SLOVENSKI STANDARD
SIST EN 50636-2-94:2015

01-april-2015

Gospodinjski in podobni električni aparati - Varnost - 2-94. del: Posebne zahteve za škarje za travo

Household and similar electrical appliances - Safety -- Part 2-94: Particular requirements for scissors type grass shears

Appareils électrodomestiques et analogues - Sécurité -- Partie 2-94: Règles particulières pour les coupe-gazon de type ciseaux

Ta slovenski standard je istoveten z: EN 50636-2-94:2014

ICS:

13.120	Varnost na domu	Domestic safety
65.060.70	Vrtnarska oprema	Horticultural equipment

SIST EN 50636-2-94:2015 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50636-2-94

June 2014

ICS 65.060.70

English Version

Household and similar electrical appliances - Safety - Part 2-94: Particular requirements for scissors type grass shears

Appareils électrodomestiques et analogues - Sécurité - Partie 2-94: Règles particulières pour les coupe-gazon de type ciseaux

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke - Teil 2-94: Besondere Anforderungen für Grasscheren mit Scherblättern

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

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Ref. No. EN 50636-2-94:2014 E

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Foreword

This document (EN 50636-2-94:2014) 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 at national level by publication of an identical national standard or by endorsement (dop) 2014-12-20
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2016-09-30

EN 50636-2-94:2014 includes the following significant technical changes:

– alignment to the European Machinery Directive 2006/42/EC;

– alignment to EN 60335-1:2012.

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* ***scissors type grass shears***".

Where a particular subclause of Part 1 is not mentioned in this 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 Part 2 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.

Other harmonised standards referred to in this European Standard are listed in Annex ZC of Part 1 and this document. The annex lists the valid edition of those documents at the time of issue of this EN. All references are however to be understood as references to the latest edition.

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.

For the relationship with EU Directive 2006/42/EC, see informative Annex ZZ, which is an integral part of this document.

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

Introduction

This document is a type C standard as stated in EN ISO 12100:2010.

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.

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 **hand-held scissors type grass shears** with a maximum cutting width of 200 mm designed primarily for cutting grass, their **rated voltage** being not more than 250 V for a.c. or 75 V d.c.

In this European Standard the term “machine” means “electric powered scissors type grass shear”.

This European Standard does not apply to hedge trimmers as covered by EN 60745–2–15.

Requirements for chargers are covered by EN 60335-2-29:2004.

Requirements for batteries are covered by EN 62133:2003.

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

This European Standard deals with all the significant hazards presented by **hand-held scissors type grass shears** 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 12449:1999 [1)], *Copper and copper alloys – Seamless, round tubes for general purposes*

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

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

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

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

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 method for an essentially free field over a reflecting plane* (ISO 3744:2010)

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

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1) Superseded by EN 12449:2012.

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 3767-1:1998, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment – Symbols for operator controls and other displays – Part 1: Common symbols*

ISO 3767-3:1995, *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 7000, *Graphical symbols for use on equipment – Registered symbols*

EN ISO 7010, *Graphical symbols - Safety colours and safety signs - Registered safety signs* (ISO 7010)

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

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

3.1.9 *Replacement:*

3.1.9
normal operation
operation of the machine under the following conditions: the machine is operated at **rated voltage** with the load necessary to attain **rated power input**

3.5.2 *Replacement:*

3.5.2
hand-held machine
portable machine intended to be held in the hand during normal use, including machines which will not maintain their operating position unless supported, possibly with an **extension shaft** and/or assisted by wheel(s), skid(s) or similar

Addition:

3.101
width of cut
the effective cutting width of the cutting device measured from the inside edge of the first **blade tooth** or shear plate tooth to the inside edge of the last **blade tooth** or shear plate tooth, whichever is the greater (see Figure 101)

3.102
scissors type grass shears
grass-cutting machine with two blades where the one **cutter blade** reciprocates along a straight or curved path (see Figure 102)

