IEC 61029-2-12

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Safety of transportable motor-operated electric tools –
Part 2-12: Particular requirements for threading machines

Sécurité des machines-outils électriques semi-fixes –
Partie 2-12: Exigences particulières pour les machines à fileter

IEC 61029-2-12:2010

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SAFETY OF TRANSPORTABLE MOTOR-OPERATED ELECTRIC TOOLS –

Part 2-12: Particular requirements for threading machines

FOREWORD

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International Standard IEC 61029-2-12 has been prepared by IEC technical committee 116: Safety of hand-held motor-operated electric tools.

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

FDIS	Report on voting
116/34/FDIS	116/42/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.

This Part 2-12 is to be used in conjunction with the first edition of IEC 61029-1 (1990).

This Part 2-12 supplements or modifies the corresponding clauses in IEC 61029-1, so as to convert it into the IEC Standard: Particular requirements for threading machines.

Where a particular subclause of Part 1 is not mentioned in this Part 2-12, 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 2 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 61029 series, under the general title: *Safety of transportable motor-operated electric tools*, 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- withdrawn,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.

SAFETY OF TRANSPORTABLE MOTOR-OPERATED ELECTRIC TOOLS –

Part 2-12: Particular requirements for threading machines

1 Scope

This clause of Part 1 is applicable.

1.1 *Addition:*

This standard applies to machines for creating external threads that either rotate the work piece or the cutting head.

2 Definitions

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

2.21 *Replacement:*
normal load
load to obtain rated input

2.101
threading machine
tool that is capable of creating an external thread through a mechanical process such as cutting or forming

2.102
BSPT style threads
British Standard Pipe Taper style threads: 55 degree pressure-tight taper pipe threads (R) per ISO 7-1

2.103
NPT style thraeds
National Pipe Taper style threads: 60 degree pressure-tight taper pipe threads (NPT) per ANSI/ASME B1.20.2M

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:*

In addition, the tool shall have the following marking:

– maximum diameter, in millimetres, of thread which can be cut.

The diameter shall refer to a unified ISO thread to be cut on a pipe of steel having a tensile strength of 390 N/mm^2, unless otherwise indicated on the tool.

7.13 *Replacement:*

An instruction manual and safety instructions shall be provided with the tool and packaged in such a way that is noticed by the user when the tool is removed from the packaging. The safety instructions may be separate from the instruction manual. An explanation of the symbols required by this standard shall be provided in either the instruction manual or the safety instructions.

They shall be written in the official language(s) of the country in which the tool is sold. They shall be legible and contrast with the background.

They shall include the name and address of the manufacturer or supplier of branded product.

7.13.101 Safety warnings

The safety warnings specified in 7.13.101.1 and 7.13.101.2, if in English, shall be verbatim and in the exact order as given and in any other official language to be equivalent.

Format of all safety warnings must differentiate, by font, highlighting or similar means, the context of the clauses as illustrated below.

All notes in the safety warnings are not to be printed, they are information for the designer of the manual.

7.13.101.1 General Power Tool Safety Warnings

WARNING Read all safety warnings and all instructions. *Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury*.

Save all warnings and instructions for future reference.

1) **Work area safety**

   a) **Keep work area clean and well lit**. *Cluttered or dark areas invite accidents.*

   b) **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** *Power tools create sparks which may ignite the dust or fumes.*

   c) **Keep children and bystanders away while operating a power tool.** *Distractions can cause you to lose control.*

2) **Electrical safety**

a) **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** *Unmodified plugs and matching outlets will reduce risk of electric shock.*

b) **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** *There is an increased risk of electric shock if your body is earthed or grounded.*

c) **Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the risk of electric shock.*

d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** *Damaged or entangled cords increase the risk of electric shock.*

e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** *Use of a cord suitable for outdoor use reduces the risk of electric shock.*

f) **If operating a power tool in a damp location is unavoidable or there is the likelihood of cutting into the cord, use a residual current device (RCD) protected supply.** *Use of an RCD reduces the risk of electric shock.*

NOTE The term “residual current device (RCD)” may be replaced by the term “ground fault circuit interrupter (GFCI)” or “earth leakage circuit breaker (ELCB)”.

