



SLOVENSKI STANDARD

SIST EN 12463:2004

01-november-2004

Stroji za predelavo hrane - Polnilniki in pomožni stroji - Varnostne in higienske zahteve

Food processing machinery - Filling machines and auxiliary machines - Safety and hygiene requirements

Nahrungsmittelmaschinen - Füllmaschinen und Vorsatzmaschinen - Sicherheits- und Hygieneanforderungen

Machines pour les produits alimentaires - Machines à pousser et machines auxiliaires - Prescriptions relatives à la sécurité et à l'hygiène

Ta slovenski standard je istoveten z: EN 12463:2004

ICS:

67.260

Tovarne in oprema za
živilsko industrijo

Plants and equipment for the
food industry

SIST EN 12463:2004

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12463

August 2004

ICS 67.260

English version

Food processing machinery - Filling machines and auxiliary machines - Safety and hygiene requirements

Machines pour les produits alimentaires - Machines à pousser et machines auxiliaires - Prescriptions relatives à la sécurité et à l'hygiène

Nahrungsmittelmaschinen - Füllmaschinen und Vorsatzmaschinen - Sicherheits- und Hygieneforderungen

This European Standard was approved by CEN on 2 February 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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 12463:2004) 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 February 2005, and conflicting national standards shall be withdrawn at the latest by February 2005.

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 standard.

It is one of a series of standards for meat processing machinery, in compliance with EN 1672-2:1997 Annex C.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EN 12463:2004 (E)

0 Introduction

This document is a type C standard as stated in EN 1070.

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 This document applies for:

- filling machines with cylinder and piston,
- filling machines with feed intake hopper, feeder and loading device,
- auxiliary machines for filling machines.

This document does not apply to filling machines with cylinder and manual operation.

This document deals with all significant hazards, hazardous situations and events relevant to machines, appliances and machinery, when they are used as intended and under the conditions foreseen by the manufacturer (see Clause 4).

These significant hazards, hazardous situations and events exist during the whole life of filling machines.

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

Filling machines described in this document are no forming, filling and sealing machines as described in EN 415-3. Clipping machines are not covered by this document.

1.2 This document covers the following types of filling machines and auxiliary machines:

1.2.1 Filling machines with cylinder

- Filling machines with cylinder consist of piston, closing cover, machine frame accessory drive parts and electrical and hydraulic components.
- The material being processed will be fed by hand into the cylinder.

The distance H_1 from the floor (standing area) to the middle of the discharge port (filling horn) is > 975 mm (see Figure 1).

- Filling machines with cylinder will be switched on or off by a knee-operated lever switch.
- Filling machines with cylinder can be fitted with;
 - divider slide valve.
 - divider rotating valve.

1.2.2 Filling machines with feed intake hopper

- Filling machines with feed hopper intake (with or without infeed auger) consist of feeder on discharge side of the feed intake hopper, machine frame, accessory drive parts and electric, electronic or pneumatic components, depending on machine type.
- The material being processed will be fed by hand into the feeding hopper of the filling machine.
- Processing of larger quantities of filling material and the height of the filling machine with feed intake hopper can make it necessary to provide a loading device. The loading device is covered by this document.

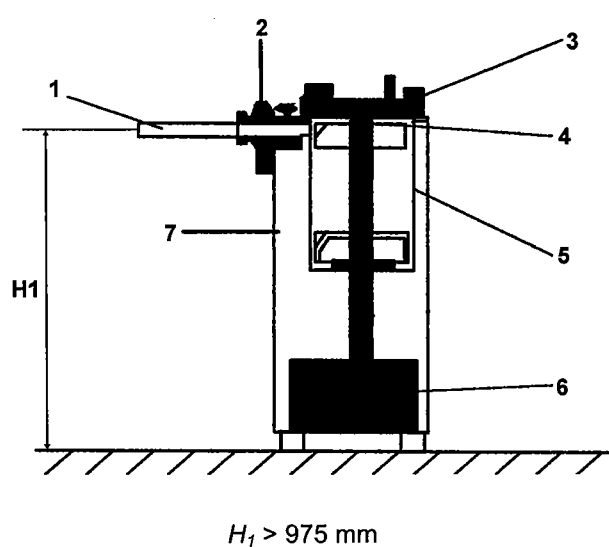
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- The distance H1 from the floor (standing area) to the middle of the discharge port (filling horn) is > 975 mm (see Figure 2).
- Filling machines will be switched on or off by knee-operated lever switches or hand operated switches and/or remote control signals.
- Filling machines with feed intake hopper can be equipped with;
 - divider device,
 - cover or photoelectric guard at the mouth of the feed intake hopper,
 - pressure activated trip bar or light barrier at the hopper edge,
 - divided feed intake hopper,
 - plough or counter auger,
 - interlocked step or interlocked ladder,
 - two hand control at the mouth of the feed intake hopper,
 - loading device.