3.103
blade tooth
part of the **cutter blade** which is sharpened to perform the shearing action (see Figure 101)

3.104
cutter blade
part of the **cutting means** having blade teeth which cut by shearing action against the teeth of the shear plate (see Figure 101)

3.105
cutting means
cutter blade and shear plate together with any supporting part(s), which together perform the cutting action

3.106
cutting means control
device, activated by the operator's hand or finger, for controlling the operation of the **cutting means**

3.107
no load
operation of the machine at **rated voltage** with the **cutting means** attached

3.108
extension shaft
optional shaft which is designed to be fitted to a **hand-held machine** to enable the operator to cut grass while in a standing position

3.109
power switch
switch that controls the primary operating means of the machine

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:*

A new machine shall be used for each of the tests of Clause 21.

6 Classification

This clause of Part 1 is applicable except as follows.

6.1 *Replacement:*

Mains operated machines shall be of one of the following classes with respect to protection against electric shock:

– class II or class III.

Battery powered machines incorporating battery chargers shall be class II. Other battery-powered machines shall be class III.

Compliance is checked by inspection and by the relevant tests.

6.2 *Addition:*

Class II machines shall be at least IPX4. Class III machines shall be at least IPX1.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 *Addition:*

Add the following 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 providing that this code is explained by giving the explicit designation such as “scissors type grass shear” 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.

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.

Add the following new paragraphs:

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

– Warning: Read instruction manual.

– Warning: Do not expose to rain.

– Warning: **Cutting means** continues to run after the motor is switched off.

– Warning: Keep bystanders away.

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

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

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 ISO 3767-1, ISO 3767-3 and/or ISO 11684 may also be used, as appropriate. Colours shall be in accordance with ISO 3767-1 and 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 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) instructions on the operation of all controls,

j) information how to start the machine safely,

k) 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,

l) an advice not to overreach and to keep balance at all times, to always be sure of footing on slopes and to walk, never run,

m) 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,

n) an advice on the use, length and type of extension cords to be used (not lighter than required by 25.7),

o) information about the residual risks that remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted,

p) instructions to always wear substantial footwear and long trousers while operating the machine,

q) instructions to disconnect the supply (e.g. remove the plug from the mains or remove the disabling device)

- whenever the machine is left by the user,

- before clearing a blockage,
- before checking, cleaning or working on the machine,
- after striking a foreign object to inspect the machine for damage,
- if the machine starts to vibrate abnormally, for immediately check,

r) 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,

s) a warning never to operate the machine with defective guards or shields, or without safety devices, or if the cord is damaged or worn,

t) 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**,

u) 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**,

v) the operating method to be followed in the event of accident or breakdown,

w) instructions how to disconnect the machine from the mains, if the cord becomes damaged or entangled during use,

x) recommendations

- 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,
- to avoid using the machine in bad weather conditions, especially when there is a risk of lightning,

y) information about airborne noise emissions of the machine according to Annex CC, this includes

- 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,
- the peak C-weighted instantaneous sound pressure value at machinery, where this exceeds 63 Pa (130 dB in relation to 20 µPa),
- the A-weighted sound power level emitted by the machinery, if the A-weighted emission sound pressure level exceeds 80 dB(A),

- the uncertainties surrounding the determined noise emission values according to Annex CC.

z) the vibration total value to which the hands are subjected as determined according to Annex BB, where this exceeds 2,5 m/s²; where this level does not exceed 2,5 m/s², this fact shall be indicated:

- the uncertainty of measurement for vibration value;
- instructions how to proceed in case of abnormal vibrations;
- 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.

11.4 Not applicable.

11.5 *Replacement:*

The machine is operated in still air under **normal operation** conditions 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**, or the mean of the **rated voltage range**, 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 applicable for class II machines.

14 Transient overvoltages

This clause of Part 1 is applicable.

15 Moisture resistance

This clause of Part 1 is applicable.

16 Leakage current and electric strength

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

17 Overload protection of transformers and associated circuits

This clause of Part 1 is applicable.