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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety – Part 2-9: Particular requirements for hand-held tappers and threaders

Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité – Partie 2-9: Exigences particulières pour les taraudeuses et les fileteuses portatives

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –

Part 2-9: Particular requirements for hand-held tappers and threaders

FOREWORD

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International Standard IEC 62841-2-9 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

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

FDIS	Report on voting
116/199/FDIS	116/212/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, Part 2.

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This Part 2-9 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This Part 2-9 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for hand-held tappers and threaders.

Where a particular subclause of Part 1 is not mentioned in this Part 2-9, that subclause applies as far as reasonable. Where this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

The following print types are used:

– requirements: in roman type;
– *test specifications: in italic type;*
– notes: in small roman type.

The terms defined in Clause 3 are printed in **bold typeface**.

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

A list of all parts of the IEC 62841 series, under the general title: *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety*, can be found on the IEC website.

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.

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 36 months from the date of publication.

The contents of the corrigendum of October 2015 have been included in this copy.

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ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –

Part 2-9: Particular requirements for hand-held tappers and threaders

1 Scope

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

Addition:

This standard applies to hand-held **tappers** and **threaders**.

2 Normative references

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

Addition:

ISO 7-1:1994, *Pipe threads where pressure-tight joints are made on the threads – Part 1: Dimensions, tolerances and designation*

ISO 65:1981, *Carbon steel tubes suitable for screwing in accordance with ISO 7-1*

3 Terms and definitions

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

Addition:

3.101
tapper
tool intended for cutting internal screw threads

3.102
threader
tool intended for cutting external threads

4 General requirements

This clause of Part 1 is applicable.

5 General conditions for the tests

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

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5.17 *Addition:*

*The mass of a **tapper/threader** includes the auxiliary handle, if any. Any support device as illustrated in Figure 101 for a **threader** is not regarded as part of the tool.*

6 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.

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:*

In addition the tool shall have the following marking:

– maximum diameter, in millimetres (for **tappers**) or in inches (for **threaders**), of the thread which can be cut.

NOTE According to the International System of Units, only SI units should be used. Nevertheless, some pipe diameters and threads are still specified in inches internationally.

For **tappers**, the diameter shall refer to a unified ISO thread to be cut into steel having a tensile strength of 390 N/mm^2 and a thickness of twice the thread diameter, unless otherwise indicated on the tool.

For **threaders**, the diameter shall refer to a taper style thread in accordance with ISO 7-1 to be cut on steel tubes in accordance with ISO 65, unless otherwise indicated on the tool.

8.14.1 *Addition:*

For **threaders**, the additional safety instructions as specified in 8.14.1.101 shall be given. This part may be printed separately from the “General Power Tool Safety Warnings”.

8.14.1.101 Threader safety warnings

a) **Always use the support device provided with the tool.** *Loss of control during operation can result in personal injury.*

b) **Keep sleeves and jackets buttoned while operating the tool. Do not reach across the tool or pipe.** *Clothing can be caught by the pipe or the tool resulting in entanglement.*

c) **Only one person must control the work process and tool operation.** *Additional people involved in the process may result in unintended operation and personal injury.*

d) **Keep floors dry and free of slippery materials such as oil.** *Slippery floors invite accidents.*

8.14.2 a) *Addition:*

101) for **threaders**: instructions for mounting and use of the support device.

8.14.2 b) *Addition:*

101) for **threaders**: instructions to always use the support device supplied with the tool.

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102) for **threaders** with multiple gear box settings: information about which gear box setting is to be used for each pipe diameter.

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, except as follows:

Modification:

For **threaders**, the requirements of this clause are replaced by the following:

The **rated input** or **rated current** shall be at least 100 % of the measured input or current applying the torque in Table 101.

Compliance is checked by measuring the power input or current of the tool when stabilized while all circuits which can operate simultaneously are in operation.

*For tools marked with one or more **rated voltages**, the test is made at each of the **rated voltages**. For tools marked with one or more **rated voltage ranges**, the test is made at both the upper and lower limits of the ranges. For tools with multiple gear box settings, the test is made at each specified gear box setting in accordance with 8.14.2 b). The highest value of input or current is applicable.*

12 Heating

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

12.2.1 *Replacement:*

***Tappers** are operated intermittently for 30 cycles or until thermal equilibrium is reached, whichever is achieved first, each cycle comprising a period of continuous operation of 30 s and a rest period of 90 s with the tool switched off, the tool being loaded during the periods of operation 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 last "on" period.*

***Threaders** are operated for 30 s at load followed by 30 s no load and then switched off for a rest period of 60 s. This cycle is continued until thermal equilibrium is reached, or for 30 cycles, whichever is achieved first. The tool is loaded during the periods of operation by means of a brake adjusted to attain the torque specified in Table 101. The brake load may be ramped up to the specified torque over a period of time not to exceed 5 s. This ramp up time is added to the 30 s cycle at load. The temperature rises are measured at the end of the last load period.*

The above test cycle may, at the manufacturer's option, be replaced by continuous operation of the tool until thermal equilibrium is reached.

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NOTE Continuous operation is not typical for these tools and is regarded as a more severe test. Therefore, this is an option for the cycle test in order to simplify the testing.

Table 101 – Load torque

Maximum diameter of thread inch	**Torque** Nm
1	125
1,25	150
1,5	160
2	180

12.5 *Addition:*

*For **threaders**, the temperature-rise limit specified for the external enclosure does not apply to the enclosure of the gear box. However, the above exemption does not apply to handles adjacent to the gear box.*

13 Resistance to heat and fire

This clause of Part 1 is applicable.

14 Moisture resistance

This clause of Part 1 is applicable.

15 Resistance to rusting

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, except as follows:

18.8 *Replacement of Table 4:*

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Table 4 – Required performance levels

Type and purpose of SCF	Minimum performance level (PL)
Power switch – prevent unwanted switch-on for **tappers**	a
Power switch – prevent unwanted switch-on for **threaders**	a
Power switch – provide desired switch-off for **tappers**	b
Power switch – provide desired switch-off for **threaders**	c
Provide desired direction of rotation	Not an **SCF**
Any electronic control to pass the test of 18.3	Not an **SCF**
Any speed limiting device	Not an **SCF**
Prevent exceeding thermal limits as in Clause 18	a

19 Mechanical hazards

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

19.6 This subclause is not applicable.

20 Mechanical strength

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

20.5 This subclause is not applicable.

20.101 The device to support the **threader** shall withstand the torque output generated by the tool while cutting a thread in either direction.

Compliance is checked by the following test:

The tool is set with the largest die head in accordance with 8.1 on to a pipe as specified in 8.1. The point of contact with the support device and tool is determined. The support device is mounted in accordance with 8.14.2 a) so there is an 8 mm minimum clearance between the device and the point of contact. See Figure 102.

A thread is cut until one of the following occurs:

– *the tool stalls;*
– *the thread is destroyed allowing the die head to continue rotating;*
– *the die head stops rotating due to failure of the tool or by means of a mechanical or electrical/electronic device.*

As a result of the test, none of the following shall occur:

– *ejection of parts from the tool or from the die head;*
– *rotation of the support device exceeding 30° or lateral movement exceeding 25 mm;*
– *cracked or broken parts of the support device, however bending is allowed.*

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