INTERNATIONAL STANDARD

ISO 28927-8

First edition
2009-12-15

AMENDMENT 1
2015-12-15

Hand-held portable power tools — Test methods for evaluation of vibration emission —

Part 8: Saws, polishing and filing machines with reciprocating action and small saws with oscillating or rotating action

AMENDMENT 1: Polishing machines, modified feed forces

Machines à moteur portatives — Méthodes d'essai pour l'évaluation de l'émission de vibrations —

Partie 8: Scies, polisseuses et limes alternatives, et petites scies oscillantes ou circulaires

AMENDEMENT 1: Polisseuses, forces d'avance modifiées

Reference number
ISO 28927-8:2009/Amd.1:2015(E)

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

ISO 28927-8:2009/Amd 1 was prepared by Technical Committee ISO/TC 118, *Compressors and pneumatic tools, machines and equipment*, Subcommittee SC 3, *Pneumatic tools and machines*.

Hand-held portable power tools — Test methods for evaluation of vibration emission —

Part 8: Saws, polishing and filing machines with reciprocating action and small saws with oscillating or rotating action

AMENDMENT 1: Polishing machines, modified feed forces

3 Terms, definitions and symbols

Page 2, definition 3.1.5

Change to

"machine with a rotary or reciprocation motor…"

5 Description of the family of machines

Page 3, Clause 5, second paragraph

Replace with

Figures 1 to 12 show examples of typical saws, files and polishing machines covered by this part of ISO 29827.

Page 3, Figure 1

Add an arrow in the figure

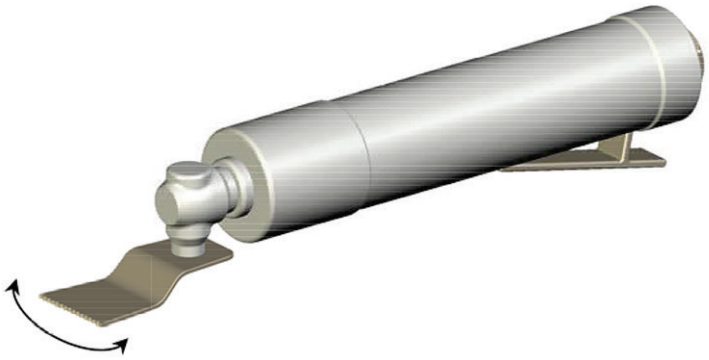


Figure 1 — Straight oscillating saw

Page 5, Figure 7

Add an arrow in the Figure and replace the Figure text with

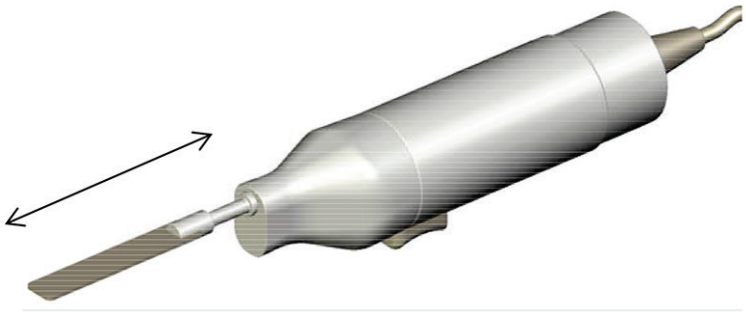


Figure 7 — Straight polishing/filing machine with reciprocating action

Page 5, Figure 8

Add a new Figure 8:

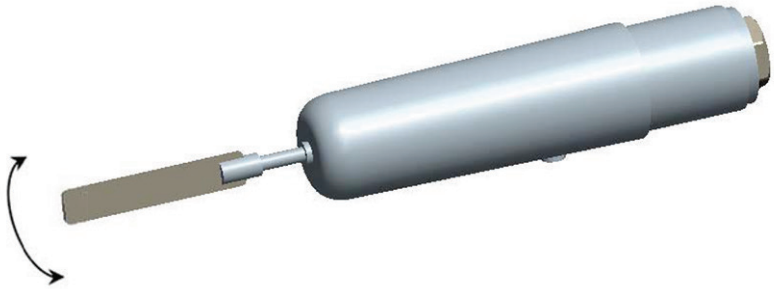


Figure 8 — Straight polishing/filing machine with transverse action

Page 5 and 6

Replace Figure 8 and 9 with the following four Figures and Figure texts:

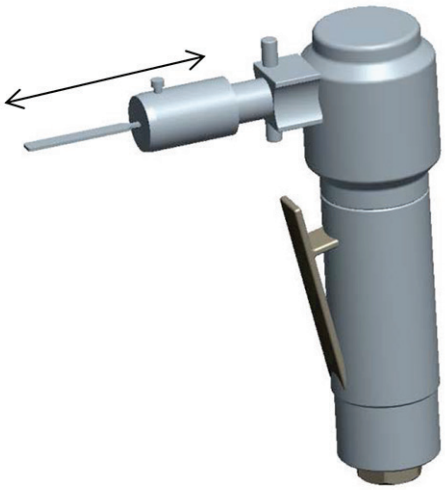


Figure 9 — Angle polishing/filing machine with reciprocating action — Designed for single hand held operation

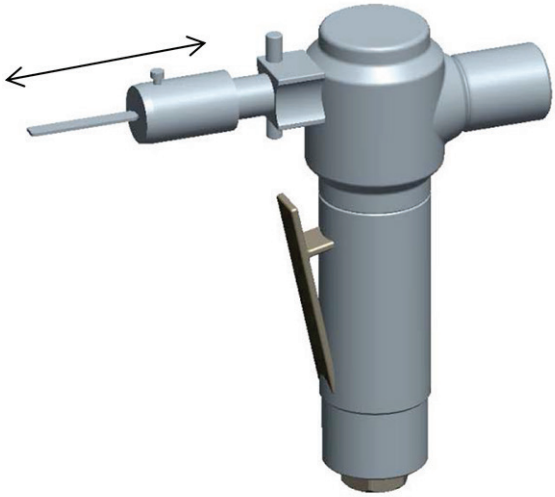


Figure 10 — Angle polishing/filing machine with reciprocating action — Designed for single hand held operation — Alternative design

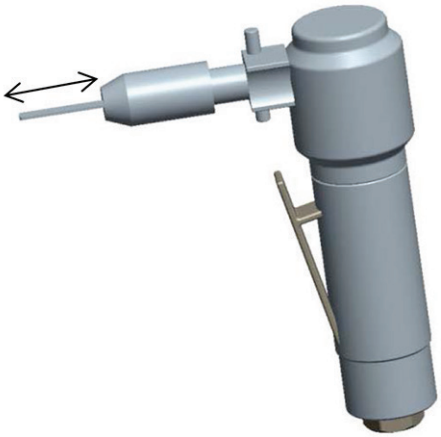


Figure 11 — Angle reciprocating polishing/filing machine with tool holder without moving parts — Designed for two handed operation

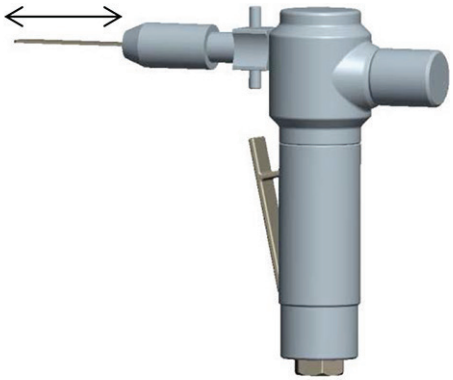


Figure 12 — Angle reciprocating polishing/filing with tool holder without moving parts — Designed for two handed operation — Alternative design

Page 6, Clause 6.1, Paragraph 1

Renumber figure numbers to “Figures 13 to 24”

Page 6, Clause 6.2

Add a new paragraph after paragraph 2:

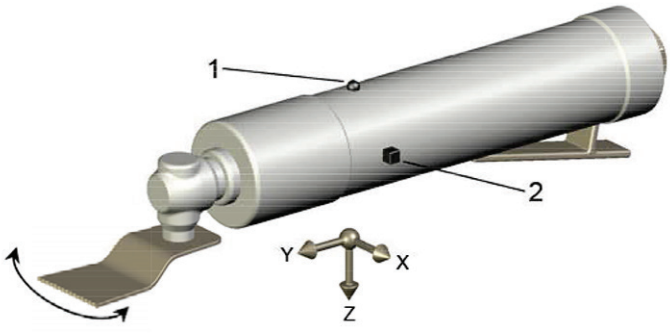
“Polishing/filing machines can be used with a tool holder without moving parts, where the operator can use one hand for guiding the tool. For machines intended to be used with both hands the vibrations shall be measured at both positions.”

