

Safety of hand-held electric motor operated tools —

Part 2-13: Particular requirements for chain saws

The European Standard EN 50144-2-13:2002 has the status of a
British Standard

ICS 25.140.20; 91.080.40

National foreword

This British Standard is the official English language version of EN 50144-2-13:2002. It supersedes BS 2769-2-12:1991 which will be withdrawn on 2004-01-01.

The UK participation in its preparation was entrusted by Technical Committee CPL/61, Safety of household and similar electrical appliances, to Subcommittee CPL/61/6, Portable motor-operated tools, which has the responsibility to:

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- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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Safety of hand-held electric motor operated tools Part 2-13: Particular requirements for chain saws

Sécurité des outils électroportatifs
à moteur
Partie 2-13: Règles particulières pour
les scies à chaînes

Sicherheit handgeführter
motorbetriebener Elektrowerkzeuge
Teil 2-13: Besondere Anforderungen für
Kettensägen

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CENELEC

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

This European Standard has been prepared by Technical Committee TC 61F, Hand-held and transportable electric motor operated tools. A first draft was submitted to the Unique Acceptance Procedure (UAP) in August 1996. A second draft was submitted to the formal vote in September 2000 and was approved by CENELEC as EN 50144-2-13 on 2001-01-01.

This European Standard supersedes HD 400.3L S2:1988.

The following dates were fixed:

- latest date by which the EN has to be implemented
at a national level by publication of an identical
national standard or by endorsement (dop) 2003-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2004-01-01

This standard is divided into two parts:

Part 1: General requirements which are common to most hand-held electric motor operated tools (for the purpose of this standard referred to simply as tools).

Part 2: Requirements for particular types of tool which either supplement or modify the requirements given in Part 1 to account for the particular hazards and characteristics of these specific tools.

This European Standard has been prepared under a mandate given to CEN/CENELEC by the European Commission and the European Free Trade Association and supports the essential health and safety requirements of the Machinery Directive.

Compliance with the clauses of Part 1 together with this part 2 provides one means of conforming with the essential health and safety requirements of the Directive.

As with any standard, technical progress will be kept under review so that any developments can be taken into account.

CEN/TC 114 is producing standards for petrol engined chain saws (EN 608).

Warning: Other requirements and other EC Directives can be applicable to the products falling within the scope of this standard.

This standard follows the overall requirements of EN 292-1 and EN 292-2.

Subclauses, tables and figures which are additional to those in Part 1 are numbered starting from 101.

NOTE In this standard the following print types are used:

- Requirements proper;
- *Test specifications;*
- Explanatory matter.

Contents

1	Scope	4
2	Definitions	4
3	General requirements	5
4	General conditions for the tests	5
5	Rating	5
6	Classification	5
7	Marking and information for use	6
8	Protection against electric shock	7
9	Starting	8
10	Input and current	8
11	Heating	8
12	Leakage current	8
13	Environmental requirements	8
14	Moisture resistance	9
15	Insulation resistance and electric strength	9
16	Endurance	9
17	Abnormal operation	9
18	Mechanical hazards	10
19	Mechanical strength	14
20	Construction	15
21	Components	16
22	Internal wiring	16
23	Supply connection and external flexible cables and cords	16
24	Terminals for external conductors	16
25	Provision for earthing	16
26	Screws and connections	16
27	Creepage distances, clearances and distances through insulation	16
28	Resistance to heat, fire and tracking	16
29	Resistance to rusting	16
30	Radiation	16
	Annexes	28
	Figure 101 – Usable cutting length	17
	Figure 102 – Description of felling: undercutting	17
	Figure 103 – Description of felling: escape routes	18
	Figure 104 – Impact test apparatus	18
	Figure 105 – Clearance at and below switch actuator	19
	Figure 106 – Clearance behind switch actuator	19
	Figure 107 – Handle clearances and dimension requirements	20
	Figure 108 – Front handle clearance and distance between front and rear handle	21
	Figure 109 – Dimensions and clearances of front hand guard	22
	Figure 110 – Test probe	22
	Figure 111 – Chain catcher	23
	Figure 112 – Dynamic test of chain catcher	23
	Figure 113 – Chain brake test and dynamic test of front hand guard	24
	Figure 114 – Handle gripping area	25
	Figure 115 – Application of loads for handle strength test	25
	Figure 116 – Dynamic test of rear hand guard: principle	26
	Figure 117 – Dynamic test of rear hand guard: impact point	26
	Figure 118 – Accelerometer positions	27
	Table 101 – Test conditions for chain saws	9
	Table 102 – Clearance dimensions of handles	10
	Table 103 – Dimensions and clearances in Figure 109	11
	Table 104 – Handle strength test loads	14

1 Scope

This clause of Part 1 is applicable except as follows:

1.1 *Addition:*

This standard applies to chain saws but does not apply to chain saws operated by two persons and to pole cutters and pruners.

This standard does not give requirements for the design of the tool to reduce the risks arising from noise and vibration.

