



# SLOVENSKI STANDARD SIST EN 50636-2-91:2015

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**Gospodinjski in podobni električni aparati - Varnost - 2-91. del: Posebne zahteve za ročno vodljive in prenosne motorne kose za trate in robove trat**

Household and similar electrical appliances - Safety -- Part 2-91: Particular requirements for walk-behind and hand-held lawn trimmers and lawn edge trimmers

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke -- Teil 2-91: Besondere Anforderungen für handgeführte Rasentrimmer und Rasenkantenschneider

Appareils électrodomestiques et analogues - Sécurité -- Partie 2-91: Règles particulières pour les coupe-gazon et les coupe-bordures portatifs et à conducteur à pied

**Ta slovenski standard je istoveten z: EN 50636-2-91:2014**

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**ICS:**

13.120	Varnost na domu	Domestic safety
65.060.70	Vrtnarska oprema	Horticultural equipment

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EUROPEAN STANDARD

**EN 50636-2-91**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2014

ICS 65.060.70

Supersedes EN 60335-2-91:2003

English Version

## Household and similar electrical appliances - Safety - Part 2-91: Particular requirements for walk-behind and hand-held lawn trimmers and lawn edge trimmers

Appareils électrodomestiques et analogues - Sécurité -  
Partie 2-91: Règles particulières pour les coupe-gazon et  
les coupe-bordures portatifs et à conducteur à pied

Sicherheit elektrischer Geräte für den Hausgebrauch und  
ähnliche Zwecke - Teil 2-91: Besondere Anforderungen für  
handgeführte Rasentrimmer und Rasenkantenschneider

This European Standard was approved by CENELEC on 2013-09-02. CENELEC 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.

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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 CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## Foreword

This document (EN 50636-2-91:2014) has been prepared by CLC/TC 116 "Safety of motor-operated electric tools".

The following dates are fixed:

- latest date by which this document has to be implemented (dop) 2014-12-20  
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2016-09-02

This document supersedes EN 60335-2-91:2003.

EN 60335-2-91:2013 includes the following significant technical changes:

- rewording of some clauses;
- alignment to EN 60335-1:2012;
- improvement of Clause 20.102.

This document is to be used in conjunction with EN 60335-1:2012, "*Household and similar electrical appliances — Safety — Part 1: General requirements*".

When "Part 1" is mentioned in this standard, it refers to EN 60335-1:2012.

This document supplements or modifies the corresponding clauses in Part 1, so as to convert that publication into the European Standard "*Safety requirements for walk-behind and hand-held lawn trimmers and lawn edge trimmers*".

Where a particular subclause of Part 1 is not mentioned in document, that subclause applies as far as is relevant. Where this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

Compliance with the relevant clauses of Part 1 together with this document provides one means of conforming to the specified essential health and safety requirements of the Directive.

This European Standard follows the overall requirements of EN ISO 12100.

**Warning:** Other requirements arising from other EU Directives can be applicable to the products falling within the scope of this European Standard.

The following numbering system is used:

- subclauses that are numbered starting from 101 are additional to those in Part 1;
- additional annexes are lettered AA, BB, etc.;

NOTE In this European Standard the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- explanatory matter: in smaller roman type.

Words in **bold** in the text are defined in clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

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## Introduction

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

The machinery concerned and the extent to which hazards, hazardous situations and events are covered is as 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 other standards, for machines which have been built and designed to the provisions of this type C standard.

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## 1 Scope

This clause of Part 1 is replaced by the following.

This European Standard specifies safety requirements and their verification for the design and construction of electric powered **walk-behind** and **hand-held lawn trimmers** and **lawn edge trimmers**, with **cutting element(s)** of non-metallic filament line or freely pivoting non-metallic cutter(s), with a kinetic energy of not more than 10 J each, used by a standing operator for cutting grass, their **rated voltage** being not more than 250 V for a.c. or 75 V d.c..

NOTE 101 The method of calculating the kinetic energy for the purposes of this standard is given in 22.103.

In this European Standard, **hand-held** and **walk-behind lawn trimmers** and **lawn edge trimmers** are referred to collectively as machine(s).

