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Interested committees:

Title: BS EN IEC 62841-4-10 Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety

Part 4-10: Particular requirements for pole-mounted pruners

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



116/674/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:

IEC 62841-4-10 ED1

DATE OF CIRCULATION:

2023-09-01

CLOSING DATE FOR VOTING:

2023-11-24

SUPERSEDES DOCUMENTS:

116/652A/NP, 116/662/RVN

IEC TC 116 : SAFETY OF MOTOR-OPERATED ELECTRIC TOOLS	
SECRETARIAT: United States of America	SECRETARY: Mr Joseph Harding
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☒ SAFETY	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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Recipients of this document are invited to submit, with their comments, notification of any relevant "In Some Countries" clauses to be included should this proposal proceed. Recipients are reminded that the CDV stage is the final stage for submitting ISC clauses. (SEE AC/22/2007 OR NEW GUIDANCE DOC).

TITLE:

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 4-10: Particular requirements for pole-mounted pruners

PROPOSED STABILITY DATE: 2028

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE
TOOLS AND LAWN AND GARDEN MACHINERY –
SAFETY –****Part 4-10: Particular requirements for pole-mounted pruners****FOREWORD**

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IEC 62841-4-10 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools. It is an International Standard.

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

FDIS	Report on voting
116/XX/FDIS	116/XX/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, Part 2, Supplement.

available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

This Part 4-10 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This Part 4-10 supplements or modifies the corresponding clauses in IEC 62841-1:2014, so as to convert it into the IEC Standard: Particular requirements for pole-mounted pruners.

Where a particular subclause of IEC 62841-1:2014 is not mentioned in this Part 4-10, that subclause applies as far as relevant. Where this document states "addition", "modification" or "replacement", the relevant text in IEC 62841-1:2014 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 below, are numbered starting from 101.

Subclauses, notes, tables and figures in Annex K which are additional to those in the main body of this document 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.

183

INTRODUCTION

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

187 IEC takes no position concerning the evidence, validity and scope of this patent right.

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205 patents relevant to their standards. Users are encouraged to consult the data bases for the
206 most up to date information concerning patents.

207

208

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

Part 4-10: Particular requirements for pole-mounted pruners

1 Scope

IEC 62841-1:2014, Clause 1 is applicable, except as follows:

Addition:

This document applies to hand-held **pole-mounted pruners** which are designed for use by one operator for cutting tree branches with a **cutting device** and a fixed or detachable elongated construction such that the **cutting device** is distanced from the handles or grasping surfaces during use.

The **cutting device** of **pole-mounted pruners** may be

- a **saw chain**; or
- a reciprocating saw blade.

This document does not apply to

- chain saws as covered by IEC 62841-4-1; or
- chain saws for tree service as covered by IEC 62841-4-9; or
- hedge trimmers, including extended-reach hedge trimmers, as covered by IEC 62841-4-2; or
- brush saws as covered in IEC 62841-4-4; or
- scissors-type pruners; or
- machines designed for use with a circular saw blade.

NOTE 101 Scissors-type pruners will be covered by a future part of IEC 62841-4.

NOTE 102 In Europe (EN IEC 62841-4-10) this document does not apply to **pole-mounted pruners** equipped with **integral batteries**.

2 Normative references

IEC 62841-1:2014, Clause 2 is applicable, except as follows:

Addition:

IEC 60664-3:2016, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 60664-4:2005, *Insulation coordination for equipment within low-voltage systems – Part 4: Consideration of high-frequency voltage stress*

IEC 62841-1:2014, *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety – Part 1: General requirements*

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

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

250 ISO 22867:2021, *Forestry and gardening machinery – Vibration test code for portable hand-*
251 *held machines with internal combustion engine – Vibration at the handles*

252 ISO 22868:2021, *Forestry and gardening machinery - Noise test code for portable hand-held*
253 *machines with internal combustion engine – Engineering method (Grade 2 accuracy)*

254 *Replacement:*

255 ISO 3744:2010, *Acoustics. Determination of sound power levels and sound energy levels of*
256 *noise sources using sound pressure. Engineering methods for an essentially free field over a*
257 *reflecting plane*

