

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –  
Part 4-4: Particular requirements for lawn trimmers, lawn edge trimmers, grass trimmers, brush cutters and brush saws**

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**Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité –**

**Partie 4-4: Exigences particulières pour les taille-gazon, les coupe-bordures, les coupe-herbes, les débroussailleuses et les débroussailleuses à lame de scie**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –****Part 4-4: Particular requirements for lawn trimmers, lawn edge trimmers, grass trimmers, brush cutters and brush saws**

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International Standard IEC 62841-4-4 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
116/468/FDIS	116/479/RVD

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 4-4 is to be used in conjunction with the first edition of IEC 62841-1:2014.



This Part 4-4 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for lawn trimmers, lawn edge trimmers, grass trimmers, brush cutters and brush saws.

Where a particular subclause of Part 1 is not mentioned in this Part 4-4, that subclause applies as far as reasonable. Where this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

The following print types are used:

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

The terms defined in Clause 3 are printed in **bold typeface**.

Subclauses, notes, tables and figures which are additional to those in Part 1 as well as Annexes of Part 1, except as described for Annex K and Annex L below, are numbered starting from 101.

Subclauses, notes, tables and figures in Annex K and Annex L which are additional to those in the main body of this Part 4-4 are numbered starting from 301.

A list of all parts of the IEC 62841 series, under the general title: *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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

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It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 36 months from the date of publication.



## INTRODUCTION

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents concerning prevention of inadvertent starting given in Subclause 21.18.101.

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# ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –

## Part 4-4: Particular requirements for lawn trimmers, lawn edge trimmers, grass trimmers, brush cutters and brush saws

### 1 Scope

This clause of Part 1 is applicable, except as follows:

*Addition:*

This document applies to hand-held and **walk-behind lawn trimmers** and **lawn edge trimmers**, used by a standing operator for cutting grass, weeds or similar soft vegetation, and **grass trimmers**, **brush cutters** and **brush saws** used by a standing operator for cutting grass, weeds, brush, bushes, saplings and similar vegetation.

This document does not apply to

- hand-held machines having a mass of 18 kg or greater;
- self-propelled **lawn trimmers** or **lawn edge trimmers**;
- scissors type **lawn trimmers** and **lawn edge trimmers**;
- machines equipped with metallic **cutting accessories** consisting of more than one piece, e.g. pivoting chains or flail blades; [IEC 62841-4-4:2020](https://standards.iteh.ai/catalog/standards/sist/3c2637d7-f7e5-4326-8fcc-507d05970271/iec-62841-4-4-2020)
- edgers with rigid and/or metallic cutting devices; <https://standards.iteh.ai/catalog/standards/sist/3c2637d7-f7e5-4326-8fcc-507d05970271/iec-62841-4-4-2020>

NOTE 101 Freely pivoting non-metallic **cutting elements** are considered not to be rigid cutting devices.

NOTE 102 Edgers with rigid or metal cutting devices will be covered by a future part of IEC 62841-4.

NOTE 103 Annex EE provides an informative summary of characteristics for **lawn trimmers**, **lawn edge trimmers**, **grass trimmers**, **brush cutters** and **brush saws**.

**Brush cutters** and **brush saws** covered by this document are designed only to be operated with the machine to the right of the operator.

### 2 Normative references

This clause of Part 1 is applicable, except as follows:

*Replacement of undated normative reference for ISO 3744:*

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*

*Addition:*

IEC 60664-3, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 60664-4, *Insulation coordination for equipment within low-voltage systems – Part 4: Consideration of high-frequency voltage stress*

ISO 354:2003, *Acoustics – Measurement of sound absorption in a reverberation room*

ISO 683-4:2016, *Heat-treatable steels, alloy steels and free-cutting steels – Part 4: Free-cutting steels*

ISO 7918:1995, *Forestry machinery – Portable brush-cutters and grass-trimmers – Cutting attachment guard dimensions*

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 22868:2011, *Forestry and gardening machinery – Noise test code for portable hand-held machines with internal combustion engine – Engineering method (Grade 2 accuracy)*

### 3 Terms and definitions

This clause of Part 1 is applicable, except as follows:

*Addition:*

#### 3.101 barrier

device attached to the machine, designed to maintain a minimum distance between the operator and the **cutting accessory** when the machine is being operated

#### 3.102 blade thrust

sudden sideways, forward or backward motion of the machine, which may occur when the **cutting accessory** jams or catches on an object such as a sapling or a tree stump

#### 3.103 brush cutter

machine with a rotating **cutting accessory** intended to cut weeds, scrub, brush, and similar vegetation

Note 101 to entry: See Figure 101.

