

Clause / prescribed	Observed
<p><b>Remark:</b> This report is based on IEC 62841-2-9:2015. This report has to be read in conjunction with the test report of IEC 62841-1:2014 having the reference number 6000386.50A</p>	
<p><b>5 General conditions for the tests</b> This clause of Part 1 is applicable, except as follows: <b>5.17 Addition:</b> <i>The mass of a <b>tapper/threader</b> includes the auxiliary handle, if any. Any support device as illustrated in Figure 101 for a <b>threader</b> is not regarded as part of the tool.</i></p>	P
<p><b>6 Radiation, toxicity and similar hazards</b> This clause of Part 1 is applicable.</p>	P
<p><b>7 Classification</b> This clause of Part 1 is applicable.</p>	P
<p><b>8 Marking and instructions</b> This clause of Part 1 is applicable, except as follows:</p>	P
<p><b>8.1 Addition:</b> In addition the tool shall have the following marking: – maximum diameter, in millimetres (for <b>tappers</b>) or in inches (for <b>threaders</b>), 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 <b>tappers</b>, the diameter shall refer to a unified ISO thread to be cut into steel having a tensile strength of 390 N/mm<sup>2</sup> and a thickness of twice the thread diameter, unless otherwise indicated on the tool. For <b>threaders</b>, 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.</p>	P      N/A
<p><b>8.14.1 Addition:</b> For <b>threaders</b>, 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”.</p>	N/A
<p><b>8.14.1.101 Threader safety warnings</b> a) <b>Always use the support device provided with the tool. Loss of control during operation can result in personal injury.</b> b) <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.</b> c) <b>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.</b> d) <b>Keep floors dry and free of slippery materials such as oil. Slippery floors invite accidents.</b></p>	N/A N/A N/A N/A
<p><b>8.14.2 a) Addition:</b> 101) for <b>threaders</b>: instructions for mounting and use of the support device.</p>	N/A
<p><b>8.14.2 b) Addition:</b> 101) for <b>threaders</b>: instructions to always use the support device supplied with the tool; 102) for <b>threaders</b> with multiple gear box settings: information about which gear box setting is to be used for each pipe diameter.</p>	N/A N/A

Clause / prescribed	Observed										
<p><b>9 Protection against access to live parts</b> This clause of Part 1 is applicable.</p>	P										
<p><b>10 Starting</b> This clause of Part 1 is applicable.</p>	P										
<p><b>11 Input and current</b> This clause of Part 1 is applicable, except as follows: <i>Modification:</i> For <b>threaders</b>, the requirements of this clause are replaced by the following: The <b>rated input</b> or <b>rated current</b> shall be at least 100 % of the measured input or current applying the torque in Table 101. <i>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.</i></p> <p><i>For tools marked with one or more <b>rated voltages</b>, the test is made at each of the <b>rated voltages</b>. For tools marked with one or more <b>rated voltage ranges</b>, 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.</i></p>	N/A										
<p><b>12 Heating</b> This clause of Part 1 is applicable, except as follows:</p> <p><b>12.2.1 Replacement:</b> <b>Tappers</b> 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 <b>rated input</b> or <b>rated current</b>. The temperature rises are measured at the end of the last “on” period.</p> <p><b>Threaders</b> 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. <i>The above test cycle may, at the manufacturer’s option, be replaced by continuous operation of the tool until thermal equilibrium is reached.</i></p> <p>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.</p>	P										
<p style="text-align: center;"><b>Table 101 – Load torque</b></p> <table border="1" data-bbox="165 1827 1214 2116"> <thead> <tr> <th data-bbox="165 1827 691 1921">Maximum diameter of thread inch</th> <th data-bbox="691 1827 1214 1921">Torque Nm</th> </tr> </thead> <tbody> <tr> <td data-bbox="165 1921 691 1973">1</td> <td data-bbox="691 1921 1214 1973">125</td> </tr> <tr> <td data-bbox="165 1973 691 2024">1,25</td> <td data-bbox="691 1973 1214 2024">150</td> </tr> <tr> <td data-bbox="165 2024 691 2076">1,5</td> <td data-bbox="691 2024 1214 2076">160</td> </tr> <tr> <td data-bbox="165 2076 691 2116">2</td> <td data-bbox="691 2076 1214 2116">180</td> </tr> </tbody> </table>	Maximum diameter of thread inch	Torque Nm	1	125	1,25	150	1,5	160	2	180	P/ until steady
Maximum diameter of thread inch	Torque Nm										
1	125										
1,25	150										
1,5	160										
2	180										
<p><i>The above test cycle may, at the manufacturer’s option, be replaced by continuous operation of the tool until thermal equilibrium is reached.</i></p>	N/A										