Page 6, Clause 6.2, paragraph 5

Renumber figure numbers to “Figures 13 to 24”

Page 7, Figure 10

Add an arrow in the figure and renumber to Figure 13



Key

1 prescribed location

2 secondary location

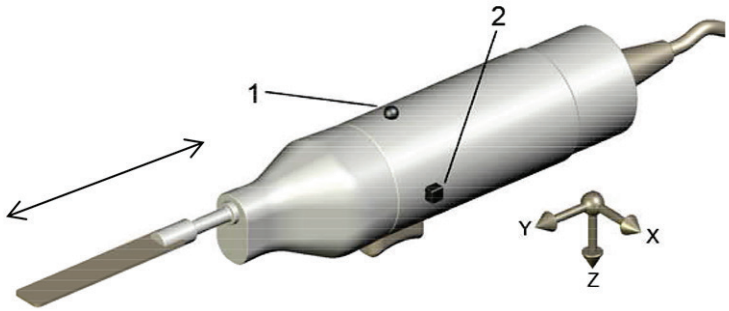
Figure 13 — Measurement locations — Straight oscillating saw

Page 7 to 9, Figure 11 to 15

Renumber to Figure 14 to Figure 18

Page 10, Figure 16

Add an arrow in Figure and renumber to Figure 19 and change the Figure text.



Key

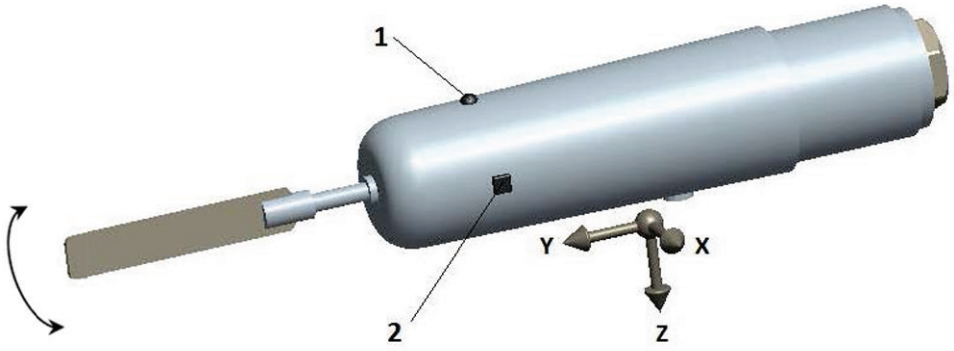
1 prescribed location

2 secondary location

Figure 19 — Measurement locations — Straight polishing/filing machine with reciprocating action

Page 10, Add new Figure

Add a new Figure 20



Key

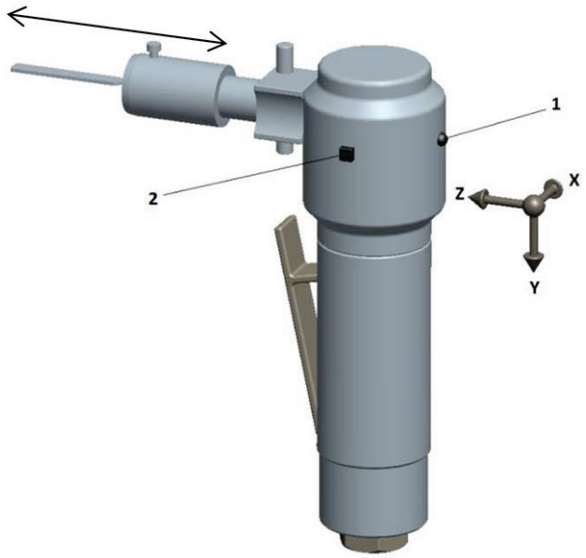
1 prescribed location

2 secondary location

Figure 20 — Measurement locations — Straight polishing/filing machine with transverse action

Page 10 to 11, Figure 17 to 18

Replace Figure 17 and 18 with the following four Figures and Figure texts and renumber them from Figure 21 -24:

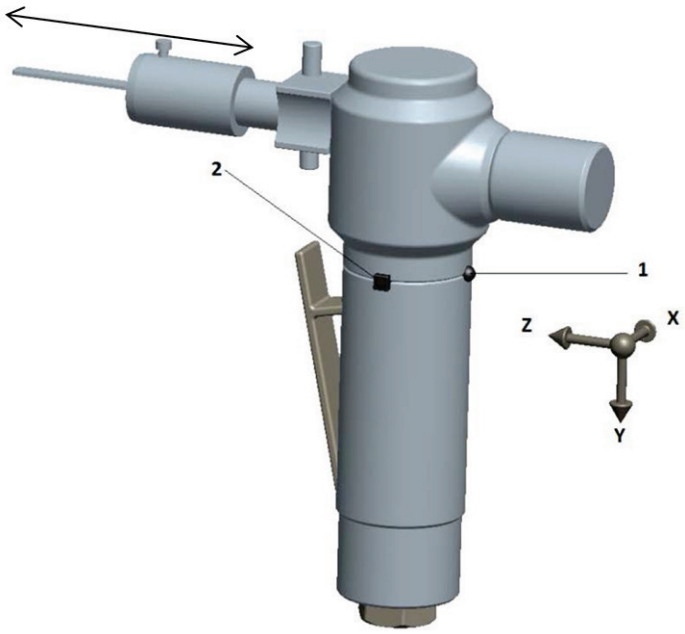


Key

1 prescribed location

2 secondary location

Figure 21 — Measurement locations — Angle polishing/filing machine with reciprocating action —Designed for single hand held operation

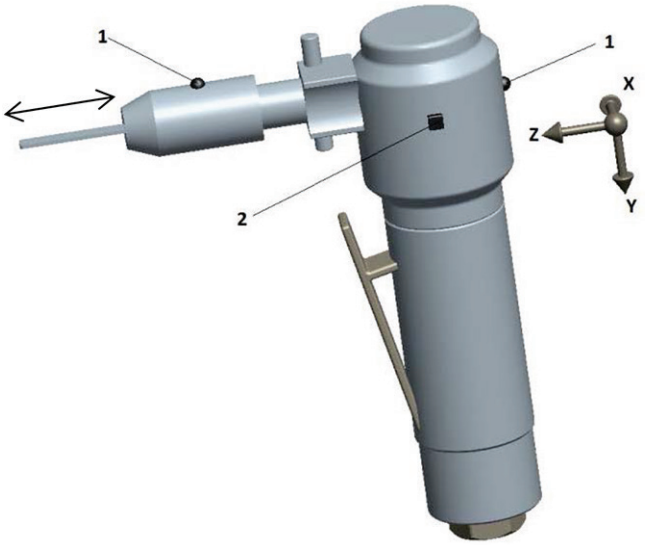


Key

1 prescribed location

2 secondary location

Figure 22 — Measurement locations — Angle polishing/filing machine with reciprocating action - Designed for single hand held operation — Alternative design

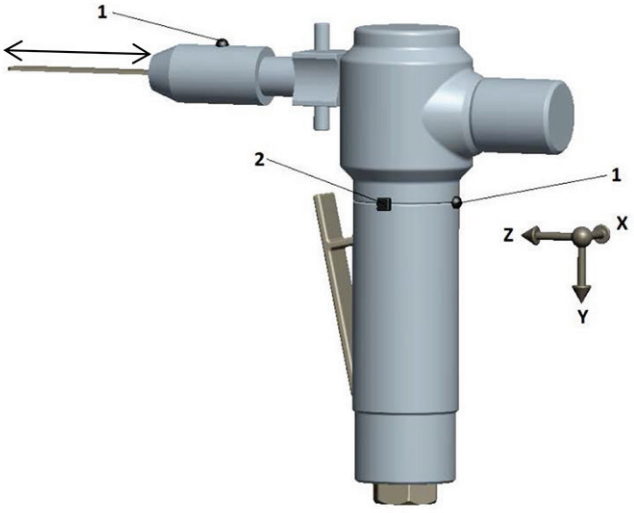


Key

1 prescribed location

2 secondary location

Figure 23 — Measurement locations — Angle reciprocating polishing/filing machine with tool holder without moving parts — Designed for two handed operation



Key

1 prescribed location

2 secondary location

Figure 24 — – Measurement locations — Angle reciprocating polishing/filing with tool holder without moving parts — Designed for two handed operation — Alternative design

Page 14, 8.4.2.1 a), first paragraph

Change

"38 mm thick…" to "32 mm thick…"

Add the following last in the paragraph

"Two boards may be stacked and clamped together to achieve the minimum required thickness"

Page 14, 8.4.2.1 a), second paragraph

Delete the last sentence "Methods that can be used…"

Page 14, 8.4.2.1 a), third paragraph

Replace with

"The guide plate shall be maintained in contact with the work piece during the cut by applying a force just great enough to ensure this, but the downward force applied to the tool in addition to its weight shall not exceed 100 N."

