INTERNATIONAL STANDARD

IEC 61029-2-4

1993

AMENDMENT 1
2001-05

Amendment 1

Safety of transportable motor-operated electric tools –

Part 2-4: Particular requirements for bench grinders

Amendement 1

Sécurité des machines-outils électriques semi-fixes –

Partie 2-4:
Règles particulières pour les tourets à meuler

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FOREWORD

This amendment 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.

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

FDIS	Report on voting
61F/371/FDIS	61F/386/RVD

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

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2006. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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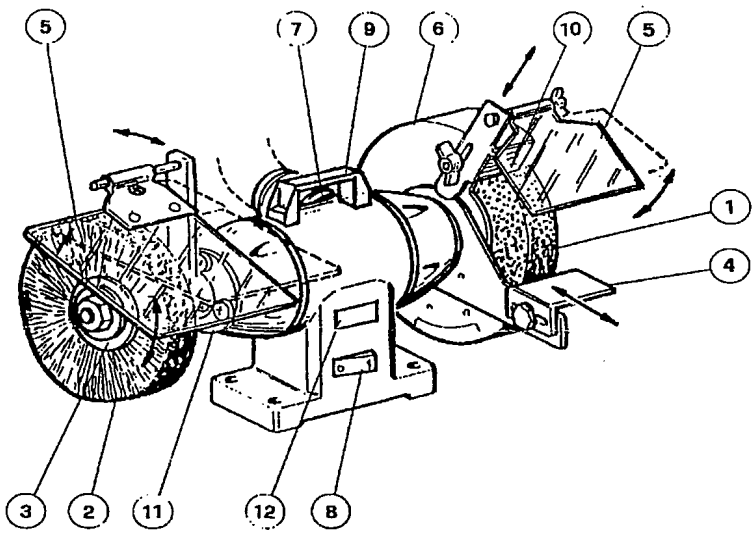
1 Scope

1.1 *Modification:*

Replace the first paragraph by the following:

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.

Add figure 107 as follows:



IEC 490/01

1 - straight-sided grinding wheel
2 - brush
3 - flange
4 - work rest
5 - transparent screen
6 - guard for straight-sided wheel
7 - nozzle for dust
8 - on/off device
9 - handle
10 - spark arrestor
11 - cup shaft guard
12 - marking plate

Figure 107 – Combined bench grinder

NOTE The drawings are given as a guide only.

2 Definitions

Replace definitions 2.103, 2.104 and 2.112 as follows:

2.103
machine spindle
motor spindle of the bench grinder or of the combined bench grinder which supports and transmits the rotation to the grinding wheels or to the grinding wheel and/or the brush

2.104
nozzle for dust collection
device allowing the connection of a bench grinder or a combined bench grinder to a dust collection system

2.112
working speed
linear peripheral speed of the wheel or of the brush while working

Add the following definition:

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 machine spindle, and which is located in a proper workplace and where pieces are held by hand

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7 Marking

7.1 *Addition:*

Add the following items:

– 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.

7.13 *Addition:*

Replace the first paragraph as follows:

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.

Replace the second dash as follows:

– do not use damaged or misshapen wheels or brushes;

Replace the sixth dash as follows:

– 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;

Add, before the note, the following additional dash:

– for combined bench grinders, to always keep the brush assembled on the spindle in order to limit the risk of contact with the rotating spindle.

Page 15

18 Stability and mechanical hazards

18.1 *Addition:*

Replace the first paragraph as follows:

Bench grinders and combined bench grinders shall be equipped with an adequate guarding system, which cannot be removed without the aid of a tool.

18.1.101 Guard

Change the heading of this subclause as follows:

18.1.101 Guard for wheel

Replace the first paragraph as follows:

Bench grinders and combined bench grinders shall be equipped with guards which leave uncovered only a portion of the wheel as indicated in figure 102. Guards shall be designed to have mechanical resistance to accidental breaking of the wheels.

Page 23

18.1.101.3 Spark arrestor

Replace the first paragraph as follows:

Bench grinders and combined bench grinders equipped with straight-sided wheels shall have a spark arrestor to limit the ejection of sparks and pieces of wheel from the wheel guard. Its aim is also to improve the collection of dust.

18.1.101.4 Work rest

Replace the first paragraph as follows:

Bench grinders and combined bench grinders shall be equipped with work rests. This requirement does not apply to the brush side of the combined bench grinder.

Replace the fourth paragraph as follows:

When the bench grinder and/or the grinder side of the combined bench grinder is fitted with an inclinable work rest, the inclination shall only be possible downwards and the tilting upwards of the work rest shall be made impossible (figure 105).