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<p><b>12.5 Addition:</b> For <b>threaders</b>, 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.</p>	N/A																		
<p><b>13 Resistance to heat and fire</b> This clause of Part 1 is applicable.</p>	P																		
<p><b>14 Moisture resistance</b> This clause of Part 1 is applicable.</p>	P																		
<p><b>15 Resistance to rusting</b> This clause of Part 1 is applicable.</p>	P																		
<p><b>16 Overload protection of transformers and associated circuits</b> This clause of Part 1 is applicable.</p>	N/A																		
<p><b>17 Endurance</b> This clause of Part 1 is applicable.</p>	P																		
<p><b>18 Abnormal operation</b> This clause of Part 1 is applicable, except as follows:</p>	N/A																		
<p><b>18.8 Replacement of Table 4:</b></p> <p style="text-align: center;"><b>Table 4 – Required performance levels</b></p> <table border="1" data-bbox="164 1211 1278 1576"> <thead> <tr> <th>Type and purpose of SCF</th> <th>Minimum performance level (PL)</th> </tr> </thead> <tbody> <tr> <td>Power switch – prevent unwanted switch-on for tappers</td> <td>a</td> </tr> <tr> <td>Power switch – prevent unwanted switch-on for threaders</td> <td>a</td> </tr> <tr> <td>Power switch – provide desired switch-off for tappers</td> <td>b</td> </tr> <tr> <td>Power switch – provide desired switch-off for threaders</td> <td>c</td> </tr> <tr> <td>Provide desired direction of rotation</td> <td>Not an SCF</td> </tr> <tr> <td>Any electronic control to pass the test of 18.3</td> <td>Not an SCF</td> </tr> <tr> <td>Any speed limiting device</td> <td>Not an SCF</td> </tr> <tr> <td>Prevent exceeding thermal limits as in Clause 18</td> <td>a</td> </tr> </tbody> </table>	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	
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																		
<p><b>Mechanical strength</b> This clause of Part 1 is applicable, except as follows:</p>																			
<p><b>20.5</b> This subclause is not applicable.</p>	N/A																		
<p><b>20.101</b> The device to support the <b>threader</b> shall withstand the torque output generated by the tool while cutting a thread in either direction. <i>Compliance is checked by the following test:</i> <i>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.</i></p>	N/A																		
<p><i>A thread is cut until one of the following occurs:</i></p> <ul style="list-style-type: none"> <li>– the tool stalls;</li> <li>– the thread is destroyed allowing the die head to continue rotating;</li> <li>– the die head stops rotating due to failure of the tool or by means of a mechanical or</li> </ul>	N/A																		

