UL 60745-2-19

STANDARD FOR SAFETY

Hand-Held Motor-Operated Electric Tools – Safety – Part 2-19: Particular Requirements For Jointers

UL Standard for Safety for Hand-Held Motor-Operated Electric Tools – Safety – Part 2-19: Particular Requirements For Jointers, UL 60745-2-19

First Edition, Dated November 25, 2005

Summary of Topics

This revision of ANSI/UL 60745-2-19 dated June 17, 2020 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.

As noted in the Commitment for Amendments statement located on the back side of the title page, UL and CSA are committed to updating this harmonized standard jointly. However, the revision pages dated June 17, 2020 will not be jointly issued by UL and CSA as these revision pages only address UL ANSI approval dates.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated March 27, 2020.

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CSA Group
CAN/CSA-C22.2 No. 60745-2-19-05
First Edition
(IEC 60745-2-19:2005, IDT)

Underwriters Laboratories Inc.
UL 60745-2-19
First Edition

Hand-Held Motor-Operated Electric Tools – Safety – Part 2-19: Particular Requirements For Jointers

November 25, 2005

(Title Page Reprinted: June 17, 2020)

This standard is an adoption of IEC 60745-2-19, First Edition (2005).

Approved American National Standard

ANSI/UL 607452-2-19-2011 (R2020)

Commitment for Amendments

This standard is issued jointly by the Canadian Standards Association (operating as "CSA Group"), and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to CSA Group or UL at anytime. Revisions to this standard will be made only after processing according to the standards development procedures of CSA Group and UL. CSA Group and UL will issue revisions to this standard by means of a new edition or revised or additional pages bearing their date of issue.

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This Standard is subject to review within five years from the date of publication, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup. org and include "Proposal for change" in the subject line: Standard designation (number); relevant clause, table, and/or figure number; wording of the proposed change; and rationale for the change.

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This ANSI/UL Standard for Safety consists of the First Edition including revisions through June 17, 2020. The most recent designation of ANSI/UL 60745-2-19 as a Reaffirmed American National Standard (ANS) occurred on June 4, 2020. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface. The National Difference Page and IEC Foreword are also excluded from the ANSI approval of IEC-based standards.

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Preface

This is the harmonized CSA and UL standard for *Hand-Held Motor-Operated Electric Tools – Safety – Part 2-19: Particular Requirements For Jointers*. It is the first edition of CAN/CSA-C22.2 No. 60745-2-19 and the first edition of UL 60745-2-19. This standard is an adoption of IEC 60745-2-19, Edition 1.1.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This harmonized standard was prepared by the Canadian Standards Association (CSA) and Underwriters Laboratories Inc. (UL).

This standard was reviewed by the CSA Subcommittee on Portable Electric Tools, under the jurisdiction of the CSA Technical Committee on Consumer and Commercial Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

This standard has been approved as a National Standard of Canada by the Standards Council of Canada (SCC).

This standard has been approved by the American National Standards Institute (ANSI) as an American National Standard.

Where reference is made to a specific number of samples to be tested, the specified number shall be considered a minimum quantity.

Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

Level of Harmonization

This standard adopts the IEC text with no national differences.

This standard is published as an identical standard for CSA and UL.

An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

Interpretations

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one literal interpretation has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

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For CSA Group, the text, figures, and tables of International Electrotechnical Commission Publication 60745-2-19, Hand-Held Motor-Operated Electric Tools – Safety – Part 2-19: Particular Requirements for

Jointers, copyright 2010, are used in this standard with the consent of the International Electrotechnical Commission. The IEC Foreword and Introduction are not a part of the requirements of this standard but are included for information purposes only.

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NATIONAL DIFFERENCES

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

In the CSA and UL publications of this standard, National Differences from the text of International Electrotechnical Commission (IEC) Publication 60745-2-19, Safety Requirements for Hand-Held Motor-Operated Electrical Tools – Safety – Part 2-19: Particular Requirements for Jointers, copyright 2010 are indicated by notations (differences) and are presented in bold text. The national difference type is included in the body.

DR – These are National Differences based on the **national regulatory requirements**.

