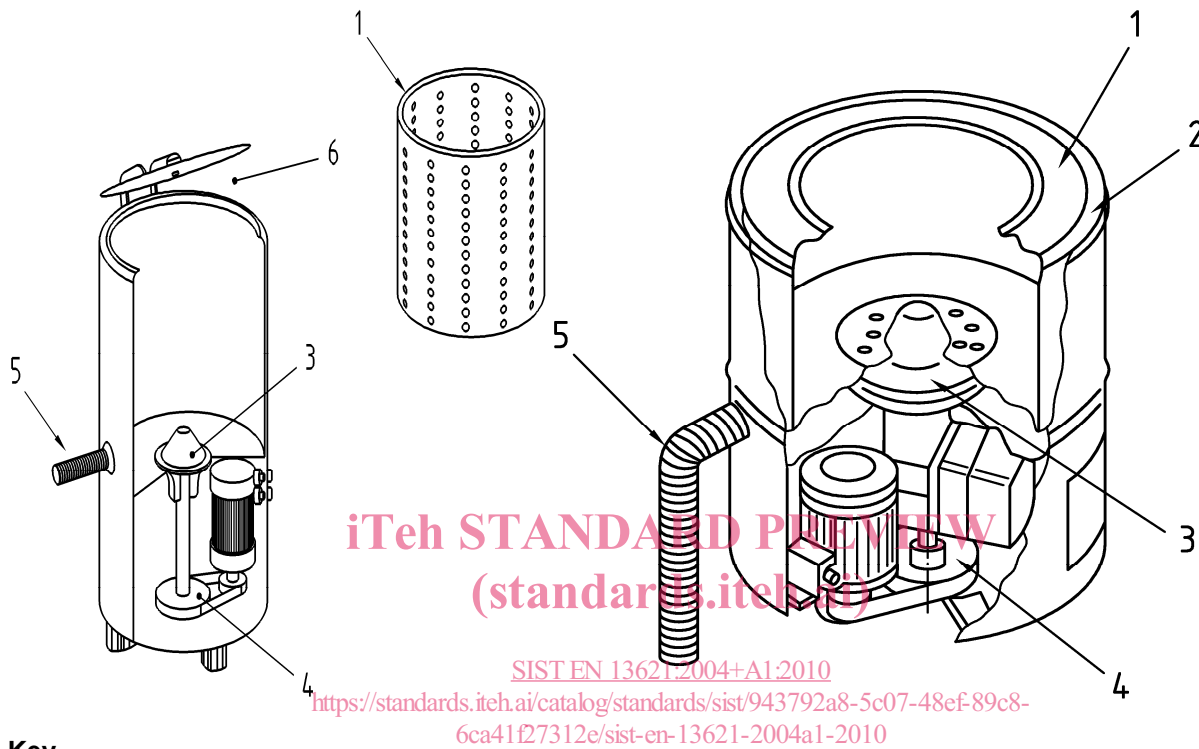
4.1 General

A1 This clause 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 to eliminate or reduce the risk. **A1**

4.2 Mechanical hazards

4.2.1 Access to the danger zones

Mechanical hazards arise from the risk of contact with the rotating parts.



Key

1 Zone 1	4 Zone 4
2 Zone 2	5 Zone 5
3 Zone 3	6 Zone 6

Figure 2.a — Dryer with a cover

Figure 2.b — Dryer without a cover

Figure 2 — Hazard zones

In the example in Figure 2, the hazard zones are:

- Zone 1: basket
Hazard of impact or abrasion to fingers;
- Zone 2: space between the tank and the rotating basket
Hazard of drawing in fingers;
- Zone 3: basket drive device
Hazard of impact or entanglement of fingers;
- Zone 4: rotation generating device
Hazard of crushing or drawing in fingers;

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- Zone 5: access to the rotation zone of the basket through the water evacuation device
Hazard of impact and abrasion to fingers;
- Zone 6: space between the lid of the tank and the cover in case of falling down of the cover
Hazard of crushing fingers.