This European Standard does not apply to

- scissor type or **lawn trimmers** and **lawn edge trimmers** with **cutting means** other than those described above;
- **lawn trimmers** and **lawn edge trimmers** with collecting devices;
- self-propelled **lawn trimmers** or **lawn edge trimmers**;

EMC and environmental aspects, except noise, have not been considered in this European Standard.

This European Standard does not apply to chargers as covered by EN 60335-2-29.

This European Standard does not apply to batteries as covered by EN 62133.

This European Standard deals with all the significant hazards presented by **hand-held** and **walk-behind lawn trimmers** and **lawn edge trimmers** when they are used as intended and under conditions of misuse which are reasonably foreseeable.

## 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

EN 28662-1:1992, *Hand-held portable power tools — Measurement of vibrations at the handle — Part 1: General (ISO 8662-1:1988)*

EN 60068-2-75, *Environmental testing — Part 2-75: Tests — Test Eh: Hammer tests (IEC 60068-2-75)*

EN 60320 (all parts), *Appliance couplers for household and similar general purposes (IEC 60320)*

EN 60335-1:2012, *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2010, modified)*

EN 62233:2008, *Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure (IEC 62233:2005, modified)*

EN ISO 354:2003, *Acoustics — Measurement of sound absorption in a reverberation room (ISO 354:2003)*

EN ISO 3744:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane (ISO 3744:2010)*

EN ISO 3767-1:2000, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols (ISO 3767-1:1998)*

EN ISO 3767-3, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 3: Symbols for powered lawn and garden equipment (ISO 3767-3)*

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

EN ISO 11201:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections (ISO 11201:2010)*

EN ISO 11688-1:2009, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

ISO 11684:1995, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Safety signs and hazard pictorials — General principles*

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### 3 Terms and definitions [f6a9d7872ec3/sist-en-50636-2-91-2015](https://standards.iteh.ai/catalog/standards/sist/06b17a83-655f-4cb0-a19e-f6a9d7872ec3/sist-en-50636-2-91-2015)

This clause of Part 1 is applicable except as follows.

#### 3.1.9

*Replacement:*

#### 3.1.9

##### **normal operation**

operation of the machine at **rated voltage** with the load necessary to attain **rated power input**

#### 3.5.2

*Replacement:*

#### 3.5.2

##### **hand-held trimmer**

machine which is supported by hand, possibly assisted by wheel(s), skids or harness etc. and constructed such that it cannot maintain its operating position without being held by an operator

*Addition:*

#### 3.101

##### **walk-behind trimmer**

machine which is ground supported, controlled by an operator walking behind and constructed such that it maintains its operating position without being held by an operator

**3.102****lawn trimmer**

grass trimming machine where the **cutting means** operates in a plane approximately parallel to the ground

**3.103****lawn edge trimmer**

grass trimming machine where the **cutting means** operates in a plane approximately perpendicular to the ground

**3.104****cutting means**

mechanism used to provide the cutting action in which one or more **cutting elements**, cutting by impact, rotate about an axis normal to the cutting plane

**3.105****cutting element**

single non-metallic filament line or freely pivoting non-metallic cutter

**3.106****cutting head**

support system for the **cutting element**

**3.107****cutting means control**

device activated by the operator's hand or finger, for controlling the **cutting mean's** movement

**3.108****power switch**

switch that controls the primary operating means of the machine

**3.109****no-load**

operation of the machine at **rated voltage** with new **cutting means**, extendable non-metallic filament line being trimmed to the maximum cutting length less 5 mm

**4 General requirement**

This clause of Part 1 is applicable.

**5 General conditions for the tests**

This clause of Part 1 is applicable except as follows:

**5.2 Addition**

The machine used for the tests of Clause 18 shall not be used for other tests.

**6 Classification**

This clause of Part 1 is applicable except as follows.

**6.1 Replacement:**

Machines shall be of **class II** or **class III**.

*Compliance is checked by inspection and by the relevant tests.*

## 6.2 Addition:

**Walk-behind trimmers of class II** or with **class II** equipment shall be classified at least as IPX4.

## 7 Marking and instructions

This clause of Part 1 is applicable except as follows.