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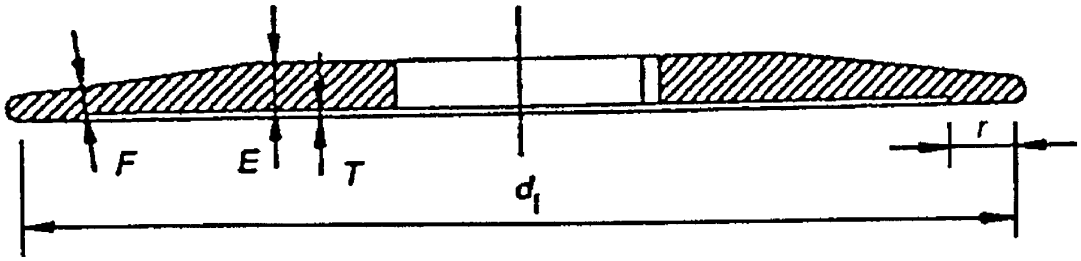
18.1.102.1 Flange

Add a new subclause and incorporate in it the existing text of 18.1.102.1, as follows:

18.1.102.1.1 Flange for wheel

Table 101 gives minimal dimensions of flanges made in steel or other material of adequate strength with minimal tensile strength of 430 N/mm^2 or sintered powder metal with minimal tensile strength of 500 Nmm^2 in relation to the diameter of the wheel and for a wheel thickness not exceeding 0,15 times the diameter.

Divide the existing Table 101 – Flange dimensions *into a new Figure 108 and an amended Table 101 as follows:*



IEC 491/01

Dimensions in millimetres

D Wheel nominal diameter

d_f Minimal external diameter of flanges

r Minimal width of contact surface

E Minimal flange thickness on flat surface

F Minimal flange thickness on inclined surface

T Minimal depth of recess

Figure 108 – Flange dimensions for wheel

Table 101 – Flange dimensions for wheel (see Figure 108)

D	d_f	*r*	*E*	*F*	*T*
100	34	6	5	3,2	1,5
125	42	8	6	3,2	1,5
150	52	9	10	5	1,5
200	68[1)]	12[1)]	10[1)]	5[1)]	1,5[1)]

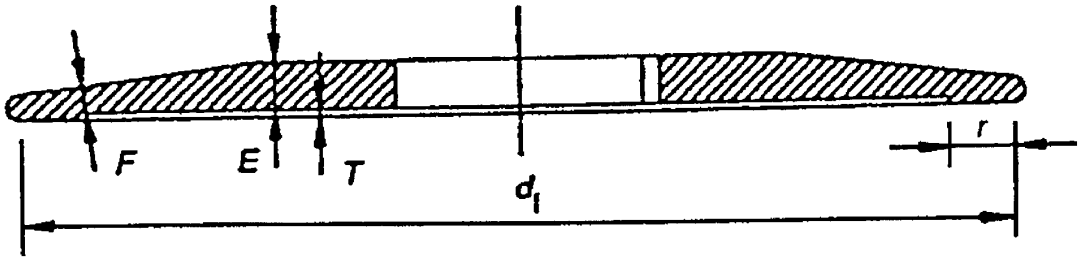
[1)] These values are valid for flanges to be used on wheels with 200 mm nominal diameter and 30 mm thickness.

Cast iron flanges shall not be used.

Add the following new subclause:

18.1.102.1.2 Flange for brush

Table 102 gives minimal dimensions of flanges made in steel or other material of adequate strength with minimal tensile strength of 430 N/mm^2 or sintered powder metal with minimal tensile strength of 500 N/mm^2 in relation to the diameter of the brush.



IEC 491/01

Dimensions in millimetres

D Brush nominal diameter

d_f Minimal external diameter of flanges

r Minimal width of contact surface

E Minimal flange thickness on flat surface

F Minimal flange thickness on inclined surface

T Minimal depth of recess

Figure 109 – Flange dimensions for brush

Table 102 – Flange dimensions for brush (see Figure 109)

D	d_f	*r*	*E*	*F*	*T*
100	34	5	1,5	1,5	1,5
125	42	5	2	2	1,5
150	52	5	2,5	2,5	1,5
200	68	5	2,5	2,5	1,5

Cast iron flanges shall not be used.

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18.1.103 Transparent screens

Add a new subclause and incorporate in it the existing text of 18.1.103 as follows:

18.1.103.1 Transparent screen characteristics

Replace the first three paragraphs as follows:

The bench grinders and combined bench grinders shall be fitted with transparent screens designed to prevent projection of particles towards the eyes and the face of the operator.