D1 – These are National Differences which are based on **basic safety principles and requirements**, elimination of which would compromise safety for consumers and users of products.

D2 – These are National Differences from IEC requirements based on existing **safety practices**. These requirements reflect national safety practices, where empirical substantiation (for the IEC or national requirement) is not available or the text has not been included in the IEC standard.

DC – These are National Differences based on the **component standards** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE – These are National Differences based on **editorial comments or corrections**.

Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:

Addition / Add - An addition entails adding a complete new numbered clause, subclause, table, figure, or annex. Addition is not meant to include adding select words to the base IEC text.

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Deletion / Delete - A deletion entails complete deletion of an entire numbered clause, subclause, table, figure, or annex without any replacement text.

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FOREWORD

INTERNATIONAL ELECTROTECHNICAL COMMISSION

HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS – SAFETY – Part 2-19: Particular Requirements for Jointers

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.

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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.

This consolidated version of IEC 60745-2-19 consists of the first edition (2005) [documents 61F/582A/FDIS and 61F/597/RVD] and its amendment 1 (2010) [documents 116/36/FDIS and 116/44/RVD]. It bears the edition number 1.1.

The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience. A vertical line in the margin shows where the base publication has been modified by amendment 1. Additions and deletions are displayed in red, with deletions being struck through.

International Standard IEC 60745-2-19 has been prepared by subcommittee 61F: Safety of hand-held motor-operated electric tools, of IEC technical committee 61: Safety of household and similar electrical appliances.

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

This Part 2 is to be used in conjunction with the latest edition of IEC 60745-1: Hand-held motor-operated electric tools – Part 1: General requirements and its amendments. It was established on the basis of the third edition (2001) of that standard.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60745-1.

This part 2 supplements or modifies the corresponding clauses of IEC 60745-1, so as to convert that publication into the IEC standard: Safety requirements for electric jointers.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

NOTE 2 The following numbering system is used:

– subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;

– additional annexes are lettered AA, BB, etc.

NOTE 3 In this standard, the following print types are used:

– requirements: in roman type;

– *test specifications: in italic type;*
notes: in smaller roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS – SAFETY –PART 2-19: PARTICULAR REQUIREMENTS FOR JOINTERS

1 Scope

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

Addition:

This standard applies to **jointers** for cutting into wood or similar material.

2 Normative references

This clause of Part 1 is applicable.

3 Terms and Definitions

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

3.101 **Jointer:** tool equipped with a **disc cutter** intended to cut a slot or groove.

NOTE: Examples of **jointer** designs are shown in Figure 101

3.102 **Disc cutter:** rotating cutting accessory having its main feed direction perpendicular to its axis of rotation, for working in wood or similar material through chip removing, cutting on its periphery and both flanks simultaneously. The diameter of the accessory is much larger than its thickness

4 General requirements

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable.

6 Void

7 Classification

This clause of Part 1 is applicable.

8 Marking and instructions

This clause of Part 1 is applicable except as follows:

8.1 *Addition:*

Jointers shall be marked with:

– direction of rotation of the output spindle, this shall be indicated by an arrow, raised or recessed or by any other means no less visible and indelible;

– rated no-load speed of the output spindle;

– recommended **disc cutter** diameter.

8.12.1.1 *Addition:*

Jointer Safety Warnings

– Disc cutters must be rated for at least the speed marked on the tool. *Disc cutters running over rated speed can fly apart and cause injury.*

NOTE The term “disc cutter” may be replaced by other terms to reflect regional differences.

– Always use the guard. *The guard protects the operator from broken disc cutter fragments and unintentional contact with the disc cutter.*

NOTE The term “disc cutter” may be replaced by other terms to reflect regional differences.

– **Hold power tool by insulated gripping surfaces, because the cutter may contact its own cord.** *Cutting a “live” wire may make exposed metal parts of the power tool “live” and could give the operator an electric shock.*

8.12.2 b) *Addition:*

101) Dimensions or type of **disc cutters** to be used

102) Instruction not to use blunt or damaged **disc cutters**

103) Instruction to check the proper function of the guard retracting system before use.