258 **3 Terms and definitions**

259 IEC 62841-1:2014, Clause 3 is applicable, except as follows:

260 **3.101**

261 **cutting device**

262 assembly of **saw chain** and a **guide bar** or one or more reciprocating saw blades together
263 with any supporting part, which perform the cutting action

264 Note 101 to entry: See Figure 101 and Figure 102.

265 **3.102**

266 **drive sprocket**

267 chain drive wheel with teeth

268 **3.103**

269 **front handle**

270 grasping surface located on the **shaft** or support handle located towards the front of the
271 machine

272 Note 101 to entry: See Figure 101.

273 **3.104**

274 **guide bar**

275 **attachment** that supports and guides the **saw chain**

276 **3.105**

277 **maximum speed**

278 highest steady-state **cutting device** speed attainable under all conditions of **normal use**,
279 including no-load, when adjusted in accordance with the manufacturer's specifications and/or
280 instructions

281 Note 101 to entry: The steady-state **cutting device** speed excludes transients such as overshoot that may occur
282 before attaining a steady-state condition.

283 **3.106**

284 **operator presence sensor**

285 device to detect the presence of an operator's hand

286 **3.107**

287 **pole-mounted pruner**

288 hand-held machine of an elongated construction, with or without length adjustment and fitted
289 with a **cutting device**, intended to allow the operator to cut off branches of standing trees
290 from a distance

291 Note 101 to entry: See Figure 101 for an example of a **pole-mounted pruner** with a **saw chain cutting device**
292 within the scope of this document.

293 **3.108**
294 **rear handle**
295 support handle located towards the rear of the machine

296 Note 101 to entry: See Figure 101.

297 **3.109**
298 **saw chain**
299 **attachment** serving as a cutting tool, consisting of drive links and cutters

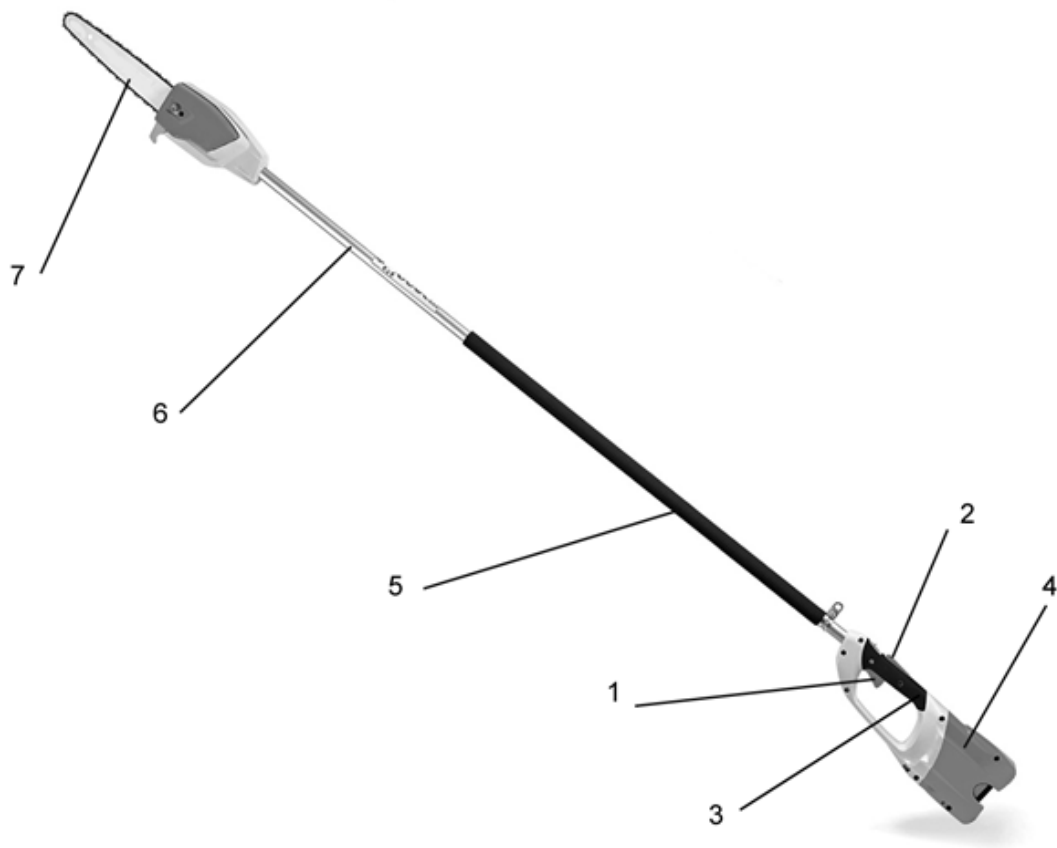
300 Note 101 to entry: See Figure 103.