4.2.2 Loss of stability

Hazard of crushing and impact.

4.2.3 Incorrect assembly and fitting

Hazard of impact for fingers and hands.

4.2.4 Inadequacy of mechanical strength

Hazard of breakage and ejection of parts especially when processing other vegetables than salad.

4.3 Electrical hazards

Hazard of shock by direct or indirect contact with live parts.

4.4 Hazards generated by neglecting hygiene in machine design

Inability to clean food contact and splash areas effectively and thoroughly.

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

NOTE See also EN 1672-2 which deals with hygiene risks to the operator.

4.5 Hazards generated by neglecting ergonomic principles in machine design

Lack of applying ergonomic principles can be anything that causes wrong operation of controls, physical damage due to over-reaching, heavy loads, awkward posture, etc.

5 Safety and hygiene requirements and/or measures**5.1 General**

Salad dryers shall comply with the safety requirements and/or protective measures of this Clause. In addition, they shall be designed according to the principles of EN ISO 12100 for hazards relevant but not significant, which are not dealt with by this document (e.g. sharp edges).

A1 NOTE For hazards which are to be reduced by the application of another standard such as EN 1672-2, EN 60204-1 and EN ISO 13857, the manufacturer should carry out a risk assessment to establish the requirements of that standard which are to be applied. This specific risk assessment is part of general risk assessment of the salad dryer. **A1**

A1 When fixed guards, or parts of the machine acting as such, are not permanently fixed e.g. by welding, their fixing systems shall remain attached to the guards or to the machine when the guards are removed. **A1**

Where the means of reducing the risk is by the physical arrangement or positioning of the installed dryer the manufacturer shall include in the information for use a reference to the reduction means to be provided, and to any limiting value of the requirement, and, if appropriate, to the means of verification.

Where the means of reducing the risk is by a safe system of working the dryer, the manufacturer shall include in the information for use details of the system and of the elements of training required by the operating personnel.

5.2 Mechanical hazards

5.2.1 General

For the machines covered by this document, the safety shall be in the first place intrinsically ensured by the design, the shape and the choice of materials, according to the requirements given below.

5.2.2 Access to the danger zones

5.2.2.1 Machines of class 1

5.2.2.1.1 Zone 1: basket

The inside and outside of the basket shall not present any sharp parts, roughness or raised parts likely to create a hazard of impact or abrasion.

If the impact or abrasion hazards is not withdrawn by design, the rotating basket shall disconnect itself immediately, as soon as its rotation becomes blocked, e.g. by using a frictional drive.

5.2.2.1.2 Zone 2: space between the tank and the basket

In any case the space between the tank and the basket shall be less than 8 mm or greater than 20 mm.

5.2.2.1.3 Zone 3: basket drive device

By design, the drive device shall not present any sharp parts, nor create impact or entanglement.

5.2.2.1.4 Zone 4: rotation generating device

Access to the danger zone shall be prevented by fixed guards complying with EN 953.

5.2.2.1.5 Zone 5: access to the rotation zone of the basket through the water evacuation device

The spinning water evacuation device shall be designed in such a manner that the introduction of a finger or of the hand into the pipe opening does not cause any jamming of the operator's fingers between the basket and the bottom of the tank (Table 4 of [A1](#) EN ISO 13857:2008 [A1](#) shall apply). In addition, this device shall be unable to be dismantled without the use of tools.

5.2.2.1.6 Zone 6: space between the tank and the cover

The cover shall be stable in full opening position (e.g. at least 10° over the limit of stability).

5.2.2.2 Machines of class 2

The requirements of 5.2.2.1.1 to 5.2.2.1.6 apply with the following additional requirements for zones 1, 2 and 3.

These machines shall have a stopping time less than 4 s or be equipped with an interlocked cover with guard locking.

[A1](#)) All the interlocking devices associated with guards shall comply with EN 1088.

The parts of the control system related to the interlocking shall meet at least category 1 of 6.2.2 of EN 954-1:1996 or present at least a performance level c defined in accordance with EN ISO 13849-1:2008. [A1](#))