9 Protection against access to live parts

This clause of Part 1 is applicable.

10 Starting

This clause of Part 1 is applicable.

11 Input and current

This clause of Part 1 is applicable.

12 Heating

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

12.4 *Replacement:*

The tool is operated at rated input or rated current for 30 min. The temperature rises are measured at the end of the 30 min.

13 Leakage current

This clause of Part 1 is applicable.

14 Moisture resistance

This clause of Part 1 is applicable.

15 Electric strength

This clause of Part 1 is applicable.

16 Overload protection of transformers and associated circuits

This clause of Part 1 is applicable.

17 Endurance

This clause of Part 1 is applicable.

18 Abnormal operation

This clause of Part 1 is applicable.

19 Mechanical hazards

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

19.1 *Addition:*

Parts of the guarding system which have to be opened for replacement of the **disc cutter** may be opened without the aid of a tool, provided these parts remain connected with the tool and the tool is not usable with these parts in open position.

Additional subclauses:

19.101 Disc cutter guard

A **jointer** shall be provided with a guard that automatically retracts to the closed position when not in use. There shall be no provision for locking the guard in the open position. The guard shall be so constructed that it stays in contact with the work piece when the tool is retracted, or when released from its full open position, it shall retract to its fully closed position.

Compliance is checked by inspection, and by the following tests:

One sample of the tool is to be conditioned by cycling the guard from the fully closed position to the maximum open working position and then releasing for 50 000 cycles at a rate not less than 10 cycles per minute.

*Following the cycling, the tool is oriented with the weight of the tool in a direction causing the guard to open. The **disc cutter** shall not be accessible to a straight edge applied perpendicular to the **disc cutter**.*

The sample or a second sample at the manufacturers option is to then be conditioned by making 50 plunge cuts into soft wood that has been stored indoors for 72 h prior to the sawing. The tool is then conditioned for 24 h in a relative humidity of (90 +5/ -0) % and at a temperature of (32 ± 2) °C.

The tool need not be conditioned by wood cutting if the accumulation of saw dust will not affect the closure of the guard.

*Following conditioning, the guard is to be operated through one complete cycle and the tool is oriented with the weight of the tool in a direction causing the guard to open. The **disc cutter** shall not be accessible to a straight edge applied perpendicular to the **disc cutter**.*

19.102 Handles

Jointers shall be provided with at least two handles. The motor casing may be considered as a handle, if suitably shaped.

Compliance is checked by inspection.

19.103 Disc cutter changing

Provision shall be made to enable the operator to replace the **disc cutter** without difficulty.

Examples of such designs are: spindle lock, flats on the outer flange or other means recommended by the manufacturer.

Compliance is checked by inspection.

20 Mechanical strength

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

20.3 This clause of Part 1 is applicable for all parts except the **disc cutter** and guard. The **disc cutter** and guard shall be evaluated in accordance with 20.101.

20.101 A **jointer** guard shall have adequate mechanical strength.

Compliance is checked by the following tests, for which a separate sample may be used.

*A **jointer** retracting guard shall withstand the tool being dropped one time from a height of 1 m onto a concrete surface. The tool shall be oriented to achieve the most adverse affect on the guard.*

*Following the impact, the guard is to be operated through one complete cycle and the tool is then oriented with the weight of the tool in a direction causing the guard to open. The **disc cutter** shall not be accessible to a straight edge applied perpendicular to the **disc cutter**.*

21 Construction

This clause of Part 1 is applicable.

22 Internal wiring

This clause of Part 1 is applicable.

23 Components

This clause of Part 1 is applicable.

24 Supply connection and external flexible cords

This clause of Part 1 is applicable.

25 Terminals for external conductors

This clause of Part 1 is applicable.

26 Provision for earthing

This clause of Part 1 is applicable.

27 Screws and connections

This clause of Part 1 is applicable.

28 Creepage distances, clearances and distances through insulation

This clause of Part 1 is applicable.

29 Resistance to heat, fire and tracking

This clause of Part 1 is applicable.

30 Resistance to rusting

This clause of Part 1 is applicable.

31 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.

Figure 101

Examples of jointers designs