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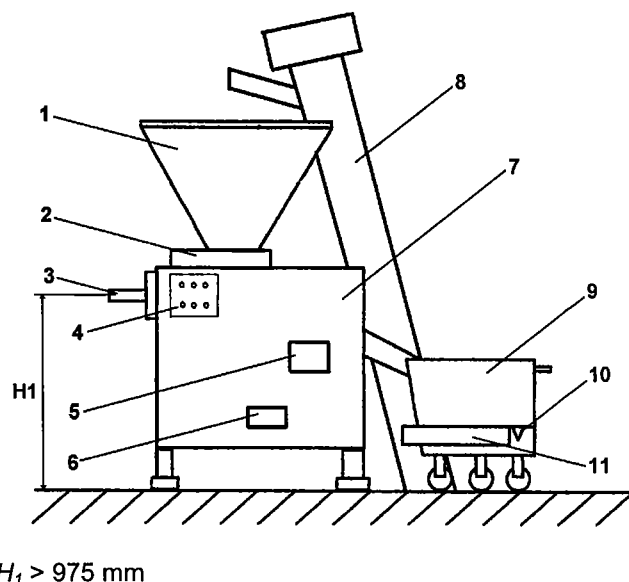
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**Key**

- 1 filling horn
- 2 divider rotating valve/divider rotating valve
- 3 closing cover
- 4 piston
- 5 cylinder
- 6 drive mechanism
- 7 ON / OFF switch, hood

Figure 1 — Assembly of a filling machine with piston

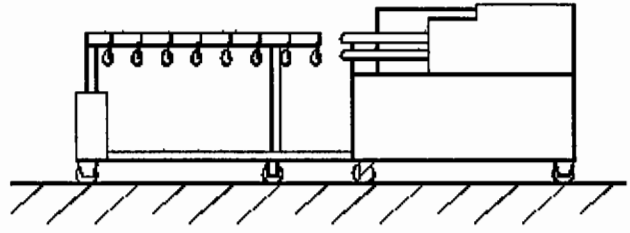
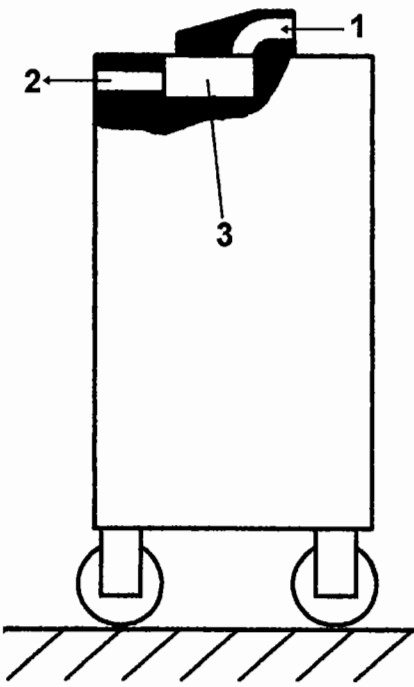
**Key**

- 1 feed intake hopper
- 2 feeder
- 3 filling horn
- 4 ON / OFF switch, hood
- 5 step, interlocked
- 6 intermediate step
- 7 drive mechanism
- 8 loading device
- 9 transport car
- 10 locking device
- 11 lifting device

Figure 2 — Assembly of a filling machine with feed intake hopper and loading device

1.2.3 Auxiliary machines

- Auxiliary machines consist of devices for filling, portioning, twisting, displacing, forming, mincing and of a drive system.
- Auxiliary machines do not operate independently. These machines will be actuated directly or by filling machines (see Figures 3 to 9).
- Auxiliary machines will be switched on or off by knee operated lever switches or hand operated switches and/or remote control signals.
- Auxiliary machines can be fitted with;
 - dividing device,
 - hanging device.



