

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Hand-held motor-operated electric tools – Safety –
Part 2-17: Particular requirements for routers and trimmers
(standards.iteh.ai)

Outils électroportatifs à moteur – Sécurité –
Partie 2-17: Règles particulières pour les défonceuses et les affleureuses



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

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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	6
6 Void.....	6
7 Classification.....	6
8 Marking and instructions.....	7
9 Protection against access to live parts.....	7
10 Starting	7
11 Input and current	7
12 Heating	7
13 Leakage current	7
14 Moisture resistance	8
15 Electric strength	8
16 Overload protection of transformers and associated circuits.....	8
17 Endurance.....	8
18 Abnormal operation	8
19 Mechanical hazards.....	8
20 Mechanical strength.....	9
21 Construction.....	9
22 Internal wiring.....	9
23 Components	9
24 Supply connection and external flexible cords	9
25 Terminals for external conductors.....	9
26 Provision for earthing	9
27 Screws and connections.....	10
28 Creepage distances, clearances and distances through insulation.....	10
29 Resistance to heat, fire and tracking.....	10
30 Resistance to rusting.....	10
31 Radiation, toxicity and similar hazards.....	10
Annexes	12
Annex K (normative) Battery tools and battery packs	12
Annex L (normative) Battery tools and battery packs provided with mains connection or non-isolated sources.....	12
Annex M (normative) Safety of working stands for operation with hand-held motor- operated electric tools	13
Bibliography.....	30

ITeH STANDARD PREVIEW
(standards.iteh.ai)

[IEC 60745-2-17:2010](#)

[http://standards.iteh.ai/catalog/standards/sist/3f82ecff-5924-4f06-ac59-e5be2c256fc6/iec-60745-2-17-2010](#)

Figure 101 – Measurement of distance between handle and cutter	11
Figure M.301 – Working stand with installed hand-held router.....	23
Figure M.302 – Dimensions of table	23
Figure M.303 – Dimension of table rings	24
Figure M.304 – Fence	24
Figure M.305 – Examples of guides suitable for curved work	25
Figure M.306 – Test probe	26
Figure M.307 – Definition of fence pressure device deflection measuring point and directions of application of test forces	26
Figure M.308 – Definition of fence pressure device deflection measuring point and directions of application of test forces (vertical view)	27
Figure M.309 – Definition of table pressure device deflection measuring point and directions of application of test forces (horizontal view)	27
Figure M.310 – Definition of the adjustable guard deflection measuring points and directions of application of test forces	28
Figure M.311 – Definition of guiding steady deflection measuring points and directions of application of test forces	29
Figure M.312 – Definition of the adjustment of the fence plates in the direction perpendicular to the plane of the fence	29

iTeh STANDARD PREVIEW

Table M.301 – Fences and table pressure device displacement	21
Table M.302 – Adjustable guard deflection	21
Table M.303 – Guiding steady deflection	22

IEC 60745-2-17:2010
<https://standards.iteh.ai/catalog/standards/sist/3f82ecff-5924-4f06-ac59-e5be2c256fc6/iec-60745-2-17-2010>

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**HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS –
SAFETY –****Part 2-17: Particular requirements for routers and trimmers**

FOREWORD

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International Standard IEC 60745-2-17 has been prepared by IEC technical committee 116: Safety of hand-held motor-operated electric tools.

This third edition cancels and replaces the second edition published in 2003, of which it constitutes a technical revision. Main changes include: Clause 8: Marking and instructions, addition of some router specific safety warnings, clarifications in Annex K, the addition of Annex M: Safety of working stands for operation with hand-held motor-operated electric tools, and editorial modifications to match with the fourth edition of IEC 60745-1.

The text of this standard is based on the following documents:

FDIS	Report on voting
116/38/FDIS	116/47/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

This Part 2-17 is to be used in conjunction with the fourth edition (2006) of IEC 60745-1: *Safety of hand-held motor-operated electric tools – Part 1: General requirements*. It was established on the basis of the fourth edition of that standard.

When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

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.

A list of all parts of the IEC 60745 series, under the general title: *Hand-held motor-operated electric tools – Safety*, can be found on the IEC website.

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The committee has decided that the contents of this publication 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.

HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS – SAFETY –

Part 2-17: Particular requirements for routers and trimmers

1 Scope

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

Addition:

This standard applies to routers and trimmers.

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 router

tool designed to be fitted with rotary cutter and with a base that allows control of cutting slots into or shaping the edge of various materials

3.102 trimmer

tool designed to be fitted with rotary cutter and a base that allows for control of trimming the edge of laminate sheet or similar materials

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.

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8 Marking and instructions

This clause of Part 1 is applicable except as follows:

8.1 Addition:

- rated no-load speed in revolutions per minute.