3) **Personal safety**

a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** *A moment of inattention while operating power tools may result in serious personal injury.*

b) **Use personal protective equipment. Always wear eye protection.** *Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*

c) **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** *Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.*

d) **Remove any adjusting key or wrench before turning the power tool on.** *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*

e) **Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the power tool in unexpected situations.*

f) **Dress properly. Do not wear loose clothing or jewellery. Keep your hair and clothing away from moving parts.** *Loose clothes, jewellery or long hair can be caught in moving parts.*

g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** *Use of dust collection can reduce dust-related hazards.*

4) **Power tool use and care**

a) **Do not force the power tool. Use the correct power tool for your application.** *The correct power tool will do the job better and safer at the rate for which it was designed.*

b) **Do not use the power tool if the switch does not turn it on and off.** *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*

c) **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** *Such preventive safety measures reduce the risk of starting the power tool accidentally.*

d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** *Power tools are dangerous in the hands of untrained users.*

e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** *Many accidents are caused by poorly maintained power tools.*

f) **Keep cutting tools sharp and clean.** *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*

g) **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** *Use of the power tool for operations different from those intended could result in a hazardous situation.*

h) **Keep handles dry, clean and free from oil and grease.** *Slippery handles do not allow for safe handling and control of the tool in unexpected situations.*

5) **Service**

a) **Have your power tool serviced by a qualified repair person using only identical replacement parts.** *This will ensure that the safety of the power tool is maintained.*

7.13.101.2 Threading machine safety warnings

Work area safety

- **Keep floor dry and free of slippery materials such as oil.** *Slippery floors invite accidents.*
- **Restrict access or barricade the area when work piece extends beyond machine to provide a minimum of one metre clearance from the work piece**. *Restricting access or barricading the work area around the work piece will reduce the risk of entanglement.*

Electrical safety

- **Keep all electric connections dry and off the ground. Do not touch plugs or tool with wet hands.** *These precautions will reduce the risk of electrical shock.*

Personal safety

- **Do not wear gloves or loose clothing when operating machine. Keep sleeves and jackets buttoned. Do not reach across the machine or pipe.** *Clothing can be caught by the pipe or machine resulting in entanglement.*

Machine safety

- **Follow instructions on proper use of this machine. Do not use for other purposes such as drilling holes or turning winches.** *Other uses or modifying this power drive for other applications may increase the risk of serious injury.*
- **Secure machine to bench or stand. Support long heavy pipe with pipe supports.** *This practice will prevent machine tipping.*
- **While operating the machine, stand on the side where the REVERSE/OFF/FORWARD or FORWARD/REVERSE switch is located.** *Operating the machine from this side eliminates need to reach over the machine.*
- **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 chance of entanglement in rotating parts.*
- **Do not use this machine to install or remove fittings, it is not the intended use of the machine.** *This practice could lead to trapping, entanglement and loss of control.*

NOTE The terms "install" or "remove" may be substituted by regional terms.

- **Keep covers in place. Do not operate the machine with covers removed.** *Exposing moving parts increases the probability of entanglement.*

Footswitch safety

- **Do not use this machine if the footswitch is broken or missing.** *Footswitch is a safety device that provides better control by letting you shut off the motor in various emergency situations by removing your foot from the switch. For example: if clothing should become caught in the machine, the high torque will continue pulling you into the machine. The clothing itself can bind around your arm or other body parts with enough force to crush or break bones.*

7.13.102 If the safety instructions are separate from the instruction manual, then the following warnings shall be included in the instruction manual. These warnings, if in English, shall be verbatim and in any other official language to be equivalent.