#### 3.104 brush saw

machine with a rotating circular metal **cutting accessory** having peripheral cutting teeth, designed to cut wood, such as small trees and saplings, by continuously removing material

Note 101 to entry: See Figure 102.

#### 3.105 cutting accessory

rigid cutting device made of metal or plastic, used on **brush cutters** and **brush saws**

#### 3.106 cutting element

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

#### 3.107 cutting head

support and retention system for the **cutting means**

Note 101 to entry: **Cutting heads** are used on **lawn trimmers**, **lawn edge trimmers** and **grass trimmers**.

### 3.108

#### **cutting means**

assembly of non-metallic filament line(s) or freely pivoting non-metallic cutter(s) that rotates about an axis perpendicular to the cutting plane, used to provide the cutting action by one or more **cutting elements**

Note 101 to entry: **Cutting means** are used on **lawn trimmers**, **lawn edge trimmers** and **grass trimmers**.

### 3.109

#### **grass trimmer**

machine with a **cutting means**, intended to cut small weeds, grass or similar soft vegetation, where the **cutting means** operates in a plane approximately parallel to the ground

Note 101 to entry: See Figure 103.

### 3.110

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

**lawn trimmer** or **lawn edge trimmer** 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

### 3.111

#### **lawn edge trimmer**

machine with a **cutting means** for cutting grass or similar soft vegetation where the **cutting means** operates in a plane approximately perpendicular to the ground

Note 101 to entry: See Figure 104.

Note 102 to entry: The maximum kinetic energy for **cutting elements** on **lawn edge trimmers** is specified in 21.101.

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### 3.112

#### **lawn trimmer**

machine with a **cutting means** for cutting grass or similar soft vegetation where the **cutting means** operates in a plane approximately parallel to the ground

Note 101 to entry: See Figure 105.

Note 102 to entry: The maximum kinetic energy for **cutting elements** on **lawn trimmers** is specified in 21.101.

### 3.113

#### **maximum speed**

highest output speed attainable under all conditions of **normal use**, including no load

### 3.114

#### **operator presence sensor**

device to detect the presence of an operator's hand

### 3.115

#### **shaft**

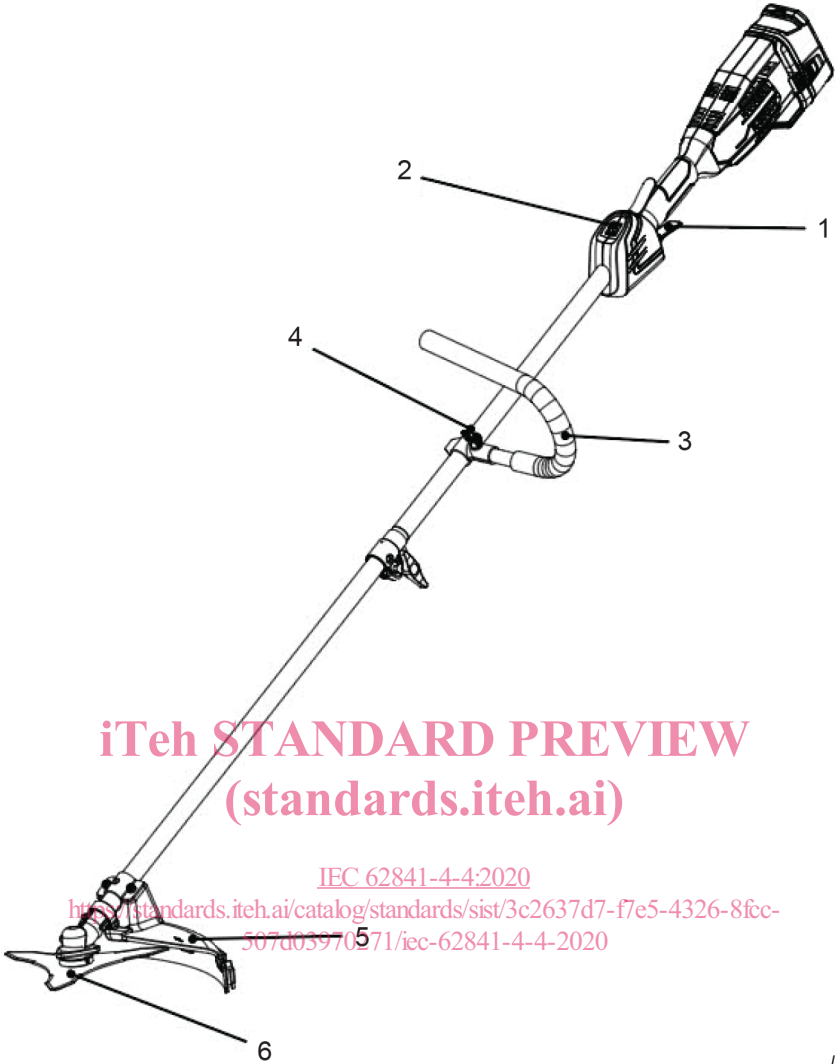
element of the machine that distances the **cutting accessory** or **cutting means** from the handles

