UL 60745-2-2

STANDARD FOR SAFETY

Hand-Held Motor-Operated Electric Tools – Safety – Part 2-2: Particular Requirements for Screwdrivers and Impact Wrenches

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UL Standard for Safety for Hand-Held Motor-Operated Electric Tools – Safety – Part 2-2: Particular Requirements for Screwdrivers and Impact Wrenches, UL 60745-2-2

Second Edition, Dated March 26, 2004

Summary of Topics

The revisions dated October 31, 2014 are being issued to incorporate the following proposals and to reflect the latest ANSI approval date for UL 60745-2-2.

1. Addition Of National Difference Clauses To Specify Ratchet Drivers In The Scope Of The Standard And To Clarify Test Requirements As They Apply To Ratchet Drivers

Note: Annex 2.DVL was originally provided as supplemental information and was considered editorial, Type DE. The annex is now considered no longer necessary, and has been deleted.

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.

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Underwriters Laboratories Inc.
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Hand-Held Motor-Operated Electric Tools – Safety – Part 2-2: Particular Requirements for Screwdrivers and Impact Wrenches

March 26, 2004

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This national standard is based on publication IEC 60745-2-2, Second Edition (2003).

This amendment is an adoption of IEC Amendment 1(2008) to publication IEC 60745-2-2, Second Edition (2005).



ANSI/UL 60745-2-2-2014

Approved by



Standards Council of Canada
Conseil canadien des normes

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The most recent designation of ANSI/UL 60745-2-2 as a Reaffirmed American National Standard (ANS) occurred on October 31, 2014. The ANSI approval for this standard does not include the Cover Page, Transmittal Pages, Title Page, Preface Page, National Difference Page or IEC Foreword.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at http://csds.ul.com.

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CONTENTS

Preface 5

FOREWORD 8

1 Scope 11
2 Normative references 11
3 Terms and Definitions 11
4 General requirements 11
5 General conditions for the tests 11
6 Void 12
7 Classification 12
8 Marking and instructions 12
9 Protection against access to live parts 12
10 Starting 12
11 Input and current 12
12 Heating 12
13 Leakage current 13
14 Moisture resistance 13
15 Electric strength 13
16 Overload protection of transformers and associated circuits 13
17 Endurance 14
18 Abnormal operation 14A
19 Mechanical hazards 14A
20 Mechanical strength 14A
21 Construction 14A
22 Internal wiring 14A
23 Components 14B
24 Supply connection and external flexible cords 14B
25 Terminals for external conductors 14B
26 Provision for earthing 14B
27 Screws and connections 14B
28 Creepage distances, clearances and distances through insulation 14B
29 Resistance to heat, fire and tracking 14B
30 Resistance to rusting 14B
31 Radiation, toxicity and similar hazards 14B

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Annexes

Annex K – Battery Tool and Battery Packs

Annex L – Battery Tools and Battery Packs Provided with Mains Connection or Non-Isolated Sources

Annex 2.DVL – List of National Differences

Bibliography

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Preface

This is the common CSA and UL standard for hand-held motor-operated electric tools. It is the second edition of CAN/CSA-C22.2 No. 60745-2-2 and the second edition of UL 60745-2-2. This standard is based on IEC 60745-2-2, second edition.

The first edition of this standard was designated CAN/CSA-C22.2 No. 745-2-2/UL 745-2-2. This Standard CAN/CSA-C22.2 No. 60745-2-2/UL 60745-2-2, second edition, supersedes:

a) the first edition CAN/CSA-C22.2 No. 745-2-2/UL 745-2-2 published in 1995; and

b) CAN/CSA-C22.2 No. 745-4-2/UL 745-4-2, (requirements for battery tools and battery packs are now incorporated into the requirements of CAN/CSA-C22.2 No. 60745-2-2, second edition, and UL 60745-2-2, second edition).

The standard number has been aligned to correspond with the equivalent IEC 60745-2-2 standard.

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

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.

A UL standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements.

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

Level of harmonization

This standard adopts the IEC text with national differences. This standard is published as an equivalent 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.

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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.

CSA effective date

The effective date for CSA International will be announced through CSA Informs or a CSA certification notice.

UL effective date

UL 60745-2-2, second edition, was effective on October 31, 2012.

A UL effective date is one established by Underwriters Laboratories Inc. and is not part of the ANSI approved standard.

General

The previous version of CAN CSA C22.2 No. 60745-2-2-04/UL 60745-2-2 included a national difference to IEC Clause 8.12.1. The national difference was deleted in this version of CAN CSA C22.2 No. 60745-2-2-04/UL 60745-2-2.