301 **3.110**
302 **shaft**
303 fixed or extendable element of a **pole-mounted pruner** that distances the **cutting device**

304 Note 101 to entry: Examples of extendable **shaft** elements include telescoping elements or the addition of **shaft**
305 extensions.

306

307



308

309 **Key**

- 310 1 **power switch**
- 311 2 **operator presence sensor**
- 312 3 **rear handle**
- 313 4 **power unit/battery location**
- 314 5 **front handle/grasping surface**
- 315 6 **pole/shaft**
- 316 7 **cutting device**

317 **Figure 101 – Pole-mounted pruner nomenclature**

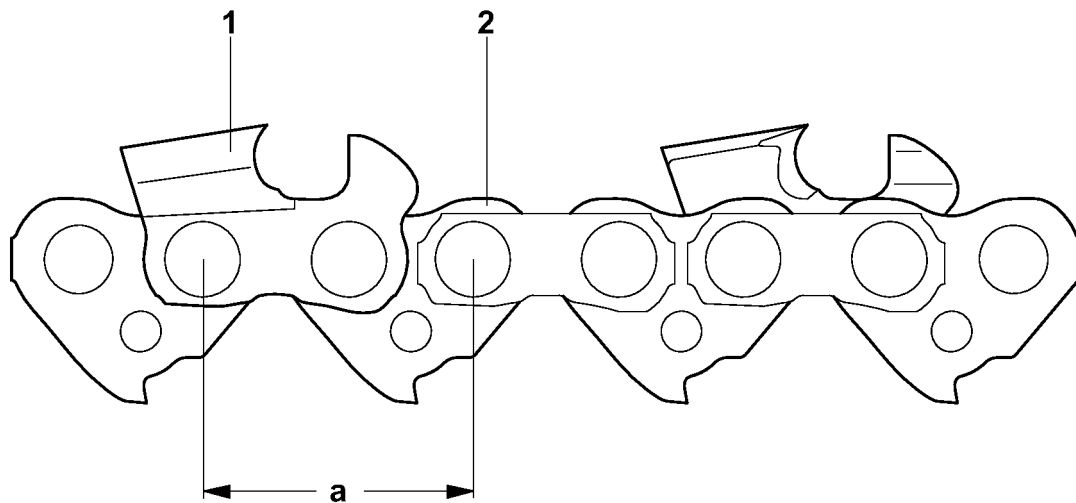
318



319

320 **Figure 102 – Example of a reciprocating saw blade**

321



689BB044/AS

Key

- 1 cutter
- 2 drive link
- a distance between drive links

Figure 103 – Saw chain drive link spacing**4 General requirements**

IEC 62841-1:2014, Clause 4 is applicable.

5 General conditions for the tests

IEC 62841-1:2014, Clause 5 is applicable, except as follows:

5.8 Addition:

*If different **cutting devices** can be mounted on the **pole-mounted pruner** in accordance with 8.14.2 a) and 8.14.2 b), the **cutting devices** are regarded as **attachments**.*

5.15 Addition:

*For tests carried out at any percentage of **rated input** or **rated current**, except for no-load, the **cutting device** may be removed and the **pole-mounted pruner** loaded by means of a brake.*

5.17 Addition:

*The mass of the machine includes the heaviest **cutting device** in accordance with 8.14.2 a) 103) as well as the lubrication tank, if any, filled to the maximum specified level, but excludes the **cutting device** cover and shoulder harness, if any.*

5.101 *For tests that are performed at **maximum speed** and no-load, the manufacturer may need to provide special hardware and/or software.*

5.102 *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.*

5.103 *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

IEC 62841-1:2014, Clause 6 is applicable.

