IEC 62841-3-12

Edition 1.0 2017-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –
Part 3-12: Particular requirements for transportable threading machines

Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité –
Partie 3-12: Exigences particulières relatives aux machines à fileter portables

IEC 62841-3-12:2017-08(en-fr)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

About the IEC
The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications
The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue
The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub
The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,…). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished
Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org
The world's leading online dictionary of electronic and electrical terms, containing 20 000 terms and definitions in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary
65 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc
If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.

A propos de l'IEC
La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC
Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Catalogue IEC - webstore.iec.ch/catalogue
Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

Recherche de publications IEC - www.iec.ch/searchpub
La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,…). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished
Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

Electropedia - www.electropedia.org
Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient 20 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary
65 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

Service Clients - webstore.iec.ch/csc
Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: csc@iec.ch.

IEC 62841-3-12

Edition 1.0 2017-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety – Part 3-12: Particular requirements for transportable threading machines

Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité – Partie 3-12: Exigences particulières relatives aux machines à fileter portables

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 25.140.20

ISBN 978-2-8322-4753-2

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 3-12: Particular requirements for transportable threading machines

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62841-3-12 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
116/338/FDIS	116/343/RVD

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 3-12 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This Part 3-12 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for transportable threading machines.

Where a particular subclause of Part 1 is not mentioned in this Part 3-12, that subclause applies as far as relevant. 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;
– **terms defined in Clause 3: 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 document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document 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.

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

Part 3-12: Particular requirements for transportable threading machines

1 Scope

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

Addition:

This part of IEC 62841 applies to transportable **threading machines**.

2 Normative references

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

Addition:

IEC 60947-5-1, *Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices*

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

ANSI/ASME B1.20.2M:2006, *Pipe threads, 60 deg., general purpose*

3 Terms and definitions

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

Addition:

3.101
threading machine
tool that is capable of creating an external thread by either rotating the workpiece or the cutting head, by a mechanical process such as cutting or forming

Note 1 to entry: See Figure 101.

3.102
ISO style thread
thread according to ISO 7-1:1994: 55 degree pressure-tight taper pipe threads (R)

Note 1 to entry: ISO type R threads are also known as BSPT style threads.

3.103
NPT style thread
thread according to National Pipe Taper: 60 degree pressure-tight taper pipe threads (NPT) per ANSI/ASME B1.20.2M:2006

4 General requirements

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable.

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:*

– maximum diameter of the thread which can be created. The maximum diameter may be specified in SI units or inches.

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

8.14.1 *Addition:*

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 Threading machine safety warnings

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

b) **Restrict access or barricade the area from bystanders when the workpiece extends beyond the machine to provide a minimum of one metre clearance from the workpiece**. *Restricting access or barricading the work area around the workpiece will reduce the risk of entanglement.*

c) **Do not wear gloves.** *Gloves may be entangled by the rotating pipe or machine parts leading to personal injury.*

d) **Do not use the machine for other purposes such as drilling holes or turning winches.** *Other uses or modifying this machine for other applications may increase the risk of serious injury.*

e) **Secure the machine to a bench or stand. Support long heavy pipe with pipe supports.** *This practice will prevent the machine from tipping.*

f) **While operating the machine, stand on the side where the operator control switch is located.** *Operating the machine from this side eliminates need to reach over the machine.*

g) **Keep hands away from rotating pipe and fittings. Stop the machine before wiping pipe threads or screwing on fittings. Allow the machine to come to a complete stop before touching the pipe.** *This practice will reduce the risk of entanglement in rotating parts.*

h) **Do not use this machine to install or remove fittings.** *This practice could lead to trapping, entanglement and loss of control.*

NOTE Replacing “install or remove” with “make or break” is possible.

i) **Do not operate the machine without all covers properly installed.** *Exposing moving parts increases the probability of entanglement.*

j) **Do not use this machine if the foot switch is broken or missing.** *The foot switch provides safe control of the machine, such as emergency shutoff in case of entanglement.*

8.14.2 b) *Additional items:*

101) Instruction on the proper location of the operator while operating the machine;

102) For **threading machines** with multiple gear box settings: information about which gear box setting is to be used for each thread diameter and style.