### 3.116

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

**lawn trimmer** or **lawn edge trimmer** 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

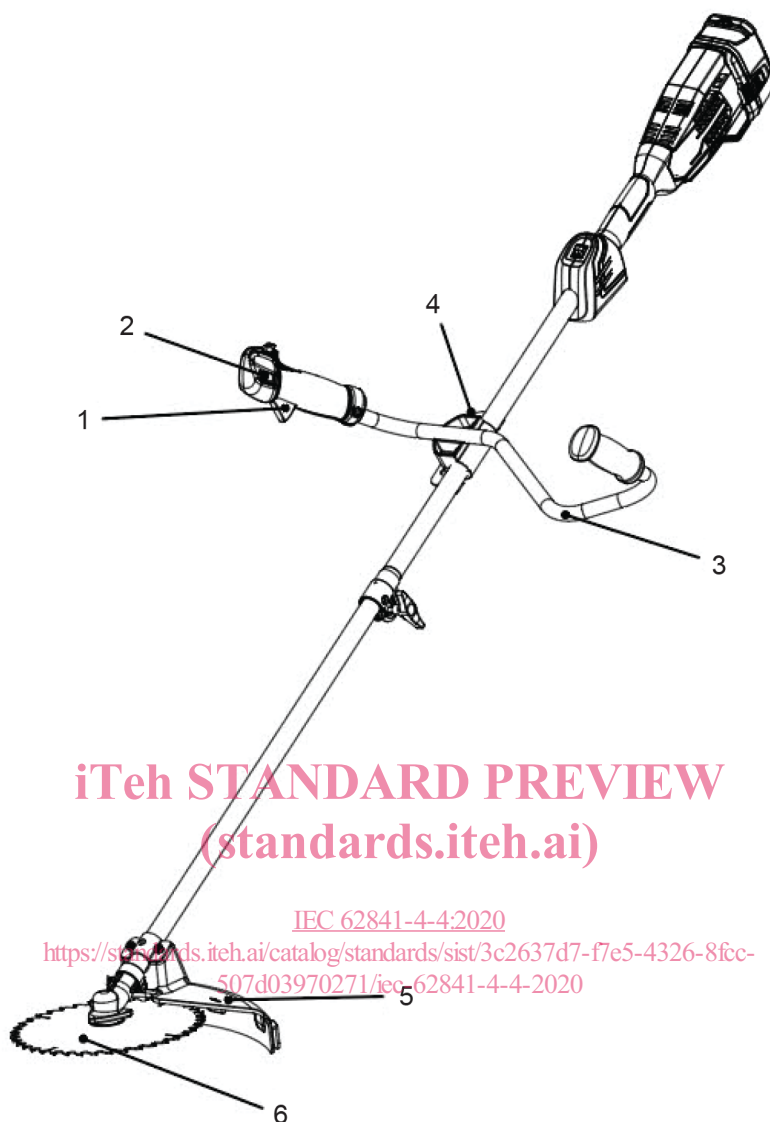
Note 101 to entry: See Figure 106.