7 Classification

IEC 62841-1:2014, Clause 7 is applicable, except as follows:

7.1 Replacement:

Machines shall be of one of the following classes with respect to protection against electric shock:

class II tool (machine), **class III tool** (machine)

8 Marking and instructions

IEC 62841-1:2014, Clause 8 is applicable, except as follows:

8.2 Addition:

Pole-mounted pruners 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:

- “Wear head protection” or a relevant safety sign of ISO 7010;
- “Wear eye protection” or a relevant safety sign of ISO 7010 or one of the product safety labels specified in Figure AA.1;
- “Wear ear protection”, or a relevant safety sign of ISO 7010 or the product safety label specified in Figure AA.2. This marking may be omitted if the measured A-weighted emission sound pressure level at the operator position determined in accordance with Annex I, does not exceed 85 dB(A).

A combination of ISO safety signs, such as eye, ear and head protection, is allowed. In addition, a combination of product safety labels as specified in Figure AA.3 and Figure AA.4 is allowed.

- “Wear hand protection” or a relevant safety sign of ISO 7010;
- “Wear slip-resistant footwear” or the product safety label specified in Figure AA.5;
- “DANGER – Keep sufficient distance away from electrical power lines” or the safety sign C.2.30 of ISO 11684:1995 or the product safety label specified in Figure AA.6;
- “WARNING – Keep bystanders away” or one of the product safety labels specified in Figure AA.7;

For all **pole-mounted pruners** with a degree of protection of less than IPX4:

- “Do not expose to rain”; or the product safety label specified in Figure AA.8;

For mains supplied machines:

- 383 – "⚠️ **WARNING** – Remove plug from the mains immediately if the cable is damaged or cut"
384 or the product safety label specified in Figure AA.9.

385 **8.3 Addition:**

386 **Pole-mounted pruners** permitted to be operated with a **saw chain** in accordance with
387 8.14.2 a) 103) shall be marked with an identification of the direction of rotation of the **saw**
388 **chain** by a legible and durable mark that is visible when fitting the **saw chain**. This may be
389 located under the **drive sprocket** cover, if any.

390 **8.12 Replacement of the first paragraph:**

391 Markings required by the standard shall be legible and durable. Signs shall be in contrast
392 such as colour, texture, or relief, to their background such that the information or instructions
393 provided by the signs are clearly legible when viewed with normal vision from a distance of
394 (500 ± 50) mm. Signs need not be in accordance with the colour requirements of ISO 3864-2.

395 If markings are embossed, stamped, etched, engraved or moulded, contrasting colours are
396 not required.

397 **8.14.1 Addition:**

398 The additional safety instructions as specified in 8.14.1.101, applicable to the supplied
399 **cutting device**, shall be given. This part may be printed separately from the "General
400 Machine Safety Warnings".

401 NOTE 101 "General Machine Safety Warnings" are referred to as "General Power Tool Safety Warnings" in
402 IEC 62841-1:2014.

403 **8.14.1.101 Safety instructions for pole-mounted pruners**

404 **Pole-mounted pruner safety warnings:**

- 405 a) **Keep all parts of the body away from the saw chain or saw blade when the pole-**
406 **mounted pruner is operating. Before you start the pole-mounted pruner, make sure**
407 **the saw chain or saw blade is not contacting anything. A moment of inattention while**
408 **operating the pole-mounted pruner may result in injury to yourself or others.**

409 NOTE 101 It is possible to replace the text "saw chain or saw blade" in item a) above with "saw chain" or
410 "saw blade", depending on the permitted **cutting device(s)** in accordance with 8.14.2 a) 103).