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:

Replacement:

The **rated input** or **rated current** shall be at least 100 % of the highest measured input or current after applying a minimum torque as specified in Table 101 for the largest recommended thread size for each speed setting in accordance with 8.1 and 8.14.2 b) 102).

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.*

Table 101 – Load torque

Thread size	Torque Nm	
	ISO style thread	NPT style thread
1"	108	108
1 1/4"	149	149
1 1/2"	163	163
2”	217	217
2 1/2"	217	380
3”	244	542
4”	386	583

12 Heating

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

12.2.1 *Replacement:*

Threading machines *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 highest input or current as determined in Clause 11. The brake load may be ramped up over a period of time not to exceed 5 s. This ramp up time is added to the 30 s cycle at load. Temperatures are measured at the end of the last load period.*

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:*

Table 4 – Required performance levels

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

19 Mechanical hazards

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

19.1 *Replacement of the first paragraph:*

Moving and dangerous parts other than the chuck(s), cutting head or workpiece shall be so positioned or enclosed to provide adequate protection against personal injury.

19.6 This subclause is not applicable.

19.8 This subclause is applicable for **threading machines**, if provided with:

– wheels; or

– a cart with wheels.

19.101 Run-down

The run-down of the tool spindle after switching off the motor shall be limited.

Compliance is checked by the following test, which is performed ten times.

The tool motor is switched on under no-load for a minimum of 30 s, then switched off. For each test, the run-down of the spindle shall not exceed two revolutions.

20 Mechanical strength

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

20.5 This subclause is not applicable.

21 Construction

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

21.17 *Replacement:*

Threading machines shall be fitted with a **power switch** which is not a **momentary power switch**. The actuating member of this switch shall be easily visible and accessible from the operator's position designated in 8.14.2 b) 101).

The machine shall also be fitted with a foot switch which is a **momentary power switch** without a lock-on device.

It shall be necessary that both the **power switch** and the foot switch are in the "on" position in order to operate the machine.

Compliance is checked by inspection.

21.18.2.1 *Addition:*

After voltage recovery, following an interruption of the supply, the tool shall not automatically restart. The foot switch as required in 21.17 is regarded as a **momentary power switch**.

21.18.2.3 *Replacement:*

The foot switch required in 21.17 shall be shielded so that unintentional movement to the “on” position is unlikely and the shield shall have sufficient strength.

Compliance is checked by the test of 20.3.2 and by the following test.

With the foot switch placed on a horizontal surface, it shall not be possible to activate the foot switch with a 12 mm diameter rod held perpendicular to the horizontal surface and applied in a perpendicular motion with a force of 50 N.

21.30 This subclause is not applicable.

22 Internal wiring

This clause of Part 1 is applicable.

23 Components

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

23.1.10 *Addition:*

Alternatively, foot switches, if separately tested and found to comply with IEC 60947-5-1, shall meet the rating and endurance requirements specified in 23.1.10.1.

23.2 *Replacement of the first dash:*

– switches or automatic controls in flexible cords, however the foot switch required in 21.17 and **protective devices** such as **RCDs** may be fitted in flexible cords;

24 Supply connection and external flexible cords

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

24.4 *Addition:*

If rubber insulated cables are used, they shall be polychloroprene or other equivalent synthetic elastomer sheathed cables (code designation 60245 IEC 57 or 60245 IEC 66).

NOTE 101 In the United States of America, the following conditions apply:

Supply cords shall be not lighter than Junior Hard service (SJO) cord in accordance with the National Electrical Code, NFPA 70.

Attachment plugs and cords shall be equal to or greater than the rating of the tool.

NOTE 102 In Canada, the following conditions apply:

Supply cords shall be not lighter than Hard Usage cord (SJO) in accordance with the Canadian Electrical Code, Part 1.

Attachment plugs and cords shall be equal to or greater than the rating of the tool.

24.20 *Addition:*

The cord for the foot switch required by 21.17 is regarded as an **interconnection cord**, except that the test of 24.11 is not applicable.