The transparent screens shall be adjustable and of such dimensions that in normal positions of grinding and polishing, including in a vertical plane above the wheel or the brush, the operator shall see the working part of the wheel or of the brush only through the screen.

The operation of adjusting the screen shall not modify the adjustment of other parts of the bench grinder or combined bench grinder.

18.1.103.2 Minimal dimension of the transparent part of rectangular or trapezoidal transparent screens

Replace the paragraphs after Figure 106 as follows:

The minimal dimensions of the transparent part of screens for bench grinders equipped with straight-sided cup wheels are identical to those of screens for bench grinders or combined bench grinders equipped with straight-sided wheels. However, for bench grinders and for the grinder side of the combined bench grinders, the thickness of straight-sided wheels shall be replaced by the width of the working part of the straight-sided cup wheel.

For all bench grinders and combined bench grinders, the screens shall be mounted in such a way that the symmetrical axis of the screen coincides with the vertical median plane of the working part of the wheel or the brush (figure 106).

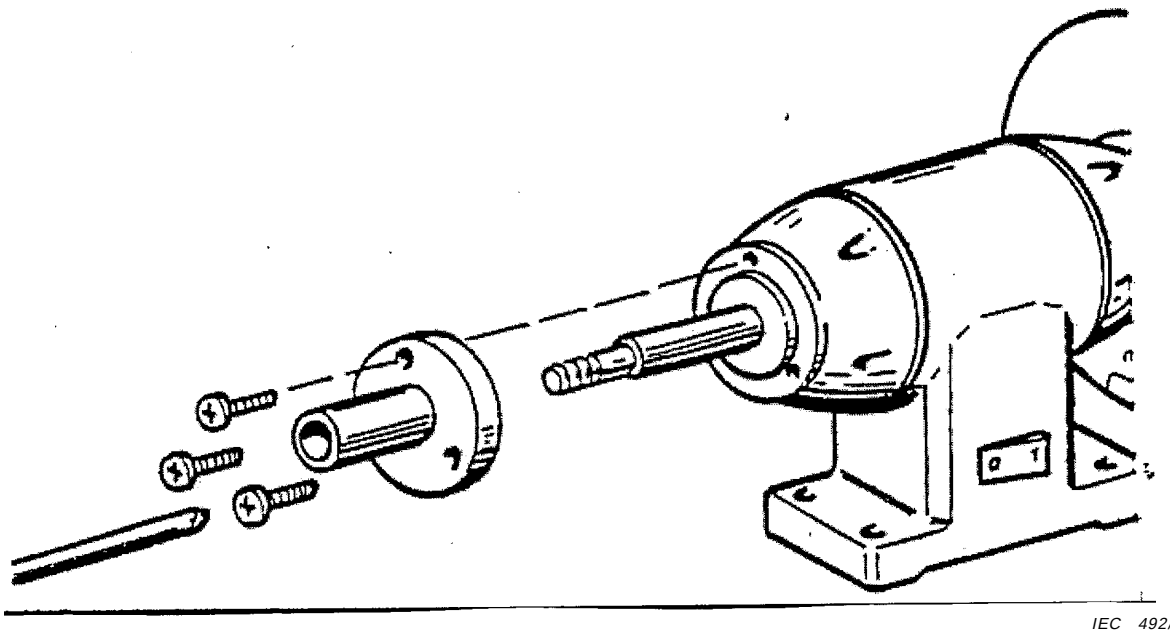
Add the following new subclause

18.1.104 Protection of the free extremity of the rotative shaft in the combined bench grinder

The shaft part on the brush side, when not fitted with a brush, shall be protected in order to avoid accidental contacts.

Compliance is checked by applying the test pin in figure 2 of part 1.

NOTE A possible solution for satisfying this requirement is shown in figure 110.



IEC 492/01

Figure 110

18.2 *Addition:*

Replace the text of the subclause as follows:

Bench grinders and combined bench grinders shall have provisions to be fixed on a support.

Page 29

20 Construction

20.18 *Addition:*

Replace the title and text of the existing subclause 20.18 by the following:

20.18 *Modification:*

Replace the existing test specification by the following:

Compliance is checked by applying a sphere with a diameter of 100 mm ± 1 mm to the switch.

It shall not be possible to start the tool by means of the sphere.

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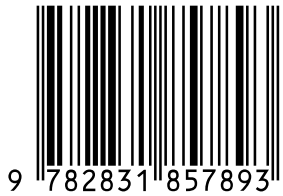

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