



IEC 62841-2-11

Edition 1.1 2018-01

# CONSOLIDATED VERSION



---

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –  
Part 2-11: Particular requirements for hand-held reciprocating saws**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

---

ICS 25.140.20; 25.140.30

ISBN 978-2-8322-5315-1

**Warning! Make sure that you obtained this publication from an authorized distributor.**

# REDLINE VERSION



---

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –  
Part 2-11: Particular requirements for hand-held reciprocating saws**

## CONTENTS

FOREWORD .....	4
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 General requirements .....	6
5 General conditions for the tests .....	7
6 Radiation, toxicity and similar hazards .....	7
7 Classification .....	7
8 Marking and instructions .....	7
9 Protection against access to live parts .....	7
10 Starting .....	7
11 Input and current .....	8
12 Heating .....	8
13 Resistance to heat and fire .....	8
14 Moisture resistance .....	8
15 Resistance to rusting .....	8
16 Overload protection of transformers and associated circuits .....	8
17 Endurance .....	8
18 Abnormal operation .....	8
19 Mechanical hazards .....	9
20 Mechanical strength .....	9
21 Construction .....	10
22 Internal wiring .....	10
23 Components .....	10
24 Supply connection and external flexible cords .....	10
25 Terminals for external conductors .....	10
26 Provision for earthing .....	10
27 Screws and connections .....	10
28 Creepage distances, clearances and distances through insulation .....	10
Annexes .....	14
Annex I (informative) Measurement of noise and vibration emissions .....	14
Annex K (normative) Battery tools and battery packs .....	21
Annex L (normative) Battery tools and battery packs provided with mains connection or non-isolated sources .....	22
Bibliography .....	23
Figure 101 – Test probe .....	11
Figure 102 – Typical designs of jig saws .....	12
Figure 103 – Typical designs of sabre saws .....	12
Figure 104 – Minimum dimensions of barrier .....	13
Figure I.101 – Test set-up for jig saws .....	18

Figure I.102 – Test set-up for sabre saws .....	19
Figure I.103 – Positions of transducers for sabre saws .....	20
Figure I.104 – Positions of transducers for jig saws .....	20
Table 4 – Required performance levels .....	8
Table I.101 – Test conditions for sabre and jig saws cutting board.....	15
Table I.102 – Test conditions for jig saws cutting sheet metal .....	16
Table I.103 – Test conditions for sabre saws cutting wooden beams.....	16

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

---

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

#### **Part 2-11: Particular requirements for hand-held reciprocating saws**

#### **FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

#### **DISCLAIMER**

**This Consolidated version is not an official IEC Standard and has been prepared for user convenience. Only the current versions of the standard and its amendment(s) are to be considered the official documents.**

**This Consolidated version of IEC 62841-2-11 bears the edition number 1.1. It consists of the first edition (2015-11) [documents 116/246/FDIS and 116/256/RVD] and its amendment 1 (2018-01) [documents 116/353/FDIS and 116/360/RVD]. The technical content is identical to the base edition and its amendment.**

**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.**

International Standard IEC 62841-2-11 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 2-11 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This Part 2-11 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC standard: Particular requirements for hand-held reciprocating saws.

Where a particular subclause of Part 1 is not mentioned in this Part 2-11, 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 and figures which are additional to those in Part 1 are numbered starting from 101.

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 the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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.

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

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

## Part 2-11: Particular requirements for hand-held reciprocating saws

### 1 Scope

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

*Addition:*

This part of IEC 62841 applies to **reciprocating saws** such as **jig saws** and **sabre saws**.

### 2 Normative references

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

*Addition:*

ISO 16893-1:2008, *Wood based panels – Particleboard – Part 1: Classifications*

# FINAL VERSION

---

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –  
Part 2-11: Particular requirements for hand-held reciprocating saws**





## CONTENTS

FOREWORD .....	4
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 General requirements .....	6
5 General conditions for the tests .....	7
6 Radiation, toxicity and similar hazards .....	7
7 Classification .....	7
8 Marking and instructions .....	7
9 Protection against access to live parts .....	7
10 Starting .....	7
11 Input and current .....	8
12 Heating .....	8
13 Resistance to heat and fire .....	8
14 Moisture resistance .....	8
15 Resistance to rusting .....	8
16 Overload protection of transformers and associated circuits .....	8
17 Endurance .....	8
18 Abnormal operation .....	8
19 Mechanical hazards .....	9
20 Mechanical strength .....	9
21 Construction .....	10
22 Internal wiring .....	10
23 Components .....	10
24 Supply connection and external flexible cords .....	10
25 Terminals for external conductors .....	10
26 Provision for earthing .....	10
27 Screws and connections .....	10
28 Creepage distances, clearances and distances through insulation .....	10
Annexes .....	14
Annex I (informative) Measurement of noise and vibration emissions .....	14
Annex K (normative) Battery tools and battery packs .....	21
Annex L (normative) Battery tools and battery packs provided with mains connection or non-isolated sources .....	22
Bibliography .....	23
Figure 101 – Test probe .....	11
Figure 102 – Typical designs of jig saws .....	12
Figure 103 – Typical designs of sabre saws .....	12
Figure 104 – Minimum dimensions of barrier .....	13
Figure I.101 – Test set-up for jig saws .....	18

Figure I.102 – Test set-up for sabre saws .....	19
Figure I.103 – Positions of transducers for sabre saws .....	20
Figure I.104 – Positions of transducers for jig saws .....	20
Table 4 – Required performance levels .....	8
Table I.101 – Test conditions for sabre and jig saws cutting board.....	15
Table I.102 – Test conditions for jig saws cutting sheet metal .....	16
Table I.103 – Test conditions for sabre saws cutting wooden beams.....	16

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

---

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

#### **Part 2-11: Particular requirements for hand-held reciprocating saws**

#### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

#### **DISCLAIMER**

**This Consolidated version is not an official IEC Standard and has been prepared for user convenience. Only the current versions of the standard and its amendment(s) are to be considered the official documents.**

**This Consolidated version of IEC 62841-2-11 bears the edition number 1.1. It consists of the first edition (2015-11) [documents 116/246/FDIS and 116/256/RVD] and its amendment 1 (2018-01) [documents 116/353/FDIS and 116/360/RVD]. The technical content is identical to the base edition and its amendment.**

**This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.**

International Standard IEC 62841-2-11 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 2-11 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This Part 2-11 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC standard: Particular requirements for hand-held reciprocating saws.

Where a particular subclause of Part 1 is not mentioned in this Part 2-11, 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 and figures which are additional to those in Part 1 are numbered starting from 101.

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 the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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.

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

## Part 2-11: Particular requirements for hand-held reciprocating saws

### 1 Scope

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

*Addition:*

This part of IEC 62841 applies to **reciprocating saws** such as **jig saws** and **sabre saws**.

### 2 Normative references

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

*Addition:*

ISO 16893-1:2008, *Wood based panels – Particleboard – Part 1: Classifications*