- 411 b) **Always use two hands when operating the pole-mounted pruner. Hold the pole-**
412 **mounted pruner with both hands to avoid loss of control.**

- 413 c) **To reduce the risk of electrocution, never use the pole-mounted pruner near any**
414 **electrical power lines. Contact with or use near power lines may cause serious injury or electric**
415 **shock resulting in death.**

- 416 d) **Hold the pole-mounted pruner by insulated gripping surfaces only, because the saw**
417 **chain or saw blade may contact hidden wiring or its own cord. Saw chains or saw**
418 **blades contacting a "live" wire may make exposed metal parts of the pole-mounted pruner**
419 **"live" and could give the operator an electric shock.**

420 NOTE 102 It is possible to replace the text "saw chain or saw blade" in item d) above with "saw chain" or
421 "saw blade", depending on the permitted **cutting device(s)** in accordance with 8.14.2 a) 103).

- 422 e) **Wear eye and ear protection. Further protective equipment for hands and slip-**
423 **resistant footwear is recommended. Adequate protective equipment will reduce the risk**
424 **of personal injury.**

425 NOTE 103 The ear protection portion of the warning can be omitted if the measured A-weighted emission
426 sound pressure level at the operator's ear in accordance with Annex I does not exceed 85 dB(A).

- 427 f) **Always use head protection when operating the pole-mounted pruner overhead.**
428 **Falling debris can result in serious personal injury.**

g) **Always keep proper footing and operate the pole-mounted pruner only when standing on the ground.** *Slippery or unstable surfaces may cause a loss of balance or control of the machine.*

h) **Do not operate a pole-mounted pruner in a tree, on a ladder, or any unstable support.** *Operation of a pole-mounted pruner in this manner may result in loss of balance, loss of control and personal injury.*

i) **Keep all power cords and cables away from cutting area.** *Power cords or cables may be hidden in trees and can be accidentally cut by the saw chain or saw blade.*

NOTE 104 It is possible to replace the text “saw chain or saw blade” in item i) above with “saw chain” or “saw blade”, depending on the permitted **cutting device(s)** in accordance with 8.14.2 a) 103).

j) **Do not use the pole-mounted pruner in bad weather conditions, especially when there is a risk of lightning.** *This decreases the risk of being struck by lightning.*

k) **When cutting a limb that is under tension, be alert for spring back.** *When the tension in the wood fibres is released, the spring-loaded limb may strike the operator and/or throw the pole-mounted pruner out of control.*

l) **Use extreme caution when cutting brush and saplings.** *The slender material may catch the saw chain or saw blade and be whipped toward you or pull you off balance.*

NOTE 105 It is possible to replace the text “saw chain or saw blade” in item l) above with “saw chain” or “saw blade”, depending on the permitted **cutting device(s)** in accordance with 8.14.2 a) 103).

m) **When carrying the pole-mounted pruner with the machine switched off, take care not to operate any power switch and keep the saw chain or saw blade away from your body.** *Proper carrying of the pole-mounted pruner will reduce the likelihood of accidental contact with the saw chain or saw blade.*

NOTE 106 It is possible to replace the text “saw chain or saw blade” in item m) above with “saw chain” or “saw blade”, depending on the permitted **cutting device(s)** in accordance with 8.14.2 a) 103).

n) **When transporting or storing the pole-mounted pruner, always fit the guide bar or saw blade cover.** *Proper handling of the pole-mounted pruner will reduce the likelihood of accidental contact with the moving saw chain or saw blade.*

NOTE 107 It is possible to replace the text “saw chain or saw blade” in item n) above with “saw chain” or “saw blade”, depending on the permitted **cutting device(s)** in accordance with 8.14.2 a) 103).

o) **When clearing jammed material or servicing the pole-mounted pruner, make sure all power switches are off and the power cord is disconnected.** *Unexpected actuation of the pole-mounted pruner while clearing jammed material or servicing may result in serious personal injury.*

p) **Cut wood only. Do not use pole-mounted pruner for purposes not intended. For example: do not use the pole-mounted pruner for cutting plastic, metal, masonry or non-wood building materials.** *Use of the pole-mounted pruner for operations different than intended could result in a hazardous situation.*

