



**SLOVENSKI STANDARD  
SIST EN 50144-2-13:2002**

**01-november-2002**

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SIST HD 400.3L S2:1995**

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

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

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

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**Ta slovenski standard je istoveten z: EN 50144-2-13:2002**

**ICS:**

25.140.20	Ò\^ dã } æ!   [ àæ	Electric tools
65.060.80	Gozdarska oprema	Forestry equipment

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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

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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**

## 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.

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## 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:

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#### 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.

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**4 General conditions for the tests**

This clause of Part 1 is applicable except as follows:

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**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



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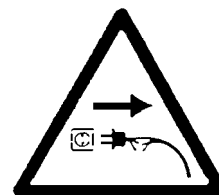
- Do not expose to rain

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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.

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*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  $70\text{ °C} \pm 2\text{ °C}$  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  $-10\text{ °C} \pm 2\text{ °C}$ :*

*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:** iTeh STANDARD PREVIEW

*The chain saw is operated for 30 min at normal load.* (standards.iteh.ai)

## **12 Leakage current**

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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.*

**13.3.5 Replacement of paragraph 1:**

Chain saws are tested under load under the conditions shown in Table 101.

**Table 101 -Test conditions for chain saws**

Material	Freshly felled softwood log of local timber, not frozen. Width of the log to be trimmed to 75 % of the usable cutting length of the guide bar
Orientation	Log to be rigidly clamped horizontally so that the centre line of the log is at 0,6 m from the ground
Tool bit/ cutter/ abrasive	Saw chain to be as supplied or recommended by the manufacturer
Feed force	Sufficient force, using the spiked bumper, to achieve rated input $\pm 10$ %
Test cycle	Cutting across the width of the log on a part substantially free of knots

Paragraph 3 is not applicable.

**13.3.6 Addition:**

The weighted r.m.s. acceleration value for each handle shall be calculated from the following formula:

$$a_{hw} = \sqrt{a_{x/hw}^2 + a_{y/hw}^2 + a_{z/hw}^2}$$

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**14 Moisture resistance**

This clause of Part 1 is applicable.

**15 Insulation resistance and electric strength**

This clause of Part 1 is applicable.

**16 Endurance**

This clause of Part 1 is applicable except as follows:

**16.2 Addition:**

*During the test the saw chain is removed.*

**17 Abnormal operation**

This clause of Part 1 is applicable.

## 18 Mechanical hazards

This clause of Part 1 is applicable except as follows:

### 18.3 Replacement:

Chain saw shall be provided with a front handle and a rear handle. The part containing the motor, if suitably shaped, may be considered as a handle.

Gripping length of the front handles shall be at least 100 mm.

The minimum clearance dimensions of the handles shall be as shown in Table 102 and the appropriate figures in accordance with the indications in Table 102.

*Compliance is checked by inspection and measurement.*

**Table 102 - Clearance dimensions of handles**

Handle	Description	Dimension (see figures)	Figure	Minimum size mm
Front	Finger clearance in the handle grip area	A	108	35
	Clearance between the front of the chain saw body and the handle at the top measured 60 mm to the left of the guide bar plane	B	108	40 <sup>1)</sup>
	Clearance between the front of the chain saw body and the handle measured at the centre line of the guide bar	C	108	25 <sup>1)</sup>
	Effective gripping length	H	107	4 x 25
Front and rear	Perimeter of the cross-section of the handle	-	-	65
	Distance from rear side of the switch actuator to the centre of the front handle at the top	D	108	2)
Rear	Finger clearance at the released switch actuator	E	105	30
	Clearance below the released switch actuator	F	105	35
	Clearance behind the released switch actuator	4 x G	106	4 x 25
<sup>1)</sup> If the saw has a permanently fixed spiked bumper, measurement shall be made from the plane of the root of the bumper teeth. <sup>2)</sup> Dimension D shall be at least 225 mm or 30% of the overall length of the saw, including guide bar and saw chain, whatever is lower.				