### 7.1 Addition:

*Add the following new indents:*

- business name and full address of the manufacturer and, where applicable his authorized representative;
- year of construction;
- designation of the machine,  
designation of machine may be achieved by a combination of letters and/or numbers. The designation may be provided in the form of a code, providing that this code is explained by giving the explicit designation such as “lawn trimmer”, “lawn edge trimmer” etc. in the instructions supplied with the machine;

NOTE 1 An example of such code is “A123B”.

- designation of series or type, allowing the technical identification of the product. This may be achieved by a combination of letters and/or numbers and may be combined with the designation of machine;

NOTE 2 The term “designation of series or type” is also known as model number.

- mandatory markings;

NOTE 3 For machines and their related products intended to be put on the market in the EEA, CE-marking as defined in the applicable European Directive(s), e.g. the Machinery Directive.

*Add the following new paragraphs:*

The following warnings shall be located in easily visible positions, indicating:

#### WARNING:

- Read instruction manual.
- Keep bystanders away.
- Wear ear protection.

Controls which may give rise to a hazard (e.g. cutting means control in accordance with 22.40) when operated shall be marked or so placed as to indicate clearly which part of the machine they control.

If the guarding is less than a total of 360°, the direction of rotation of the **cutting element(s)** shall be marked on the **machine**.

Except for **walk-behind lawn trimmers** with 360 degree guarding, the machine shall also be marked with the following:

- Wear eye protection.

Mains operated machines shall also be marked with the substance of the following:

- Disconnect the mains plug if the cord becomes damaged or entangled.

Additionally, **hand-held lawn trimmers** and **hand-held lawn edge trimmers** shall be marked with the following:

- Do not expose to rain.

Marking giving cautionary information shall be located as close as practicable to the relevant hazard. Such marking shall either be in one of the official languages of the country in which the machine is to be sold or the safety signs and symbols according to Annex AA shall be used. Symbols according to EN ISO 3767-1, EN ISO 3767-3 and/or ISO 11684 may also be used, as appropriate. Colours shall be in accordance with EN ISO 3767-1 and EN ISO 3767-3 and/or ISO 11684 as appropriate unless the symbols are cast, embossed or stamped when colours are not required. If symbols and/or safety signs are used, their significance shall be described in the instruction manual.

**7.9** This clause of Part 1 is not applicable.

#### **7.12 Replacement:**

An instruction manual shall be supplied with the machine, giving operating, servicing, maintenance and safety instructions that comply as appropriate with EN ISO 12100:2010, 6.4. The words 'Original instructions' shall appear on the language version(s) verified by the manufacturer or his authorised representative. Where no 'Original instructions' exist in the official language(s) of the country where the machine is to be used, a translation into that/those language(s) shall be provided by the manufacturer or his authorised representative or by the person bringing the machine into the language area in question. The translations shall bear the words 'Translation of the original instructions', and they shall be accompanied by a copy of the 'Original instructions'.

This instruction manual shall include:

- a) a repeat of those warnings required to be marked on the machine together with further explanation, where appropriate. Where safety signs are used in the marking on the machine, their function shall be explained;
- b) a warning to never allow **children**, persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge or people unfamiliar with these instructions to use the machine, local regulations may restrict the age of the operator;
- c) a warning to never operate the machine while people, especially **children**, or pets are nearby;
- d) a general description of the machine, the intended use, instructions for the proper use of the machine including advice on what the machine should be used for, how to use it for the intended purpose(s) and any reasonably foreseeable misuse thereof;
- e) warnings concerning ways - that experience has shown might occur - in which the machinery shall not be used;
- f) instructions for the proper assembly and disassembly of the machine for use, if the machine is not supplied in a completely assembled form;
- g) instructions for proper adjustment and any necessary user maintenance of the machine, including timescales and a warning of the danger of moving hazardous parts;
- h) instructions for the recommended replacement or repair of, or service attention to, critical components. Where parts are consumable, the part number of the spare part shall be specified;
- i) an instruction never to replace the non-metallic **cutting means** with metallic **cutting means**;
- j) instructions on the operation of all controls;
- k) information how to start the machine safely;
- l) instructions for the operating position and the correct and safe operation of the machine such as moving, safe positioning, handling, clearing blockages for use, preparation, maintenance and storage of the machine;
- m) an advice to not overreach and to keep the balance at all times, to always be sure of the footing on slopes and to walk, never run;
- n) a warning not to touch moving hazardous parts before the machine is disconnected from the mains and the moving hazardous parts have come to a complete stop;