8.14.2 a) Addition, according to the type of supplied **cutting device**:

101) Explanation of the safety devices that the **pole-mounted pruner** incorporates as part of the original equipment;

102) Instructions for assembly, initial adjustments and checks, and including a description of the method to install the **saw chain** and **guide bar** or saw blade;

103) If applicable, information on **cutting devices** and other **attachments** permitted to be used with the **pole-mounted pruner**;

104) If applicable, information on specified replacement **saw chains**, **guide bars** and saw blades, including a warning of possible consequences from using non-approved combinations;

105) If applicable, information on chain tensioning and sharpening techniques, including the use of gloves;

106) Information regarding regular maintenance, pre-operating procedures and daily maintenance routines, as well as the consequences of improper maintenance;

107) If applicable, information on **guide bar** and **saw chain** adjustments with the motor stopped and disconnected from the mains supply or **battery** removed,

- 483 108) Instructions on filling of the oil tank, if any.
- 484 **8.14.2 b) Addition, according to the type of supplied cutting device:**
- 485 101) Identification of gripping surfaces of handle(s) and grasping surface(s) required by
486 19.101;
- 487 102) Instructions for configuring the machine, including any handle or **cutting device**
488 adjustment;
- 489 103) Advice that before operating the **pole-mounted pruner**, the user should make sure the
490 locking device(s) of any moving elements (e.g. the extended shaft and pivoting
491 element), if any, are in the locked position;
- 492 104) Instructions for location and use of control(s) for the operation of the **pole-mounted**
493 **pruner**;
- 494 105) Instructions for the use and adjustment of any provided shoulder harness in
495 accordance with 19.105 and instructions for release or removal;
- 496 106) The need for inspection before use and after dropping or other impacts to identify
497 significant damage or defects;
- 498 107) Advice to check trees for foreign objects, e.g. wire fences and hidden wiring;
- 499 108) Operating instructions and instructions for common cutting tasks, as well as the need
500 for adequate training, including prohibited operations and a warning against the use of
501 the machine when tired, ill or under the influence of alcohol or other drugs;
- 502 109) Advice to remove branches in sections and a warning about dangerous operating
503 positions, as well as the risk of being struck by falling branches or branches that,
504 having hit the ground, rebound;
- 505 110) Instructions regarding exposure to noise, and the selection and use of hearing
506 protection, including recommendations for limiting the duration of operation, if the
507 measured A-weighted emission sound pressure level at the operator's ear in
508 accordance with Annex I exceeds 85 dB(A);
- 509 111) Instructions regarding exposure to vibration, with an explanation of the risk regarding
510 hand-arm vibration syndrome (white finger) as well as the means for users to protect
511 themselves and, if appropriate, recommendations for limiting the duration of operation.
512 Instructions on the use of gloves;
- 513 112) Information on hazards which may be encountered while using the **pole-mounted**
514 **pruner**, such as blockage of the **saw chain** or saw blade, and how to avoid them while
515 performing typical tasks;
- 516 113) An explanation of, and instructions in how to deal with “skating” and “bouncing”, and
517 dropping at the end of a cut;
- 518 114) Information about the emission of lubrication oil mist and saw dust;
- 519 115) If applicable, instruction not to operate the **pole-mounted pruner** without lubrication
520 and to replenish it in due time before the container is empty;
- 521 116) If a manual lubrication control is provided, instructions regarding its use;
- 522 117) If applicable, instruction to use only recommended lubricants;
- 523 118) Recommendation for the use of a **residual current device** with a tripping current of
524 30 mA or less;
- 525 119) A statement to position the cord so that it will not be caught on branches and the like,
526 during cutting;
- 527 120) Instructions not to simultaneously wear multiple belt harnesses and/or shoulder
528 harnesses.
- 529 **8.14.2 c) Addition, according to the type of supplied cutting device:**
- 530 101) Recommendations for cleaning and maintenance before storage;
- 531 102) Instructions on servicing and replacement tasks for the user, including the need to
532 keep the **pole-mounted pruner** in good working condition;

103) Instructions on sharpening and maintenance of the **saw chain** or saw blade and/or a recommendation to have sharpening and maintenance of the **saw chain** or saw blade performed by authorised service centres;

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

8.14.3 Replacement:

If information about the mass or weight of the machine is provided, it shall be the mass of the machine without the **cutting device**, **cutting device** cover, lubricant, shoulder harness, if any, and optional **accessories**.