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- Key**
- 1 **power switch**
  - 2 lock-off device
  - 3 **barrier**
  - 4 suspension point
  - 5 **cutting accessory guard**
  - 6 **cutting accessory**

**Figure 101 – Example of a brush cutter**

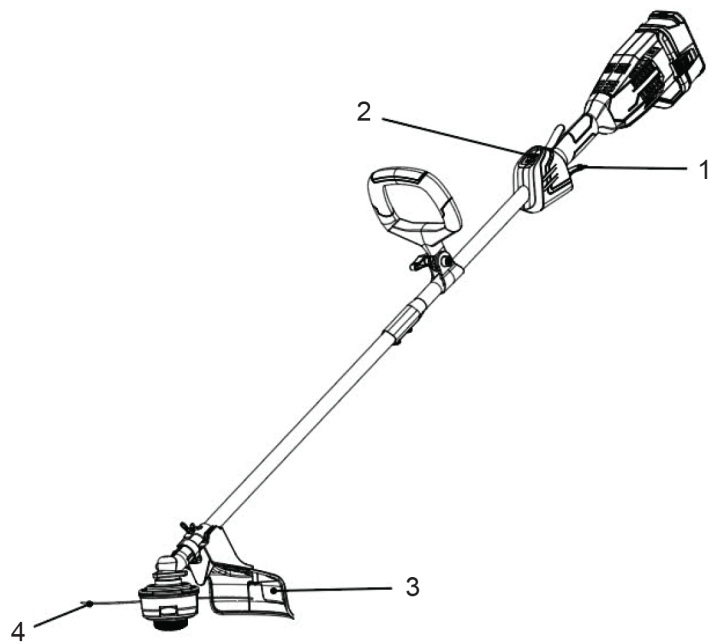


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**Key**

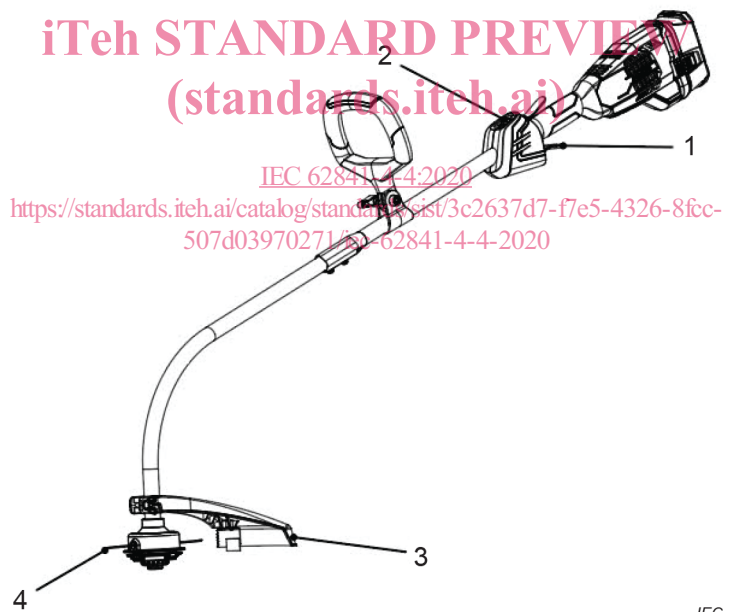
- 1 **power switch**
- 2 **lock-off device**
- 3 **barrier**
- 4 **suspension point**
- 5 **cutting accessory guard**
- 6 **cutting accessory**

**Figure 102 – Example of a brush saw**



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a) Grass trimmer with straight shaft



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b) Grass trimmer with curved shaft

**Key**

- 1 **power switch**
- 2 **lock-off device**
- 3 **cutting means guard**
- 4 **cutting means**

**Figure 103 – Examples of grass trimmers**