

# Hand-held motor-operated electric tools — Safety —

## Part 2-17: Particular requirements for routers and trimmers

The European Standard EN 60745-2-17:2003 has the status of a  
British Standard

ICS 25.140.20

## National foreword

This British Standard is the official English language version of EN 60745-2-17:2003. It was derived by CENELEC from IEC 60745-2-17:2003. It supersedes BS EN 50144-2-17:2000, BS EN 50144-2-18:2000 and BS EN 50260-2-14:2002 which will be withdrawn on 2005-12-01.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by tags (e.g. **Ⓒ** **Ⓒ**).

The UK participation in its preparation was entrusted by Technical Committee CPL/61, Safety of household and similar electrical appliances, to Subcommittee CPL/61/6, Portable motor operated tools, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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### Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 11 and a back cover.

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### Amendments issued since publication

Amd. No.	Date	Comments

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 28 August 2003

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ISBN 0 580 42516 9

EUROPEAN STANDARD

**EN 60745-2-17**

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2003

ICS 25.140.20

Supersedes EN 50144-2-17:2000 & EN 50144-2-18:2000 & EN 50260-2-14:2002

English version

**Hand-held motor-operated electric tools -  
Safety**  
**Part 2-17: Particular requirements for routers and trimmers**  
(IEC 60745-2-17:2003, modified)

Outils électroportatifs à moteur -  
Sécurité  
Partie 2-17: Règles particulières  
pour les défonceuses et affleureuses  
(CEI 60745-2-17:2003, modifiée)

Handgeführte motorbetriebene  
Elektrowerkzeuge -  
Sicherheit  
Teil 2-17: Besondere Anforderungen  
für Oberfräsen und Kantenfräsen  
(IEC 60745-2-17:2003, modifiziert)

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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Ref. No. EN 60745-2-17:2003 E

## Foreword

The text of the International Standard IEC 60745-2-17:2003, prepared by SC 61F, Safety of hand-held motor-operated electric tools, of IEC/TC 61, Safety of household and similar electrical appliances, together with the common modifications prepared by the Technical Committee CENELEC TC 61F, Safety of hand-held and transportable motor-operated electric tools, was submitted to the formal vote and was approved by CENELEC as EN 60745-2-17 on 2002-12-01.

This European Standard supersedes EN 50144-2-17:2000, EN 50144-2-18:2000 and EN 50260-2-14:2002.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-12-01

Other standards referred to in this European standard are listed in Clause 2. Clause 2 lists the valid edition of those documents at the time of issue of this EN.

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) which could come within the scope of this standard;

Part 2: Requirements for particular types of tools 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 and 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 concerned.

**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.

This Part 2-17 is to be used in conjunction with EN 60745-1:2003. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

Subclauses and figures which are additional to those in Part 1 are numbered starting from 101.

Subclauses, tables and figures which are additional to those in IEC 60745-2-17 are prefixed "Z".

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

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

## Endorsement notice

The text of the International Standard IEC 60745-2-17:2003 was approved by CENELEC as a European Standard with agreed common modifications.

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## **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:

##### **1.1 Addition:**

This standard applies to routers and trimmers.

#### **2 Normative references**

This clause of Part 1 is applicable.

#### **3 Definitions**

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

##### **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 Environmental requirements

This clause of Part 1 is applicable except as follows:

### 6.1.2.4 *Modification:*

Routers and trimmers are suspended. The base plate of the tool shall be horizontal.

### 6.1.2.5 *Modification:*

Routers and trimmers are tested at no-load.

### 6.2.2.4 *Modification:*

Routers are tested under load observing the conditions shown in Table Z101.

**Table Z101 - Test conditions for routers**

Orientation	Cutting grooves in a horizontal piece of chipboard 800 mm x 400 mm x 19 mm supported on resilient material and fixed to a bench
Tool bit	Ø 12 mm straight sided bit as recommended by the manufacturer for chipboard
Feed force	Just sufficient to cut at a brisk pace
Test cycle	Cutting grooves 8 mm deep across the 400 mm width of the chipboard. Distance between grooves to be 10 mm using the guide fence if supplied.

Trimmers are tested at no-load. 

## 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:

- rated no-load speed in revolutions per minute.

### 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
- ☐ Z101) For routers: information on the correct use of the dust collection system
- Z102) For routers: advice to wear a dust mask ☐

## 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 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 15<sup>th</sup> "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:

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.*

**19.101** 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.*

**19.102** 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.

## **21 Construction**

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

### **21.Z1 Addition:**

Routers are considered to be tools where a considerable amount of dust is produced.