2 Definitions

This clause of Part 1 is applicable except as follows:

2.2.18 *Replacement:*

2.2.18

normal load

load obtained when the chain saw is operated continuously, the load being such that the input, in watts, is equal to rated input and will be measured using the rated voltage or on the upper limit of the rated voltage range

Additional definitions:

2.101

chain saw

electric tool which is intended for cutting wood by means of the saw chain supported by a guide bar

2.102

chain brake

device for stopping or locking the saw chain operated manually or automatically when kick-back occurs

2.103

drive sprocket

the toothed part that drives the saw chain

2.104

front handle

support handle located at or towards the front of the motor housing

2.105

guide bar

the part that supports and guides the saw chain

2.106

kickback

upward and/or backward motion of the guide bar that may occur when the nose of the saw chain, unexpectedly contacts an object

2.107

rear handle

the support handle located at or toward the rear of the chain saw

2.108

saw chain

loop of chain having cutting teeth that is driven by the motor and is supported by the guide bar

2.109

spiked bumper

part fixed to the casing, parallel to the guide-bar used as a pivot whilst sawing

2.110

usable cutting length

the distance measured along the guide bar axis from the root of the spiked bumper to the tip of the nose with the chain tension adjuster set at mid position. In the case of the chain saw fitted with a nose guard, measured from the root of the spiked bumper to the rear edge of the nose guard (see Figure 101)

2.111

chain catcher

device for restraining the saw chain if it breaks or derails

2.112

run down time

the elapsed time from the release of the main switch until the saw chain stops

3 General requirements

This clause of Part 1 is applicable.

4 General conditions for the tests

This clause of Part 1 is applicable except as follows:

4.2 *Addition:*

For the tests of Clauses 13 and 18 additional samples may be provided.

4.10 *Addition:*

For tests carried out at normal load, the chain and bar may be removed and the driving wheel of the saw chain loaded by means of a brake.

5 Rating

This clause of Part 1 is applicable.

6 Classification

This clause of Part 1 is applicable except as follows:

Modification:

Class I tools are not allowed.

7 Marking and information of use

This clause of Part 1 is applicable except as follows:

7.1 Addition:

Chain saw shall be marked with:

- maximum cutting length, in millimetres as shown in Figure 107;
- indication of direction of rotation of the saw chain; this shall be clearly indicated by an arrow, raised or sunk, or by any other means no less visible and indelible.

In addition, chain saws shall be marked with a warning of the following substance or symbols:

They shall be written in one of the official language(s) of the country in which the chain saw is to be sold.

- Read the instructions

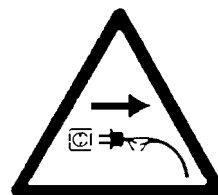


- Do not expose to rain



For splash-proof or watertight chain saws this warning need not be marked on the electric tool itself.

- Remove plug from the mains immediately if cable is damaged or cut



7.13.1 Addition:

- adjustment and correct operation of automatic and manual chain oilers;
- adjustment of chain tension and chain brake functioning;
- instructions on chain sharpening;
- kickback causes, effects and safety precaution;
- holding the saw in use, stance, access to work, cutting height;
- advice not to use the chain saw above shoulder height;
- advice on the need to hold the chain saw with both hands;

- cutting branches, logging, supporting the log, effect of sloping ground;
- avoidance of cutting into ground, wire fences, cutting saplings, cutting prepared timber;
- felling: a short description with illustrations of safe procedures:
felling within the capabilities of the saw, undercutting to control direction of fall (see Figure 102), preparation and use of escape routes (see Figure 103), restriction of access to danger zones, use of wedges, reference to weather and onlookers and to local by-laws;
- advice on appropriate personal protective equipment (e.g. for head, eyes, ears, body, hands, legs, feet).

7.13.2 Addition:

- a recommendation that the first time user should have practical instruction in the use of the chainsaw and the protective equipment from an experienced operator and that the initial practice should be cutting logs on a saw horse or cradle;
- recommendation for the use of a residual current device.

8 Protection against electric shock

This clause of Part 1 is applicable except as follows:

8.101 Addition:

For chain saws other than those of class III, handles shall be either of insulating material or of metal having a fixed insulated covering complying with the requirements of 15.3 for supplementary insulation.

The handles shall be so designed that, when held as in normal use, the risk of any part of a user's hand coming into contact with metal parts which are in electrical contact with the saw chain is obviated.

Compliance is checked by inspection and by the tests of 15.3, applied to the handles and carried out after the test specified in 19.3.

Moreover the covering of insulation material of metal handles shall comply with the following test:

A sample of the covered part is conditioned at a temperature of $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for 7 days (168 h). After conditioning, the sample is allowed to attain approximately room temperature.

Inspection shall show

- *that the covering has not shrunk to such an extent that the required insulation is no longer given*
- *that the covering has not peeled off, so that it may move longitudinally.*

After this, the sample is maintained for 4 h at temperature of $-10\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$:

While still at this temperature, the sample is then subjected, in a device shown in Figure 104, to impact applied by means of a weight "A" having a mass of 300 g and falling from a height of 350 mm onto a chisel "B" of hardened steel, the edge of which is placed on the sample, as shown in Figure 104.

One impact is applied to each place where the covering is likely to be weak or is likely to be damaged in normal use, the distance between the points of impact being at least 10 mm.

After this test, inspection shall show that the covering has not peeled off and an electric strength test is made between metal parts and metal foil wrapped round the covering of the handle shaft.

The test voltage of 2500 V is applied for 1 min.

During this test, no flashover or breakdown shall occur.

9 Starting

This clause of Part 1 is applicable.

10 Input and current

This clause of Part 1 is applicable except as follows:

10.1 Modification:

This test is not made.

10.2 Addition:

Compliance is checked by measuring the current after the chain saw has been operating for 10 min.

11 Heating

11.5 Replacement:

The chain saw is operated for 30 min at normal load.

12 Leakage current

This clause of Part 1 is applicable.

13 Environmental requirements

This clause of Part 1 is applicable except as follows:

13.1 This subclause is not applicable.

13.2.3 Replacement of paragraphs 1,2,3 and 4:

Chain saws are tested at no-load.

13.2.4 Addition:

The guide bar shall be horizontal as for a downward cut.

13.3.3 Replacement of paragraph 1:

Measurements are made on each handle in three directions as shown in Figure 118.