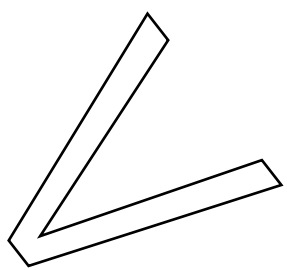


Dit document mag slechts op een stand-alone PC worden geïnstalleerd. Gebruik op een netwerk is alleen toestaan als een aanvullende licentieovereenkomst voor netwerkgebruik met NEN is afgesloten. This document may only be used on a stand-alone PC. Use in a network is only permitted when a supplementary license agreement for us in a network with NEN has been concluded.



Vervangt NEN-EN 50144-2-13:1996 Ontw.; NEN 2752:1983,sectie L

Nederlandse norm

# **NEN-EN 50144-2-13 (en)**

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

Preview

ICS 25.140.20; 91.080.40  
oktober 2002

Als Nederlandse norm is aanvaard:  
- EN 50144-2-13:2002, IDT

Nederlands Elektrotechnisch Comité (NEC)  
Normcommissie NEC 61 "Veiligheid van huishoudelijke toestellen"

---

Apart from exceptions provided by the law, nothing from this publication may be duplicated and/or published by means of photocopy, microfilm, storage in computer files or otherwise, which also applies to full or partial processing, without the written consent of the Netherlands Standardization Institute.

The Netherlands Standardization Institute shall, with the exclusion of any other beneficiary, collect payments owed by third parties for duplication and/or act in and out of law, where this authority is not transferred or falls by right to the Reproduction Rights Foundation.

---

Auteursrecht voorbehouden. Behoudens uitzondering door de wet gesteld mag zonder schriftelijke toestemming van het Nederlands Normalisatie-instituut niets uit deze uitgave worden veeveelvoudigd en/of openbaar gemaakt door middel van fotokopie, microfilm, opslag in computerbestanden of anderszins, hetgeen ook van toepassing is op gehele of gedeeltelijke bewerking.

Het Nederlands Normalisatie-instituut is met uitsluiting van ieder ander gerechtigd de door derden verschuldigde vergoedingen voor veeveelvoudiging te innen en/of daartoe in en buiten rechte op te treden, voor zover deze bevoegdheid niet is overgedragen c.q. rechtens toekomt aan de Stichting Reprorecht.

---

Although the utmost care has been taken with this publication, errors and omissions cannot be entirely excluded. The Netherlands Standardization Institute and/or the members of the committees therefore accept no liability, not even for direct or indirect damage, occurring due to or in relation with the application of publications issued by the Netherlands Standardization Institute.

---

Hoewel bij deze uitgave de uiterste zorg is nagestreefd, kunnen fouten en onvolledigheden niet geheel worden uitgesloten. Het Nederlands Normalisatie-instituut en/of de leden van de commissies aanvaarden derhalve geen enkele aansprakelijkheid, ook niet voor directe of indirecte schade, ontstaan door of verband houdend met toepassing van door het Nederlands Normalisatie-instituut gepubliceerde uitgaven.

EUROPEAN STANDARD

**EN 50144-2-13**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2002

ICS 25.140.20; 91.080.40

Supersedes HD 400.3L S2:1988

English version

**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

This European Standard was approved by CENELEC on 2001-01-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

© 2002 CENELEC - All rights of exploitation in any form and by any means reserved worldwide for CENELEC members.

Ref. No. EN 50144-2-13:2002 E

## 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 engine 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:

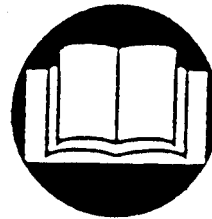
Chain saw shall be marked with:

- 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

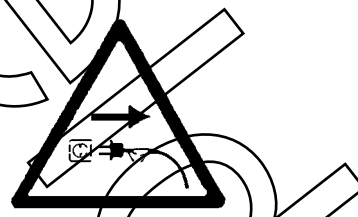


- Do not expose to rain



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.*

# ALTIJD DE ACTUELE NORM IN UW BEZIT HEBBEN?

Nooit meer zoeken in de systemen en uzelf de vraag stellen:  
'Is NEN-EN 50144-2-13:2002 en de laatste versie?'

Via het digitale platform NEN Connect heeft u altijd toegang tot de meest actuele versie van deze norm. Vervallen versies blijven ook beschikbaar. **U en uw collega's** kunnen de norm via NEN Connect makkelijk raadplagen, online en offline.

Kies voor slimmer werken en bekijk onze mogelijkheden op [www.nenconnect.nl](http://www.nenconnect.nl).

## Heeft u vragen?

Onze Klantenservice is bereikbaar maandag tot en met vrijdag, van 8.30 tot 17.00 uur.

Telefoon: 015 2 690 391

E-mail: [klantenservice@nen.nl](mailto:klantenservice@nen.nl)