Key

- 1 inlet
- 2 outlet
- 3 feeder

Figure 3 — Auxiliary twisting machine

Figure 4 — Auxiliary portioning and hanging line

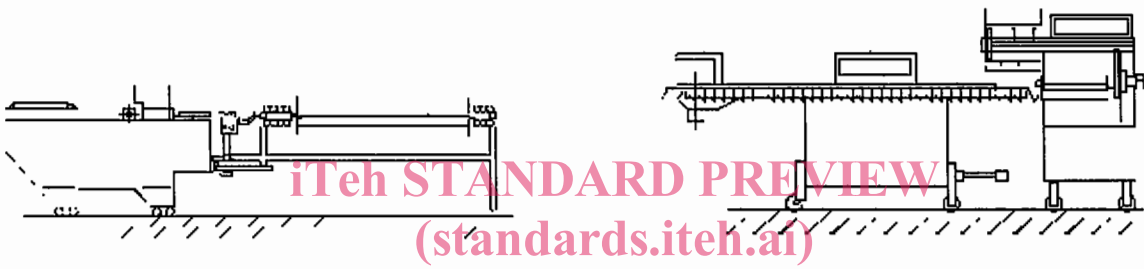
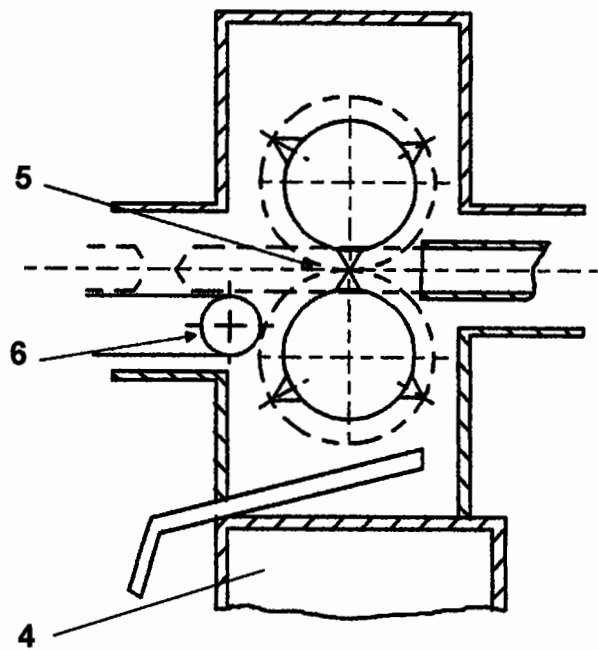
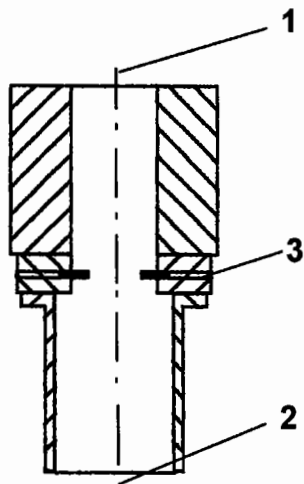


Figure 5 — Auxiliary portioning and hanging line **Figure 6 — Auxiliary portioning and hanging line**

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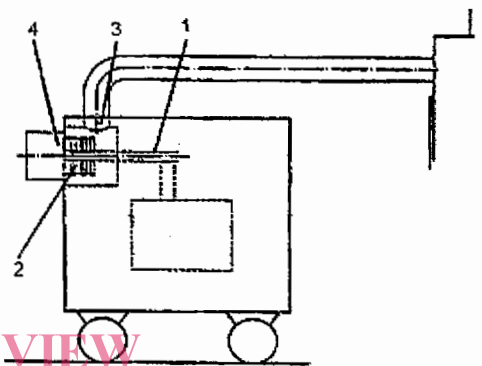
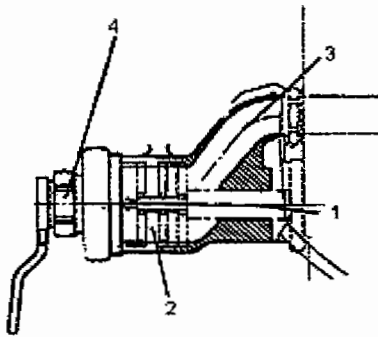