8.12.1.1 Addition:

- **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 shock the operator.*
- **Use clamps or another practical way to secure and support the workpiece to a stable platform.** *Holding the work by your hand or against the body leaves it unstable and may lead to loss of control.*

8.12.2 a) Addition:

- 7) Details of the type of cutters for which the tool is designed
- 8) Draw attention to the necessity for using bits of the correct shank diameter suitable for the speed of the tool
- 9) Information concerning the diameter of shank for which the collet is designed

9 Protection against access to live parts

This clause of Part 1 is applicable.

10 Starting

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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 for 15 cycles, each cycle comprising a period of continuous operation of 1 min and a rest period of 1 min with the tool switched off. During the periods of operation, the tool is loaded by means of a brake adjusted so as to attain rated input or rated current. The temperature rises are measured at the end of the 15th "on" period, or at the manufacturer's option, the tool may be operated continuously until thermal stabilisation.

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 Replacement:

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IEC 60745-2-17:2010

Routers shall be equipped with a base plate which surrounds the cutter in the plane of the plate so as to prevent inadvertent contact with the cutter during normal operation.

Compliance is checked by inspection.

Additional subclauses:

19.4.101 At least two handles are required if the mass exceeds 2 kg.

The handles shall be so shaped or located as to minimise the risk of inadvertent contact of the user's hand with rotating parts. Inadvertent contact of the user's hand is, for example, considered to be sufficiently prevented if the gripping area of the handle is provided with a suitable shroud(s) or barrier at its end(s) adjacent to the body of the tool, or the distance from a defined measuring point on the handle surface to the cutter is a minimum of 120 mm.

Compliance is checked by inspection and measurement. The measurement shall be carried out as a chain distance (see Figure 101).

With the base plate set to maximum depth of cut, to establish the measuring point on the auxiliary handle, follow the outlined procedure below.

- a) *Establish the closest (A) and the most distant (B) points from the plane of the base plate on the handle. Equidistant between points (A) and (B), draw the horizontal intersecting line on the plane parallel with the base plate and the surface of the handle.*
- b) *The point on the intersecting line of the handle surface with the largest radial distance from the centreline of the spindle is the defined measuring point.*

The motor housing can be considered as a handle, if suitably shaped.

The mass is measured without accessories, e.g. mandrels, cutters and flexible cable or cord.

If the motor housing is considered as the only gripping area, it shall be so shaped as to minimise the risk of inadvertent contact of the user with rotating parts. Inadvertent contact of the hand of the user is considered to be sufficiently prevented, if there is a 6 mm high barrier between the grasping surface and the cutter or if the mains switch area is at a distance of at least 120 mm from the cutter, taking into account any base plate which may be fitted.

Adjustment elements capable of being readjusted while the tool is operating, e.g. “revolving depth gauge”, shall be located so that touching of rotating parts is avoided.

Compliance is checked by inspection.

19.101 The no-load speed of the spindle at rated voltage or at the upper limit of the voltage range shall not exceed 110 % of the rated no-load speed.

Compliance is checked by measuring the speed of the spindle after the tool has been operating for 15 min at no-load.

20 Mechanical strength

This clause of Part 1 is applicable.

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21 Construction

This clause of Part 1 is applicable.

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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.