Trimmers are considered not to be tools where a considerable amount of dust is produced. ☐

## **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**

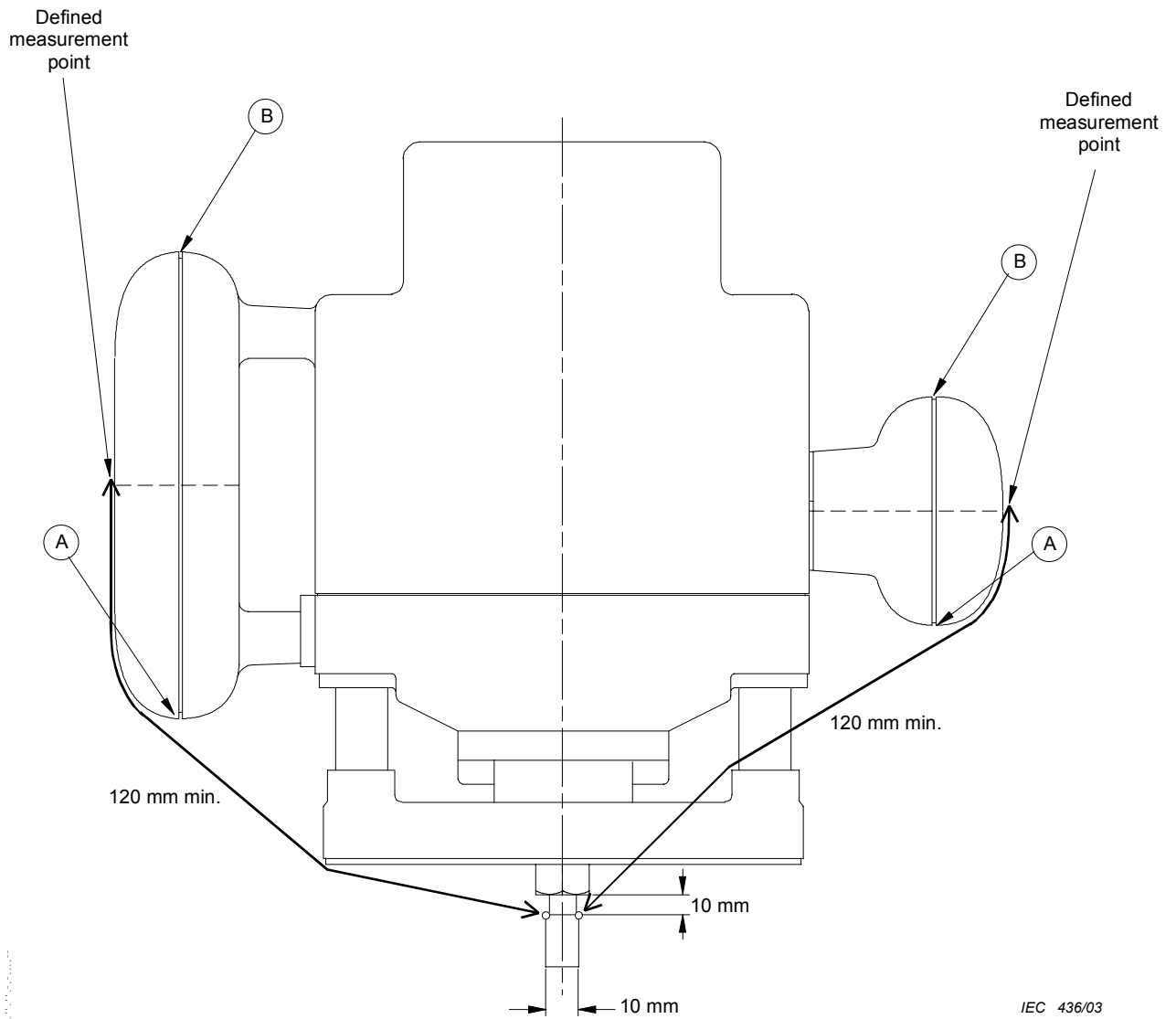
This clause of Part 1 is applicable.

## **30 Resistance to rusting**

This clause of Part 1 is applicable.

## **31 Radiation, toxicity and similar hazards**

This clause of Part 1 is applicable.



IEC 436/03

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.1.1** *Addition:*

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

### **Annex L** (normative)

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

##### **L.1.1** *Addition:*

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

## Bibliography

The bibliography of Part 1 is applicable.

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