> ⚠ **WARNING Read all safety warnings and all instructions.** *Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury*.
>
> **Save all warnings and instructions for future reference.**

The instruction manual shall be provided with the following information, if appropriate.

a) Instructions for putting into use
   1) Setting-up or fixing power tool in a stable position as appropriate for power tools which can be mounted on a support or fixed to the floor
   2) Assembly
   3) Connection to power supply, cabling, fusing, socket type and earthing requirements
   4) Tools adjustable to different rated voltages shall include instructions, illustrations, or both for changing the voltage. The terminal identification shall be provided if the motor connection has to be altered to operate at a voltage other than that for which it was connected when shipped from the factory.
   5) Illustrated description of functions
   6) Limitations on ambient conditions
   7) List of contents
   8) Fitting and adjusting of guards
   9) Information about disassembly and reassembly if applicable for transportation and/or use

b) Operating instructions
   1) Setting and testing
   2) Tool changing
   3) Clamping of work
   4) Limits on size of workpiece
   5) General instructions for use
   6) Identification of handles and grasping surfaces
   7) For tools with electronic speed or load regulators which do not immediately restart the tool after a stalling: a warning that the tool will restart automatically if stalled.
   8) Instruction on lifting and transportation

c) Maintenance and servicing instructions
   1) User maintenance, such as cleaning, sharpening, lubricating, servicing and/or replacing of parts
   2) Servicing by manufacturer or agent; list of addresses

3) List of user-replaceable parts and instruction how to replace them
4) Special tools which may be required
5) For power tools with type X attachment, where a specially prepared cord is needed to replace the cord: if the supply cord of this power tool is damaged, it must be replaced by a specially prepared cord available through the service organization.
6) For power tools with type Y attachment: if the replacement of the supply cord is necessary, this has to be done by the manufacturer or his agent in order to avoid a safety hazard.
7) For power tools with type Z attachment: the supply cord of this power tool cannot be replaced, and the power tool shall be scrapped.

d) For tools with a liquid system, the substance of the following, as appropriate:
   1) Instructions for
      – the connection to the liquid supply;
      – the use of the liquid and the use of attachments to comply with 14.4 in order to avoid affection of the tool by liquid;
      – the inspection of hoses and other critical parts which could deteriorate;
      – the maximum permitted pressure of the liquid supply
   2) For tools provided with an RCD
      – warning and instruction never to use the tool without the RCD provided with the tool;
      – warning and instruction always to test the correct operation of the RCD before starting work, unless the RCD is of a self-checking type
   3) For tools for use in combination with an isolating transformer: warning and instruction never to use the tool without the transformer delivered with the tool or of the type as specified in these instructions
   4) Warning and instruction that replacement of the plug or the supply cord shall always be carried out by the manufacturer of the tool or his service organization
   5) Warning and instruction to keep liquid clear off the parts of the tool and away from persons in the working area

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.

11 Heating

This clause of Part 1 is applicable except as follows:

11.4 *Addition:*

For tools for continuous operation, the tool is operated continuously through the threading cycle for one hour or until temperature stabilization occurs.

Threads shall be made on both ends of short pipe sections without the cut-off or reaming operations being performed.

The machine shall be tested by cutting either BSPT style threads on ISO 65 black iron pipe or NPT style threads on ASTM A-53 black iron pipe. Use the allowed speed and thread size combination that produces the maximum load.

This process may be automated using a dynamometer capable of duplicating the threading load cycle.

12 Leakage current

This clause of Part 1 is applicable.

13 Radio and television interference suppression

This clause of Part 1 is applicable.

14 Protection against ingress of foreign bodies and moisture resistance

This clause of Part 1 is applicable.

15 Insulation resistance and electric strength

This clause of Part 1 is applicable.

16 Endurance

This clause of Part 1 is applicable.

17 Abnormal operation

This clause of Part 1 is applicable.

18 Stability and mechanical hazards

This clause of Part 1 is applicable.

19 Mechanical strength

This clause of Part 1 is applicable

20 Construction

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

20.17 *Addition:*