- o) an advice on the use, length and type of extension cords to be used (not lighter than required by 25.7);
- p) information about the residual risks that remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted;
- q) instructions to always wear substantial footwear and long trousers while operating the machine;
- r) instructions to disconnect the supply (e.g. remove the plug from the mains or remove the disabling device)
  - 1) whenever the machine is left by the user;
  - 2) before clearing a blockage;
  - 3) before checking, cleaning or working on the machine;
  - 4) after striking a foreign object to inspect the machine for damage;
  - 5) if the machine starts to vibrate abnormally, for immediately check;
- s) instructions when, where and how to inspect the machine, the supply and extension cord for signs of damage or ageing and, if permitted, how to make repairs;
- t) a warning never to operate the machine with defective guards or shields, or without safety devices, or if the cord is damaged or worn;
- u) an advice not to connect a damaged cord to the supply or touch a damaged cord before it is disconnected from the supply for the reason that damaged cords can lead to contact with **live parts**;
- v) an advice to keep extension cords away from moving hazardous parts to avoid damages to the cords which can lead to contact with **live parts**;
- w) the operating method to be followed in the event of accident or breakdown;
- x) instructions how to disconnect the machine from the mains, if the cord becomes damaged or entangled during use;
- y) recommendations
  - 1) to connect the machine only to a supply circuit protected by a residual current device (RCD) with a tripping current of not more than 30 mA,
  - 2) to avoid using the machine in bad weather conditions especially when there is a risk of lightning;
- z) information about airborne noise emissions of the machine according to Annex CC, this includes:
  - 1) the A- weighted emission sound pressure level emitted by the machinery, where this exceeds 70 dB(A), where this level does not exceed 70 dB(A), this fact shall be indicated.
  - 2) the peak C-weighted instantaneous sound pressure value at machinery, where this exceeds 63 Pa (130 dB in relation to 20 µPa);
  - 3) the A-weighted sound power level emitted by the machinery, if the A-weighted emission sound pressure level exceeds 80 dB(A);
  - 4) the uncertainties surrounding the determined noise emission values according to Annex CC;
- aa) the vibration total value to which the hands are subjected as determined according to Annex BB, where this exceeds 2,5 m/s<sup>2</sup>; where this level does not exceed 2,5 m/s<sup>2</sup>, this fact shall be indicated;
- bb) the uncertainty of measurement for vibration value;

- cc) instructions how to proceed in case of abnormal vibrations;
- dd) mass in kilograms.

NOTE Examples of safety instructions are given Annex EE.

*Compliance shall be checked by inspection.*

**7.12.1** This clause of Part 1 is applicable.

**7.12.5 to 7.12.6** These clauses of Part 1 are applicable.

## **8 Protection against access to live parts**

This clause of Part 1 is applicable.

## **9 Starting of motor-operated appliances**

This clause of Part 1 is not applicable.

## **10 Power input and current**

This clause of Part 1 is not applicable.

## **11 Heating**

This clause of Part 1 is applicable except as follows.

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**11.4** Not applicable. <https://standards.iteh.ai/catalog/standards/sist/06b17a83-655f-4cb0-a19e-f6a9d7872ec3/sist-en-50636-2-91-2015>

**11.5** *Replacement:*

*The machine is operated in still air under **normal operation** until a steady state is reached, the torque being applied is measured. While the torque is maintained, the voltage is then adjusted to 0,94 times the **rated voltage** or 1,06 times the **rated voltage**, whichever is the most unfavourable.*

**11.6** Not applicable.

**11.7** *Replacement:*

*Machines are operated until steady conditions are established.*

## **12 Void**

## **13 Leakage current and electric strength at operating temperature**

This clause of Part 1 is only applicable for class II machines.

## **14 Transient overvoltages**

This clause of Part 1 is applicable.