



UL 62841-4-2

STANDARD FOR SAFETY

Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery – Safety – Part 4-2: Particular Requirements For Hedge Trimmers

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UL Standard for Safety for Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery – Safety – Part 4-2: Particular Requirements For Hedge Trimmers, UL 62841-4-2

First Edition, Dated September 13, 2019

Summary of Topics

Adoption Of The First Edition Of IEC 62841-4-2, Standard For Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery – Safety – Part 4-2: Particular Requirements For Hedge Trimmers As The First Edition Of UL 62841-4-2

This standard is an adoption of IEC 62841-4-2, Edition 1, published by the IEC December 2017 including Corrigendum 1 of IEC 62841-4-2, dated June 2018.

The new requirements are substantially in accordance with Proposal(s) on this subject dated January 25, 2019 and June 14, 2019.

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CSA C22.2 No. 62841-4-2:19
First Edition
(IEC 62841-4-2:2017, MOD)



Underwriters Laboratories Inc.
UL 62841-4-2
First Edition

Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery – Safety – Part 4-2: Particular Requirements For Hedge Trimmers

September 13, 2019

This national standard is based on publication IEC 62841-4-2, First Edition (2017), including Corrigendum 1 dated June 2018.

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ANSI/UL 62841-4-2-2019



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Preface

This is the harmonized CSA Group and UL Standard For Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery – Safety – Part 4-2: Particular Requirements For Hedge Trimmers. It is the First edition of CSA C22.2 No. 62841-4-2 and the First edition of UL 62841-4-2.

This harmonized standard is based on IEC Publication 62841-4-2: First edition, Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery – Safety – Part 4-2: Particular Requirements For Hedge Trimmers, issued December 2017. IEC 62841-4-2 is copyrighted by the IEC.

This harmonized standard was prepared by CSA Group and Underwriters Laboratories Inc. (UL). The efforts and support of the International Harmonization Committee (IHC) for the adoption of the IEC series of standards for Hand-Held, Motor-Operated, and Transportable Tools and Lawn and Garden Machinery UL are gratefully acknowledged.

This standard is considered suitable for use for conformity assessment within the stated scope of the standard.

This standard was reviewed by the CSA Subcommittee on Safety of Hand-Held Motor-Operated Electric Tools, under the jurisdiction of the CSA Technical Committee on Consumer and Commercial Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee. This standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

Application of Standard

Where reference is made to a specific number of samples to be tested, the specified number is to be considered a minimum quantity.

Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.

CSA C22.2 No. 62841-4-2 is to be used in conjunction with the First edition of CAN/CSA-C22.2 No. 62841-1. The requirements for hedge trimmers are contained in this Part 4 Standard and CAN/CSA-C22.2 No. 62841-1. Requirements of this Part 4 Standard, where stated, amend the requirements of CAN/CSA-C22.2 No. 62841-1. Where a particular subclause of CAN/CSA-C22.2 No. 62841-1 is not mentioned in CSA C22.2 No. 62841-4-2, the CAN/CSA-C22.2 No. 62841-1 subclause applies.

UL 62841-4-2 is to be used in conjunction with the First edition of UL 62841-1. The requirements for hedge trimmers are contained in this Part 4 Standard and UL 62841-1. Requirements of this Part 4 Standard, where stated, amend the requirements of UL 62841-1. Where a particular subclause of UL 62841-1 is not mentioned in UL 62841-4-2, the UL 62841-1 subclause applies.

Level of harmonization

This standard adopts the IEC text with national differences.

This standard is published as an equivalent standard for CSA Group and UL.

An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

All national differences from the IEC text are included in the CSA Group and UL versions of the standard. While the technical content is the same in each organization's version, the format and presentation may differ.

Reasons for Differences From IEC

National differences from the IEC are being added in order to address safety and regulatory situations present in the US and Canada.

Interpretations

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

IEC Copyright

For CSA Group, the text, figures, and tables of International Electrotechnical Commission Publication 62841-4-2, Electric Motor-Operated Hand-Held Tools, Transportable Tools And Lawn And Garden Machinery – Safety – Part 4-2: Particular Requirements For Hedge Trimmers, copyright 2017, are used in this standard with the consent of the International Electrotechnical Commission. The IEC Foreword is not a part of the requirements of this standard but is included for information purposes only.