Clause / prescribed	Observed
<p><i>electrical/electronic device.</i>  <i>As a result of the test, none of the following shall occur:</i>                      – <i>ejection of parts from the tool or from the die head;</i>                      – <i>rotation of the support device exceeding 30° or lateral movement exceeding 25 mm;</i>                      – <i>cracked or broken parts of the support device, however bending is allowed.</i></p>	<p>N/A                      N/A                      N/A</p>
<p><b>21 Construction</b>                      This clause of Part 1 is applicable, except as follows:</p>	<p>P</p>
<p><b>21.18.1.1 Addition:</b>  <b>Threaders</b> are regarded as tools with a risk associated with continued locked-on operation.</p>	<p>N/A</p>
<p><b>21.32</b> This subclause is not applicable.</p>	<p>P</p>
<p><b>21.101 Threaders</b> shall be supplied with a device to support the tool while cutting a thread. Figure 101 shows an example of a <b>threader</b> with a support device.  <i>Compliance is checked by inspection.</i></p>	<p>N/A</p>
<p><b>22 Internal wiring</b>                      This clause of Part 1 is applicable.</p>	<p>N/A</p>
<p><b>23 Components</b>                      This clause of Part 1 is applicable, except as follows:</p>	<p>P</p>
<p><b>23.1.10.2 Modification:</b>  <b>Power switches</b> for <b>threaders</b> are tested for 10 000 cycles.</p>	<p>N/A</p>
<p><b>24 Supply connection and external flexible cords</b>                      This clause of Part 1 is applicable, except as follows:</p>	<p>P</p>
<p><b>24.4 Addition:</b>                      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).</p>	<p>N/A</p>
<p><b>25 Terminals for external conductors</b>                      This clause of Part 1 is applicable.</p>	<p>P</p>
<p><b>26 Provision for earthing</b>                      This clause of Part 1 is applicable.</p>	<p>N/A</p>
<p><b>27 Screws and connections</b>                      This clause of Part 1 is applicable.</p>	<p>P</p>
<p><b>28 Creepage distances, clearances and distances through insulation</b>                      This clause of Part 1 is applicable.</p>	<p>P</p>

Clause / prescribed	Observed
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**Annexes**

The annexes of Part 1 are applicable except as follows.

**Annex I**

(informative)

**Measurement of noise and vibration emissions**

NOTE In Europe (EN 62841-2-9), Annex I is normative.

**I.2 Noise test code (grade 2)**

This clause of Part 1 is applicable except as follows:

**I.2.4 Installation and mounting conditions of the power tools during noise tests**

*Addition:*

**Tappers** and **threaders** are suspended. The main axis of the tool shall be horizontal.

**I.2.5 Operating conditions**

*Addition:*

**Tappers** and **threaders** are tested at no-load.

**I.3 Vibration**

This clause of Part 1 is applicable except as follows:

**I.3.3.2 Location of measurement**

*Addition:*

Figure I.101 shows the positions for **tappers**. Figure I.102 shows the positions for **threaders**.

**I.3.5.3 Operating conditions**

*Addition:*

**Tappers** and **threaders** are tested observing the conditions shown in Table I.101.

**Table I.101 – Operating conditions for tappers and threaders**

<b>Orientation</b>	<b>Tappers and threaders</b> are tested at no-load. The <b>tapper</b> is held vertically during the test. The <b>threader</b> is held horizontally during the test.
<b>Tool bit</b>	Tool bit of medium length and size.
<b>Grip force</b>	Hold the machine with normal gripping force, avoiding excessive gripping force.
<b>Test cycle</b>	One test cycle is given when the tool is switched on for no-load at maximum speed for more than 10 s and then switched off again. The measurement is conducted during 10 s within this period.

NOTE 1 As it is difficult to measure load applications of **tappers** and **threaders** in laboratories and results have shown that the load has no influence on the vibration results, no-load has been chosen as operating condition.

NOTE 2 For **threaders**, the handle adjacent to the gear box is needed to achieve a horizontal position, however it is not used during actual operation.

**I.3.6.2 Declaration of the vibration total value**

*Addition:*

The vibration total value  $a_h$  of the handle with the highest emission and the uncertainty  $K$  shall be declared.

P  
P  
P  
P  
P  
P  
P

Clause / prescribed	Observed
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**Annex K**  
(normative)  
**Battery tools and battery packs**

**K.1 Scope**

*Addition:*

All clauses of this Part 2-9 apply unless otherwise specified in this annex.

**K.11 Input and current**

This clause is not applicable.

**K.12.2.1** This subclause is not applicable.

**K.18 Abnormal operation**

This clause is applicable except as follows:

**K.18.8** *Replacement of Table 4:*

**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	a
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

**Bibliography**

The bibliography of Part 1 is applicable.

N/A

P

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