

# INTERNATIONAL STANDARD

**IEC**  
**60335-2-91**

Second edition  
2002-08

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**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*

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## 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*

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –**

**Part 2-91: Particular requirements for walk-behind  
and hand-held lawn trimmers and lawn edge trimmers**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

This part of International Standard IEC 60335 has been prepared by IEC subcommittee 61F: Safety of hand-held motor-operated electric tools, of IEC technical committee 61: Safety of household and similar electrical appliances.

This second edition cancels and replaces the first edition published in 1997. It constitutes a technical revision.

The text of this part of IEC 60335 is based on the following documents:

FDIS	Report on voting
61F/449/FDIS	61F/469/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments. It was established on the basis of the fourth edition (2000) of that standard.

NOTE 1 When “Part 1” is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Safety requirements for walk-behind and hand-held electric lawn trimmers and lawn edge trimmers.

Where a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. Where this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

NOTE 2 The following numbering system is used

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;

NOTE 3 The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small 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.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

## INTRODUCTION

It has been assumed in the drafting of this international standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules may differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

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## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2-91: Particular requirements for walk-behind and hand-held lawn trimmers and lawn edge trimmers

#### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of mains-operated **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 single-phase appliances and 480 V for other appliances.

NOTE 101 In this standard **hand-held** and **walk-behind lawn trimmers** and **lawn edge trimmers** are referred to collectively as appliances.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by all persons in and around the home. However, in general, it does not take into account

- the use of appliances by young children or infirm persons without supervision;
- playing with the appliance by young children.

NOTE 102 Attention is drawn to the fact that

- in many countries additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities and similar authorities.

NOTE 103 This standard does not apply to

- to scissor type or rigid bladed **lawn trimmers** or **lawn edge trimmers**.

#### 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

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 3864, *Safety colours and safety signs*

ISO 5395:1990, *Power lawn-mowers, lawn tractors, lawn and garden tractors, professional mowers and lawn and garden tractors with mowing attachments – Definitions, safety requirements and test procedures*

ISO 11448:1997, *Powered shredders and chippers – Definitions, safety requirements and test procedures*

EN 50144-2-15:2001, *Safety of hand-held electric motor operated tools – Part 2-15: Particular requirements for hedge trimmers*

### 3 Definitions

This clause of Part 1 is applicable except as follows.

#### 3.1.9 Replacement:

##### **normal operation**

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

#### 3.101

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

**portable appliance** intended to be held in the hand during normal use, including appliances which will not maintain their operating position unless supported, possibly assisted by wheels, skids or similar

#### 3.102

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

ground-supported, controlled by an operator walking behind

#### 3.103

##### **lawn trimmer**

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

#### 3.104

##### **lawn edge trimmer**

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

#### 3.105

##### **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

#### 3.106

##### **cutting element**

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

#### 3.107

##### **cutting head**

support system for the **cutting element**

### 4 General requirement

This clause of Part 1 is applicable.

### 5 General conditions for the tests

This clause of Part 1 is applicable.

## 6 Classification

This clause of Part 1 is applicable except as follows.

### 6.1 Replacement:

Appliances shall be of **class II** or **class III** with respect to protection against electric shock.

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

### 6.2 Addition:

**Walk-behind lawn trimmers** and **walk-behind lawn edge trimmers** shall be classified as IPX4.

## 7 Marking and instructions

This clause of Part 1 is applicable except as follows.

### 7.1 Addition:

Appliances shall be marked with their **rated power input**.

Appliances shall be marked with the substance of the following:

WARNING: Read operator's manual. Wear eye protection. Keep bystanders away.

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

Do not expose to moisture

Symbols according to ISO 3767-1 and ISO 3767-3 may be used as appropriate. Colours shall be in accordance with ISO 3864 unless the symbols are cast, embossed or stamped. Instead of written markings, symbols according to Annex BB are allowed.

### 7.12 Addition:

An instruction sheet shall be supplied with the appliance.

The instructions shall include

- those warnings required to be marked on the appliance together with further explanation, where appropriate. Where symbols or pictograms are used in the marking on the appliance, their function shall be explained;
- instructions for the proper assembly of the appliance for use, if the appliance is not supplied in a completely assembled form.
- instructions for proper adjustment and maintenance of the appliance, including a warning of the danger of rotating **cutting elements**, for example: "Attention! Danger! - The **cutting elements** continue to rotate after the motor is switched off". Where parts are consumable (e.g. cutter line), the part number of the replacement shall be specified;
- instructions for the safe operation of the appliance, including a recommendation that the appliance should be supplied via a Residual Current Device (RCD) with a tripping current of not more than 30 mA;
- Instructions on the operation of all controls;