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NATIONAL DIFFERENCES

National Differences from the text of International Electrotechnical Commission (IEC) Publication 62841-4-2, Electric Motor-Operated Hand-Held Tools, Transportable Tools and Lawn and Garden Machinery – Safety – Part 4-2: Particular Requirements for Hedge Trimmers, copyright 2017, are indicated by notations (differences) and are presented in bold text. The national difference type is included in the body.

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

DR – These are National Differences based on the **national regulatory requirements**.

D1 – These are National Differences which are based on **basic safety principles and requirements**, elimination of which would compromise safety for consumers and users of products.

D2 – These are National Differences from IEC requirements based on existing **safety practices**. These requirements reflect national safety practices, where empirical substantiation (for the IEC or national requirement) is not available or the text has not been included in the IEC standard.

DC – These are National Differences based on the **component standards** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE – These are National Differences based on **editorial comments or corrections**.

Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:

Addition / Add - An addition entails adding a complete new numbered clause, subclause, table, figure, or annex. Addition is not meant to include adding select words to the base IEC text.

Modification / Modify - A modification is an altering of the existing base IEC text such as the addition, replacement or deletion of certain words or the replacement of an entire clause, subclause, table, figure, or annex of the base IEC text.

Deletion / Delete - A deletion entails complete deletion of an entire numbered clause, subclause, table, figure, or annex without any replacement text.

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FOREWORD

ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY – PART 4-2: PARTICULAR REQUIREMENTS FOR HEDGE TRIMMERS

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62841-4-2 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

The text of this standard is based on the following documents:

FDIS	Report on voting
116/346/FDIS	116/352/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 4-2 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This Part 4-2 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for hedge trimmers.

Where a particular subclause of Part 1 is not mentioned in this Part 4-2, that subclause applies as far as relevant. 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, 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 4-2 as well as Annex K and Annex L of Part 1 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 publication. At this date, the publication will be

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

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

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.

The contents of the corrigendum of June 2018 have been included in this copy.

101DV DE Modification: Add the following to the IEC Foreword:

The numbering system in the standard uses a space instead of a comma to indicate thousands and uses a comma instead of a period to indicate a decimal point. For example, 1 000 means 1,000 and 1,01 means 1.01.

102DV DE Modification: Add the following to the IEC Foreword:

For this Standard, all references to "Part 1" refer to CAN/CSA-C22.2 No. 62841-1 and UL 62841-1.

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ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY – PART 4-2: PARTICULAR REQUIREMENTS FOR HEDGE TRIMMERS

1 Scope

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

Addition:

This standard applies to hand-held **hedge trimmers** which are designed for use by one operator for trimming hedges and bushes, including **extended-reach hedge trimmers** with a maximum length of 3,5 m.

NOTE 101 The measurement of the length for **extended-reach hedge trimmers** is specified in [21.101](#).

This standard is not applicable to **hedge trimmers** with a rotating blade.

This standard is not applicable to scissors type grass shears.

NOTE 102 Scissors type grass shears are covered by IEC 60335-2-94.

2 Normative references

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

Addition:

IEC 61672-1 *Electroacoustics – Sound level meters – Part 1: Specifications*

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

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

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

Replacement:

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*

3 Terms and definitions

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

3.101 **blade control**

device activated by the operator's hand or fingers in order to start or stop the operation of the **cutting device**

3.102 **blade stopping time**

elapsed time from the release of the **blade control** until the moving parts of the **cutting device** stop

3.103 **blade tooth**

part of the **cutter blade** which is sharpened or has sharp edges to perform the shearing action (see [Figure 101](#) and [Figure 102](#))

3.104 **blunt extension**

blunt part of the **cutting device** or a part of an unsharpened plate fitted to the cutting device which extends beyond the **blade teeth** (see [Figure 101](#) and [Figure 102](#))

3.105 **cutter blade**

part of the cutting device having **blade teeth** which cut by shearing action either against other **blade teeth** or against a **shear plate** (see [Figure 101](#) and [Figure 102](#))

3.106 **cutting device**

part of the assembly of **cutter blade** and **shear plate** or of two **cutter blades** together with any supporting part which performs the cutting action, which may be either single or double sided (see [Figure 101](#), [Figure 102](#), [Figure 104 a](#)) and [Figure 104 b](#)))

3.107 **cutting length**

effective cutting length 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 (see [Figure 103](#))

Note 1 to entry: Where both **cutter blades** move, the **cutting length** is measured when the first and last **blade teeth** are furthest apart.