Compliance is checked by inspection.

9 Protection against access to live parts

IEC 62841-1:2014, Clause 9 is applicable.

10 Starting

IEC 62841-1:2014, Clause 10 is applicable.

11 Input and current

IEC 62841-1:2014, Clause 11 is applicable.

12 Heating

IEC 62841-1:2014, Clause 12 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). During this period, the torque load is adjusted as necessary to maintain **rated input** or **rated current**.*

*The **shaft** may be adjusted to any length to facilitate testing provided that this does not influence the result.*

13 Resistance to heat and fire

IEC 62841-1:2014, Clause 13 is applicable.

14 Moisture resistance

IEC 62841-1:2014, Clause 14 is applicable, except as follows:

14.1 Addition:

NOTE 101 **Saw chain** lubrication tanks and lubrication systems intended for use with oil as specified in 8.14.2 are considered not to be **liquid systems**.

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 $(1 \pm 0,1)$ r/min during the test.

Detachable parts are removed and subjected, if necessary, to the relevant treatment with the main part.

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

Air filters are not removed.

14.2.2 Addition:

Alternatively, the machine may be subjected to the test described in IEC 60529:2013, subclause 14.2.3 b) or 14.2.4 b), as applicable.

Replacement of the last paragraph:

*Immediately after the appropriate treatment, the machine shall withstand the electric strength test of Annex D between **live parts** and **accessible parts**, the test voltage being 2 500 V.*

*Then the machine is connected to the supply. It shall not start with the **power switch** in the "off" position.*

*Afterwards, inspection shall show that there is no trace of water on insulation, which could result in a reduction of **creepage distances** between bare conductors of different potential below the values specified in 28.1. For all instances where **creepage distances** could be reduced below the values specified in 28.1, a short circuit is introduced between adjacent conductors simultaneously. The machine is then evaluated for*

- the risk of fire in accordance with IEC 62841-1:2014, 18.6.1 a); and*
- the loss of any **SCF**, unless the machine is rendered into a safe state.*

14.3 This subclause of IEC 62841-1:2014 is not applicable for **saw chain** lubrication tanks and lubrication systems intended for use with oil as specified in 8.14.2.

15 Resistance to rusting

IEC 62841-1:2014, Clause 15 is applicable.

16 Overload protection of transformers and associated circuits

IEC 62841-1:2014, Clause 16 is applicable.

17 Endurance

IEC 62841-1:2014, Clause 17 is applicable, except as follows:

17.2 Modification:

This subclause of IEC 62841-1:2014 is applicable as for **hand-held tools**. The **saw chain** or saw blade is removed for the endurance test.

Addition:

601 *The machine is operated in its most unfavourable configuration in accordance with 8.14.2 b).*
602 *The **shaft** may be adjusted to any length to facilitate testing provided that this does not*
603 *influence the result.*

604 **18 Abnormal operation**

605 IEC 62841-1:2014, Clause 18 is applicable, except as follows:

606 **18.3 Replacement:**

607 *Machines incorporating a series motor are operated without **accessories** or **attachments** at a*
608 *voltage equal to 1,3 times **rated voltage** for 1 min at no-load.*

609 *During the test, parts shall not be ejected from the machine. After this test, the machine need*
610 *not be capable of further use.*

611 *An additional device incorporated in the machine to limit the speed may operate during the*
612 *test.*