Annex 2.DVL was originally provided as supplemental information and was considered editorial, Type DE. The annex is now considered no longer necessary, and has been deleted.

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.

National Differences from the text of the International Electrotechnical Commission (IEC) publication 60745-2-2 (Hand-Held Motor-Operated Electric Tools – Safety – Part 2-2: Particular Requirements for Screwdrivers and Impact Wrenches) are indicated by the following notation:

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.

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

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS – SAFETY – PART 2-2: PARTICULAR REQUIREMENTS FOR SCREWDRIVERS AND IMPACT WRENCHES

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 nongovernmental 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.

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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.

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

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Main changes include Clause 12: Heating, introducing slightly different test cycles, Clause 17: Endurance, introducing both a no-load test and a practical test, and Clause 14: Supply connection and external flexible cords, in respect to minimum cable specifications. Subclause 2.2.23 has been removed, as the definitions of “normal load” are now generally covered by Part 1.

This consolidated version of IEC 60745-2-2 consists of the second edition (2003) [documents 61F/461/FDIS and 61F/485/RVD] and its amendment 1 (2008) [documents 61F/732/FDIS and 61F/752/RVD].

The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience.

It bears the edition number 2.1.

A vertical line in the margin shows where the base publication has been modified by amendment 1.

The French version of this standard has not been voted upon.

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

This Part 2-2 is to be used in conjunction with the third edition of IEC 60745-1: Safety of hand-held motor-operated electric tools – Part 1: General requirements. When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

With amendment 1, this Part 2 is established on the basis of the fourth edition (2006) of IEC 60745-1, Hand-held motor-operated electric tools – Safety – Part 1: General requirements.

Main changes include editorial modifications to match with the fourth edition of IEC 60745-1, addition of a new safety warning to Clause 8: Marking and instructions, and clarifications in Annex K.

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

– requirements: in roman type;

– *test specifications: in italic type*;

– notes: in smaller roman type

Subclauses, tables and figures which are additional to those in Part 1 are numbered starting from 101; additional annexes are lettered AA, BB, etc.

IEC 60745 consists of the following parts, under the general title *Hand-held motor-operated electric tools – Safety*:

Part 1: General requirements

Part 2-1: Particular requirements for drills and impact drills

Part 2-2: Particular requirements for screwdrivers and impact wrenches

Part 2-3: Particular requirements for grinders, polishers and disk-type sanders

Part 2-4: Particular requirements for sanders and polishers other than disk type

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Part 2-5: Particular requirements for circular saws and circular knives

Part 2-6: Particular requirements for hammers

Part 2-7: Particular requirements for spray guns for non-flammable liquids

Part 2-8: Particular requirements for shears and nibblers

Part 2-9:Particular requirements for tappers

Part 2-11: Particular requirements for reciprocating saws (jig and sabre saws)

Part 2-12: Particular requirements for concrete vibrators

Part 2-13: Particular requirements for chain saws

Part 2-14: Particular requirements for planers

Part 2-15: Particular requirements for hedge trimmers and grass shears

Part 2-16: Particular requirements for tackers

Part 2-17: Particular requirements for routers and trimmers

Part 2-18: Particular requirements for strapping tools

Part 2-19: Particular requirements for jointers

Part 2-20: Particular requirements for band saws

Part 2-21: Particular requirements for drain cleaners

The committee has decided that the contents of the base publication and its amendments 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.

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HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS – SAFETY – Part 2-2: PARTICULAR REQUIREMENTS FOR SCREWDRIVERS AND IMPACT WRENCHES

1 Scope

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

Addition:

This standard applies to screwdrivers and impact wrenches.

1DV D1 *Modification: Replace the third paragraph of Clause 1 of the Part 2 with the following:*

This standard applies to screwdrivers, impact wrenches, and ratchet drivers.

2 Normative references

This clause of part 1 is applicable.

3 Terms and Definitions

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

Additional definitions:

3.101 screwdriver: Tool intended for tightening and loosening screws, nuts, and the like and not equipped with an impacting mechanism but which may have a device for depth setting or setting the torque or means for switching off the rotation

3.102 impact wrench: Tool intended for tightening and loosening screws, nuts, and the like and equipped with a rotary impact mechanism. Some impact wrenches are equipped with a means for depth setting and may have a means for setting the torque or switching off the rotation

3.103DV D1 *Addition: Add the following definition to Clause 3 of the Part 2:*

3.103DV.1 ratchet driver: Tool intended for tightening and loosening screws, nuts, and the like and equipped with a ratcheting mechanism. Some ratchet drivers are equipped with a means for switching the direction of rotation

4 General requirements

This clause of part 1 is applicable.

5 General conditions for the tests

This clause of part 1 is applicable.

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