3.108 **extended-reach hedge trimmer**

hedge trimmer with a fixed or adjustable elongated construction, including additional separable extensions, if any, such that the **cutting device** is distanced from the handles or grasping surfaces during use

3.109 **front handle**

grasping surface located at or towards the **cutting device** (see [Figure 104](#))

3.110 **hedge trimmer**

hand-held machine provided with a linearly reciprocating **cutting device** intended for trimming bushes and hedges

3.111 **maximum speed**

highest **cutting device** speed attainable under all conditions of **normal use**, including no-load

3.112 **operator presence sensor**

device to detect the presence of an operator's hand

3.113 rear handle

grasping surface located furthest from the **cutting device** (see [Figure 104](#))

3.114 shaft

fixed or extendable element of an **extended-reach hedge trimmer** that distances the **cutting device** from the **rear handle**

3.115 shear plate

moving or stationary unsharpened part of the **cutting device** which assists cutting by shearing action against a **cutter blade** (see [Figure 101](#))

4 General requirements

This clause of Part 1 is applicable.

5 General conditions for the tests

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

5.8 Addition:

*If different **cutting devices** can be mounted on the **hedge trimmer** in accordance with [8.14.2 a\)](#) and [8.14.2 b\)](#), the **cutting devices** are regarded as **attachments**.*

5.17 Addition:

*The mass of the machine excludes the **cutting device** cover and shoulder harness, if any, but includes:*

– the auxiliary handle, if any;

and

– for **extended-reach hedge trimmers**, the auxiliary extension **shaft** attachment, if any.

5.101 *The tests are carried out on the machine as supplied. However, a machine constructed as a single machine but supplied in a number of units is tested after assembly in accordance with [8.14.2](#).*

5.102 *Unless otherwise specified, for Clauses [19](#) and [21](#), machines are tested in each operating configuration as described in [8.14.2](#).*

6 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.

7 Classification

This clause of Part 1 is applicable.

8 Marking and instructions

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

8.2 Addition:

Hedge trimmers shall be marked with safety information which shall be written in one of the official languages of the country in which the machine is to be sold or marked with the appropriate symbol.

For all **hedge trimmers**:

- "⚠ DANGER – Keep hands away from blade"; or
- the safety sign specified in [Figure AA.1](#); or
- the safety sign specified in [Figure AA.2](#).

The DANGER marking or symbol shall be readily visible to the user and shall not be located on the underside of the machine.

For all **hedge trimmers** with a degree of protection of less than IPX4:

- "⚠ WARNING – Do not expose to rain"; or
- the safety sign specified in [Figure AA.3](#).

For mains supplied machines:

- "⚠ WARNING – Remove plug from the mains immediately if the cable is damaged or cut"; or
- the safety sign specified in [Figure AA.4](#).

For all **hedge trimmers** except for Category 1 in [Table 101](#):

- "Wear eye protection" or a relevant safety sign of ISO 7010 or one of the safety signs shown in [Figure AA.5](#)."

Additionally, for **extended-reach hedge trimmers**:

- "⚠ DANGER – Keep sufficient distance away from electrical power lines" or symbol C.2.30 of ISO 11684.
- "Wear head protection" or a relevant safety sign of ISO 7010.

A combination of ISO safety signs, such as eye and head protection, is allowed. In addition, a combination of safety signs as specified in [Figure AA.6](#) is allowed.

8.12 Replacement of the first paragraph:

Markings required by the standard shall be legible and durable. Signs shall be in contrast such as colour, texture, or relief, to their background such that the information or instructions provided by the signs are clearly legible when viewed with normal vision from a distance of (500 ± 50) mm. Signs need not be in accordance with the colour requirements of ISO 3864-2. If markings are embossed, stamped or moulded, contrasting colours are not required.