Key

- 1 inlet
- 2 outlet
- 3 forming device

- 4 base
- 5 forming device
- 6 conveyor belt

Figure 7 — Forming devices



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Key

- 1 drive shaft
- 2 set of cutting tools
- 3 feed intake canal
- 4 nut/plate

Key

- 1 drive shaft
- 2 set of cutting tools
- 3 feed intake canal
- 4 locking/plate

Figure 8 — Ancillary mincing machine driven by the filling machines

Figure 9 — Ancillary mincing machine with direct drive

EN 12463:2004 (E)**1.3 Intended use**

During the production of this document the following assumptions were made:

Filling machines are installed in a sufficiently lighted place.

They are used only by designated and skilled operators.

Filling machines are not foreseen to be cleaned with pressurized water (e.g. tap water).

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 ISO 12100-2:2003, *Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles (ISO 12100-2:2003)*

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

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, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design*

EN 999, *Safety of machinery - The positioning of protective equipment in respect of approach speeds of parts of the human body*

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 1050, *Safety of machinery - Principles for risk assessment*

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*

prEN 13288, *Food processing machinery - Bowl lifting and tilting machines - Safety and 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)*

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EN 61496-1, *Safety of machinery - Electro-sensitive protective equipment - Part 1: General requirements and tests (IEC 61496-1:1997)*

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, *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 a 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, *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 document, the terms and definitions given in EN 1070:1998 and the following apply.

3.1

twisting device

device to separate one portion from the next by twisting

3.2

divider rotating valve

rotatable closing component

3.3

divider device

divider rotating valve, a divider slide valve

3.4

divider slide valve

movable closing plate

3.5

hanger device

device to suspend or transport the product

3.6

hanger

movable unit to convey the product onto a hanger device

3.7

ejector/extractor

device for detaching the set of cutting tools and the worm

3.8

extraction claw

tool for detaching the set of cutting tools and the worm

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3.9

design height

height of the feed intake hopper edge measured from the floor

3.10

loading device

lift-tilt device for lifting and tilting of transport cars or containers

3.11

casing brake

device for retaining and braking the product casing on the filling horn

3.12

casing holding device

device for holding and sealing product casings onto or in connection with the filling horn

3.13

casing clamp

device for centring and clamping the shirred product casing

3.14

feed intake hopper

container for receiving products to be processed with safety function

3.15

locking device

device for locking the transport car or container in the loading device

3.16

feeder

unit for product transport

3.17

plough

fixed curve-shaped counter-component to the infeed auger

3.18

divided hopper

feed intake hopper with a disconnecting point in the upper hopper part

3.19

protecting device against tilting

device to prevent lifting or toppling over of the machine

3.20

design dimension

sum of dimensions measured from the floor (standing area), in the case of steps, intermediate steps or ladders from the standing area to the feed intake hopper edge and from the feed intake hopper edge to the first danger point in the feed intake hopper

3.21

piston

moving part for pressing out the product

3.22

light barrier

optical-electric safety component

3.23**blade**

cutting tool with one or several blades

3.24**rotating head**

hinged installation with one or more filling horns

3.25**trip bar**

movable device with safety function

3.26**worm casing**

casing for holding the worm and the set of cutting tools

3.27**set of cutting tools**

rough-cutter, blade and hole plate for size reduction of product

3.28**protective hood**

movable safety device on the discharge outlet

3.29**hinged arm**

movable part of the lift-tilt device

3.30**counter auger**

fixed counter-component to the infeed auger

3.31**transport car**

mobile device for holding the processed or to the processed product

3.32**cutting device**

device (e.g. knife, wire, scissor) for the cutting of portions filled into product casings

3.33**overtravelling guard**

device for automatic movement stopping

3.34**removal**

device for removing the product in the product casing

3.35**closing Cover**

closing plate with safety function at the opening of the cylinder

3.36**lock nut**

device for locking the set of cutting tools in the cutting chamber

3.37**infeed auger**

rotating conveying element in the feed intake hopper

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