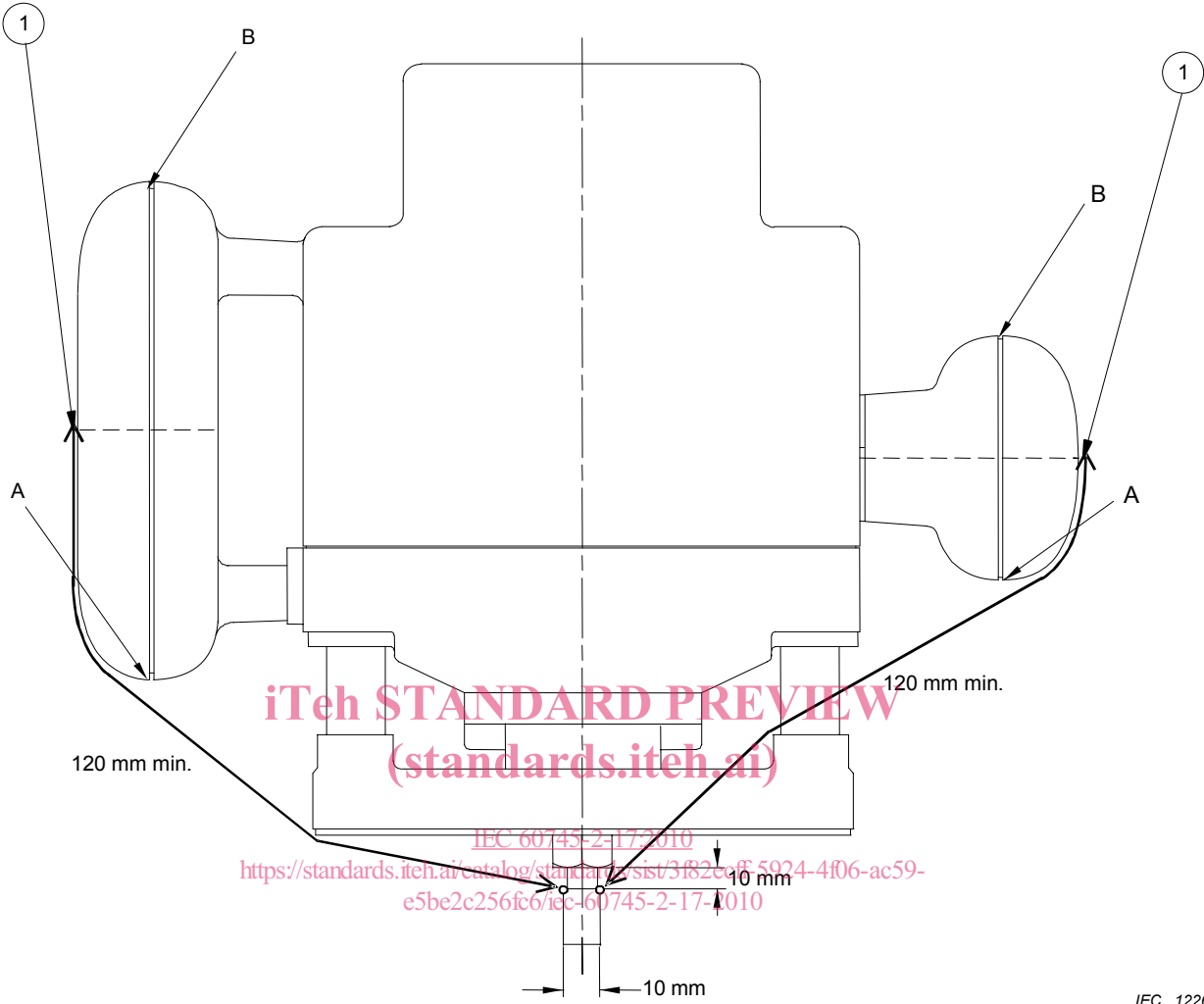
31 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.

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Key
1 defined measuring points
A, B reference points

Figure 101 – Measurement of distance between handle and cutter

Annexes

The annexes of Part 1 are applicable except as follows.

Annex K (normative)

Battery tools and battery packs

K.1 Addition:

All clauses of this Part 2 apply unless otherwise specified in this annex.

K.8.12.1.1 Addition:

- **Use clamps or another practical way to secure and support the workpiece to a stable platform.** *Holding the work by your hand or against the body leaves it unstable and may lead to loss of control.*

K.12.4 This subclause of Part 2 is not applicable.

K.21.18.2 Replacement of this subclause of part 2:

To prevent inadvertent actuation, it shall either not be possible to start the tool when a sphere with a diameter of (100 ± 1) mm is applied to the power switch control in any direction with a single linear motion

or

the power switch shall require two separate and dissimilar actions before the motor is switched on (e.g. a power switch which has to be pushed in before it can be moved laterally to close the contacts to start the motor).

Compliance is checked by inspection and by manual test.

Annex L (normative)

Battery tools and battery packs provided with mains connection or non-isolated sources

L.1 Addition:

All clauses of this Part 2 apply unless otherwise specified in this annex.

L.21.18.2 *Replacement of this subclause of part 2:*

To prevent inadvertent actuation, it shall either not be possible to start the tool when a sphere with a diameter of (100 ± 1) mm is applied to the power switch control in any direction with a single linear motion

or

the power switch shall require two separate and dissimilar actions before the motor is switched on (e.g. a power switch which has to be pushed in before it can be moved laterally to close the contacts to start the motor).

Compliance is checked by inspection and by manual test.

Annex M

(normative)

Safety of working stands for operation with hand-held motor-operated electric tools

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NOTE Subclauses, tables and figures which are additional to those in Annex M of Part 1 are numbered starting from 301 to distinguish them from additional subclauses in Annex M of Part 1, numbered starting from 201.

M.1 Scope

IEC 60745-2-17:2010

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

Addition:

This annex applies to working stands with a maximum table hole diameter of 105 mm intended to be equipped with hand-held motor operated routers for cutting wood and similar materials.

All clauses of Annex M of Part 1 apply unless otherwise specified in this annex.

M.3 Terms and definitions

Additional definitions:

M.3.301

table for hand-held routers

platform for mounting a hand-held router to be used in a stationary position similar to a vertical moulding machine (see Figure M.301)

M.3.302

straight work

machining of workpiece with one face in contact with the table and a second with a guiding device such as a fence or mitre-guide, and where the work starts at one end of the workpiece and continues through to the other end