613 **18.5 Modification:**

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

615

18.8.1 Replacement of Table 4 by the following:

Table 4 – Required performance levels

Type and purpose of SCF	Minimum Performance Level (PL)
Power switch - prevent unwanted switch-on for machines with a cutting device incorporating a saw chain	Shall be evaluated using the fault conditions of 18.6.1 without the loss of this SCF
Power switch - prevent unwanted switch-on for machines with a cutting device incorporating a reciprocating saw blade	c
Power switch - provide desired switch-off for machines with a cutting device incorporating a saw chain	b
Power switch - provide desired switch-off for machines with a cutting device incorporating a reciprocating saw blade	a
Provide desired direction of rotation for machines permitted to be operated with a saw chain in accordance with 8.14.2 a) 103)	Not an SCF
Starting current limitation as in 10.2	Not an SCF
Prevent exceeding thermal limits as in Clause 18	a
Overspeed prevention	Not an SCF
Any device to prevent operation in a configuration not permitted by this standard as required in 19.101	a
Any device to prevent operation when the distance from cutting device to power switch required in 19.102 is not fulfilled	a
Operator presence sensor as in 21.18.102	a
Lock-off function as required in 21.18.101 for machines with a cutting device incorporating a saw chain	b
Lock-off function as required in 21.18.101 for machines with a cutting device incorporating a reciprocating saw blade	a
Visual or audible indicator as referenced in 21.18.101	Not an SCF
Prevent self-resetting as required in 23.3	Not an SCF

19 Mechanical hazards

IEC 62841-1:2014, Clause 19 is applicable, except as follows:

19.1 Modification:

The requirements of this subclause do not apply to those moving parts and guards which are separately covered by 19.102 and 19.103.

The requirements of this subclause apply to all operating configurations as described in 8.14.2.

19.3 This subclause of IEC 62841-1:2014 is not applicable.

19.4 This subclause of IEC 62841-1:2014 is not applicable.

NOTE 101 Requirements for handles are given in 19.101.

19.5 This subclause of IEC 62841-1:2014 is not applicable.

19.6 This subclause of IEC 62841-1:2014 is not applicable.

19.7 This subclause of IEC 62841-1:2014 is not applicable.

19.8 This subclause of IEC 62841-1:2014 is not applicable.

19.9 *Addition:*

This subclause of IEC 62841-1:2014 is not applicable for a **drive sprocket** cover, if any.

19.101 Handles

19.101.1 General

Pole-mounted pruners shall be provided with at least two handles or grasping surfaces to provide safe control.

If a part containing the motor complies with the dimensions for a handle, it may be considered as a handle.

A **shaft** may be used as a handle if specified in accordance with 8.14.2.

The handles shall be designed in such a way that each one can be grasped with one hand. Handles shall be suitably shaped to be grasped securely and have a perimeter P between 63 mm and 170 mm as illustrated in Figure 104, 105 or 106. The perimeter P is determined by a chain measurement with the **power switch**, if any, fully depressed. The gripping length of all handles and grasping surfaces shall be at least 100 mm long.

If applicable, the part of the handle containing the **power switch** shall be counted as part of the handle gripping length.

If there are finger grips or similar superimposed profiles, the handle gripping length shall not be measured along the surface, but only the arc or straight line distance of the gripping surface, as applicable, shall be taken into account.

Handles shall be locked in position during operation. If they are adjustable without tools to different positions in accordance with 8.14.2 b), it shall not be possible to operate the machine when adjusted to a position which contravenes other provisions of this standard.

NOTE 101 The requirements for endurance and integrity of adjustments are covered in 19.106 and 19.107.

Compliance is checked by inspection and by measurements.

19.101.2 Dimensions of bail or closed handles

On bail or closed handles (U-shaped handles), the gripping length is related to the inner width of the gripping surface. There shall be a minimum radial clearance of 25 mm around the gripping length.

If a bail or closed handle is used, the gripping length L in Figure 104 shall be measured using lengths A and B as follows:

- the length A is measured within region X where the radius is at least 100 mm;
- the length(s) B are measured within region(s) Y where the transition radius is less than 100 mm, but each length B cannot exceed 10 mm in each region Y of the gripping surface.

NOTE 101 Bail or closed handles are also known as U-shaped handles.

Compliance is checked by inspection and by measurement.