

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –  
Part 4-2: Particular requirements for hedge trimmers**

**Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité –  
Partie 4-2: Exigences particulières pour les taille-haies**



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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

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**Part 4-2: Particular requirements for hedge trimmers**

**Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité –**  
**Partie 4-2: Exigences particulières pour les taille-haies**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

## **Part 4-2: Particular requirements for hedge trimmers**

### **FOREWORD**

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International Standard IEC 62841-4-2 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
116/346/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 document. At this date, the document 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.



# 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

[IEC 62841-4-2:2017](https://standards.iteh.ai/catalog/standards/sist/347e4afc-a155-4d73-aa62-38803b689950/iec-62841-4-2-2017)

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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 Figures 101 and 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 Figures 101 and 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 Figures 101 and 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 Figures 101, 102, 104 a) and 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:**

[IEC 62841-4-2:2017](https://standards.iteh.ai/catalog/standards/sist/347e4afc-a155-4d73-aa62-3885b6c82059/iec-62841-4-2-2017)

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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  $(500 \pm 50)$  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.

**8.14.1 Addition:**

The additional safety instructions as specified in 8.14.1.101 shall be given for all **hedge trimmers**. The additional safety instructions as specified in 8.14.1.102 shall be given for all **extended-reach hedge trimmers**. This part may be printed separately from the “General Machine Safety Warnings”.

NOTE 101 “General Machine Safety Warnings” are referred to as “General Power Tool Safety Warnings” in Part 1.

**8.14.1.101 Safety instructions for hedge trimmers****Hedge trimmer safety warnings:**

- a) **Keep all parts of the body away from the blade. Do not remove cut material or hold material to be cut when blades are moving.** *Blades continue to move after the switch is turned off. A moment of inattention while operating the hedge trimmer may result in serious personal injury.*
- b) **Carry the hedge trimmer by the handle with the blade stopped and taking care not to operate any power switch.** *Proper carrying of the hedge trimmer will decrease the risk of inadvertent starting and resultant personal injury from the blades.*
- c) **When transporting or storing the hedge trimmer, always fit the blade cover.** *Proper handling of the hedge trimmer will decrease the risk of personal injury from the blades.*
- d) **When clearing jammed material or servicing the unit, make sure all power switches are off and the power cord is disconnected.** *Unexpected actuation of the hedge trimmer while clearing jammed material or servicing may result in serious personal injury.*
- e) **Hold the hedge trimmer by insulated gripping surfaces only, because the blade may contact hidden wiring or its own cord. Blades contacting a "live" wire may make exposed metal parts of the hedge trimmer "live" and could give the operator an electric shock.**
- f) **Keep all power cords and cables away from cutting area.** *Power cords or cables may be hidden in hedges or bushes and can be accidentally cut by the blade.*
- g) **Do not use the hedge trimmer in bad weather conditions, especially when there is a risk of lightning.** *This decreases the risk of being struck by lightning.*

**8.14.1.102 Additional safety instructions for extended-reach hedge trimmers****Extended-reach hedge trimmer safety warnings:**

- a) **To reduce the risk of electrocution, never use the extended-reach hedge trimmer near any electrical power lines.** *Contact with or use near power lines may cause serious injury or electric shock resulting in death.*
- b) **Always use two hands when operating the extended-reach hedge trimmer.** *Hold the extended-reach hedge trimmer with both hands to avoid loss of control.*
- c) **Always use head protection when operating the extended-reach hedge trimmer overhead.** *Falling debris can result in serious personal injury.*

NOTE Alternate wording for "extended-reach" is possible, e.g. "pole" or "long reach".

**8.14.2 a) Addition:**

- 101) If applicable, information on **cutting devices** and **attachments** permitted to be used with the **hedge trimmer**, e.g. a device attached to the **cutting device** to aid removal of hedge trimmings.

**8.14.2 b) Addition:**

- 101) Advice to check the hedges and bushes for foreign objects, e.g. wire fences and hidden wiring;

- 102) Recommendation for the use of a **residual current device** with a tripping current of 30 mA or less;
- 103) Identification of gripping surfaces of handle(s) and grasping surface(s) required by 19.101 and 19.102;
- 104) Instruction to hold the **hedge trimmer** properly, e.g. with both hands if two handles are provided;
- 105) Advice that the **hedge trimmer** is intended to be used by the operator at ground level and not on ladders or any other unstable support;
- 106) Advice that before operating the **hedge trimmer**, the user should make sure the locking device(s) of any moving elements (e.g. the extended **shaft** and pivoting element), if any, are in the locked position;
- 107) Instructions for location and use of **blade control(s)** for the operation of the **hedge trimmer**;
- 108) Instructions for configuring the machine, including any handle or **cutter blade** adjustment;
- 109) Instructions for the use and adjustment of any provided shoulder harness in accordance with 19.110 and instructions for release or removal;
- 110) Identification of centre position and other operating positions for handles that can rotate while in operation as allowed in 19.101.3.

**8.14.2 c) Addition:**

- 101) If applicable, advice to have any adjustable stopping mechanism maintained at regular intervals.

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**9 Protection against access to live parts**

[IEC 62841-4-2:2017](https://standards.iteh.ai/catalog/standards/sist/347e4afc-a155-4d73-aa62-38803b689950/iec-62841-4-2-2017)

This clause of Part 1 is applicable.

**10 Starting**

This clause of Part 1 is applicable.

**11 Input and current**

This clause of Part 1 is applicable.

**12 Heating**

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

**12.2.1 Replacement:**

*The load conditions for the heating test of 12.2 are as follows:*

*The machine is operated with a torque load applied such that **rated input** or **rated current** is drawn. The machine is operated for 30 min in its most unfavourable configuration in accordance with 8.14.2 b) 108). During this period, the torque load is adjusted as necessary to maintain **rated input** or **rated current**.*

**13 Resistance to heat and fire**

This clause of Part 1 is applicable.

## 14 Moisture resistance

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

### 14.2.1 Replacement:

*The machine is not connected to the supply.*

*The machine is placed in its normal rest position on a perforated turntable. The turntable is then turned continuously at approximately 1 r/min during the test.*

*Electrical components, covers and other **detachable parts** are removed and subjected, if necessary, to the relevant treatment with the main part. Movable covers that are non-**detachable parts** and are not self-restoring are placed in the most unfavourable position.*

NOTE Examples of self-restoring covers include those that are spring loaded or close by gravity.

### 14.2.2 Addition:

*Alternatively, **extended-reach hedge trimmers** may be subjected to the test described in 14.2.3 b) or 14.2.4 b) of IEC 60529:2013, as applicable.*

## 15 Resistance to rusting

This clause of Part 1 is applicable.

## 16 Overload protection of transformers and associated circuits

This clause of Part 1 is applicable.

## 17 Endurance

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

### 17.2 Modification:

This subclause of Part 1 is applicable as for **hand-held tools**.

*Addition:*

*The machine is operated in its most unfavourable configuration in accordance with 8.14.2 b) 108).*

## 18 Abnormal operation

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

### 18.5 Modification:

The requirements for tools other than **lawn and garden machinery** are applicable.

### 18.8 Replacement of Table 4 by the following: