

Safety of transportable motor-operated electric tools —

Part 2-4: Particular requirements for bench grinders

The European Standard EN 61029-2-4:2003, with the incorporation of amendment A1:2003, has the status of a British Standard

ICS 25.140.20; 25.080.50

National foreword

This British Standard is the official English language version of EN 61029-2-4:2003, including Corrigendum April 2003 and amendment A1:2003. It was derived by CENELEC from IEC 61029-2-4:1993.

The common modifications have been implemented by CENELEC and are indicated in the text by a vertical line in the left margin.

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 international/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.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

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Safety of transportable motor-operated electric tools
Part 2-4: Particular requirements for bench grinders
(including amendment A1:2003)
(IEC 61029-2-4:1993, modified)

Sécurité des machines-outils
électriques semi-fixes
Partie 2-4: Règles particulières
pour les tourets à meuler
(inclut l'amendement A1:2003)
(CEI 61029-2-4:1993, modifiée)

Sicherheit transportabler
motorbetriebener Elektrowerkzeuge
Teil 2-4: Besondere Anforderungen
für Tischschleifmaschinen
(enthält Änderung A1:2003)
(IEC 61029-2-4:1993, modifiziert)

This European Standard was approved by CENELEC on 2002-03-05. Amendment A1 was approved by CENELEC on 2003-03-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of the International Standard IEC 61029-2-4:1993, 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 electric motor-operated tools, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 61029-2-4 on 2002-03-05.

A draft for an amendment (prAA) was submitted to the formal vote and was approved by CENELEC for incorporation into EN 61029-2-4 on 2002-03-05.

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) 2003-08-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2005-03-01

In this document the common modifications to the International Standard are indicated by a vertical line in the left margin of the text.

This European Standard is divided into two parts:

Part 1 General requirements which are common to most transportable electric motor operated tools (for the purpose of this standard refer

red to simply as tools) which could come within the scope of this standard;

Part 2 Requirements for particular types of tool 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/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 relevant clauses of part 1 together with this part 2 provides one means of conforming with the specified essential health and safety requirements of the Directive.

For noise and vibration this standard covers the requirements for their measurement, the provision of information arising from these measurements and the provision of information about the personal protective equipment required. Specific requirements for the reduction of the risk arising from noise and vibration through the design of the tool are not given as this reflects the current state of the art.

As with any standard, technical progress will be kept under review so that any developments can be taken into account.

Warning: Other requirements and other EC Directives can be applicable to the products falling within the scope of this standard.

Part 2-4 is to be used in conjunction with EN 61029-1:2000.

Part 2-4 supplements or modifies the corresponding clauses of EN 61029-1, so as to convert it into the European Standard: Safety requirements for transportable bench grinders.

Where a particular subclause of part 1 is not mentioned in this part 2-4, that subclause applies as far as is reasonable. Where this part 2-4 states "addition", "modification" or "replacement", the relevant text of part 1 is to be adapted accordingly.

Subclauses, tables 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 61029-2-4 are prefixed "Z".

NOTE In this European Standard the following print types are used:

- Requirements proper;
- *Test specifications*;
- Explanatory matter.

Foreword to amendment A1

The text of amendment 1:2001 to the International Standard IEC 61029-2-4:1993, 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 Unique Acceptance Procedure and was approved by CENELEC as amendment A1 to EN 61029-2-4:2003 on 2003-03-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-04-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2006-03-01

In this document, the common modifications to the International Standard are indicated by a vertical line in the left margin of the text.

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1 Scope

This clause of part 1 is applicable except as follows:

1.1 Addition:

This International Standard applies to transportable bench grinders (Figure 101) and combined bench grinders (Figure 107) with a wheel diameter and brush diameter not exceeding 200 mm and a peripheral speed not exceeding 50 m/s, as defined in 2.101 and 2.114.

The requirements for bonded abrasive products (wheel) are given in EN 12413. The requirements for brushes are given in EN 1083.

2 Definitions

This clause of part 1 is applicable except as follows:

2.21 Replacement:

2.21

normal load

the load to obtain rated input

2.101

bench grinder

tool designed to grind metal or similar materials by means of one or two rotating abrasive wheels fixed on the tool spindle, the work piece being held by hand (see Figure 101)

2.102

accessory

device or piece other than a grinding wheel intended to be mounted on the bench grinder spindle

2.103

tool spindle

motor spindle of the bench grinder or of the combined bench grinder which supports the brush and/or grinding wheels and transports the rotation to them

2.104

nozzle for dust collection

device allowing the connection of a bench grinder or a combined bench grinder to a dust collection system

2.105

guard for wheel

device which partially encloses the abrasive wheel in order to protect the user against accidental contact with the wheel in normal use and against ejection of fragments of the wheel in the protected area in case of breakage of the wheel

2.106

flange assembly

means provided to clamp an abrasive wheel to the tool spindle

2.107**work rest**

surface or device intended to support or guide the piece to be worked

2.112**working speed**

linear peripheral speed of the wheel or of the brush while working

2.114**combined bench grinder**

tool designed to grind metal or similar materials or to clean, polish or deburr metal or similar materials by means of an abrasive wheel and a brush fixed on opposite ends of the tool spindle, and which is located in a proper workplace and where pieces are held by hand

3 General requirement

This clause of part 1 is applicable.

4 General notes on tests

This clause of part 1 is applicable.

5 Rating

This clause of part 1 is applicable.

6 Classification

This clause of part 1 is applicable.

7 Marking

This clause of part 1 is applicable except as follows:

7.1 Addition:

- the rated no-load speed in rev/min;
- the maximum diameter D of the wheel to be used;
- indication of the direction of rotation of the grinding wheel.
- for combined bench grinders, the maximum diameter D of the brush to be used;
- for combined bench grinders/brushes, a warning near to the brush holder spindle never to use a grinding wheel on the brush side of the machine;
- a warning to wear safety glasses or the relevant symbol.

7.6 Addition:

The direction of rotation of the wheel shall be indicated on the tool by an arrow raised or sunk or by any other means not less visible and indelible.

7.13 *Addition:*

The handbook or information sheet shall include all the necessary information for safe working with the bench grinder or combined bench grinder, such as method of operation, wheel and brush changing, maintenance, assembly, transportation, etc.

The substance of the following instructions shall also be given:

- wear protective glasses;
- do not use damaged or misshapen wheels or brushes;
- use only grinding wheels recommended by the manufacturer which have a marked speed equal to or greater than the speed marked on the nameplate of the tool;
- adjust the spark arrestor frequently so as to compensate for wear of the wheel, keep the distance between the spark arrestor and the wheel as small as possible and in any case not greater than 2 mm;
- instruction for the safe use, handling and storage of abrasive wheels taking into account the requirements of the CEN standard for abrasive products for the type of tool covered by this standard. It is assumed that wheels will not be dressed. If wheel dressing is intended then suitable precautions should be taken;
- if the grinder is intended to be bolted down, an instruction requesting it to be secured to a suitable work surface.
- for combined bench grinders, do always keep the brush assembled on the spindle in order to limit the risk of contact with the rotating spindle;

The following information shall also be given:

- how to connect the dust collection device, if any;
- details of the grinding wheel(s) recommended, the maximum thickness of the wheel and the diameter of the hole in the wheel;
- the maximum wear of the wheel allowed before replacement;
- description of residual risks.
- for bench grinders and combined bench grinders equipped with straight-sided flanges, the recommended values of the thickness T and the diameter of the hole.

NOTE Sketches may be used to illustrate the modes of operation.

8 Protection against electric shock

This clause of part 1 is applicable.

9 Starting

This clause of part 1 is applicable.

10 Input and current

This clause of part 1 is applicable.