The feed force and the downward force shall be determined e.g. by means of a scale and shall be recorded."

Page 14, 8.4.2.1 b), first paragraph

Change

"38 mm thick…" to "32 mm thick…"

Add the following last in the paragraph

"Two boards may be stacked and clamped together to achieve the minimum required thickness"

Page 14, 8.4.2.1 b), second paragraph

Delete the last sentence "The feed force shall be determined…"

Page 14, 8.4.2.1 b), third paragraph

Replace with

"The guide plate shall be maintained in contact with the work piece during the cut by applying a force just great enough to ensure this, but the downward force applied to the tool in addition to its weight shall not exceed 100 N."

Page 15, 8.4.2.1 b), last paragraph

Delete the paragraph "In general, stable operation…"

Page 15, 8.4.2.2, heading

Replace the heading with "Jig saws and circular saws cutting sheet metal"

Page 15, 8.4.2.2, first paragraph

Replace "mild steel" with "hardened steel ≈60 HRC"

Page 15, 8.4.2.2, first paragraph

Replace the value "300 mm" with the value "600 mm"

Page 15, 8.4.2.2, paragraph 3 and 4

Replace with

"The horizontal feed force (force in direction of the cut) applied to the tool shall be 35 N ± 5 N. Excessive gripping force shall be avoided.

The guide plate shall be maintained in contact with the work piece during the cut by applying a force just great enough to ensure this, but the downward force applied to the tool in addition to its weight shall not exceed 100 N".

Page 15, 8.4.2.2 paragraph 6

Move paragraph 6 to the end of clause 8.4.2.2. Add "For Jig saws:" before the "The pendulum system…"

Page 15, 8.4.2.2, paragraph 8

Delete "In general, stable operation…"

Page 15, 8.4.2.3, first paragraph

Change to

"Cut a horizontal beam of construction wood, such as fir, having a cross section of 100 mm × 100 mm and a minimum length of 500 mm. If the cross-section dimension 100 mm × 100 mm is not commercially available, use a wood beam with at least 100 mm × 100 mm cross section."

Page 15, 8.4.2.3, paragraph 6 and 7

Replace with

"The vertical feed force (force in direction of the cut) applied to the tool in addition to its weight shall be 40 N ± 5 N. Excessive gripping force shall be avoided.

The guide plate shall be maintained in contact with the work piece during the cut by applying a force just great enough to ensure this, but the downward force applied to the tool in addition to its weight shall not exceed 100 N."

Page 16, Clause 8.4.2.4

Replace the clause with

"**8.4.2.4 Reciprocating and transverse polishing/filing machines**

The work piece shall be a mild steel plate mounted horizontally on a stable foundation. The dimensions of the steel plate shall be at least 100 mm × 100 mm × 25 mm or with another dimension with at least a total weight of 2 kg.

The surface of the plate to which the machine is to be applied shall have a finish, Ra, less than or equal to 8,0 μm.

The mounted work piece shall have no resonances within the frequency range for the hand–arm vibration that could influence the test results.

The feed force used shall be 7 N ± 5 N.

Tools of good condition shall be used (polishing tools and/or files) as specified for polishing or filing mild steel.

The duration of measurement time shall be at least 8 s.

If the inserted tool is in contact with the operator's hand in intended use, it is not usually practicable to measure the vibration. However, it is likely that the vibration at this hand position will be much greater than that measured on the machine. In such cases, a vibration emission value of "greater than 30 m/s^2" should be declared and measurement is not required.

a) **Reciprocating polishing/filing machines**

Tests shall be made with maximum recommended total weight of inserted tool (tool + tool holder if not integrated in the machine). If adjustable speed and/or stroke length, tests shall be made at maximum recommended settings and at maximum recommended total weight of the tool. All used data should be reported.

b) **Transverse polishing/filing machines**

Tests shall be made with maximum recommended total weight of inserted tool (tool + tool holder if not integrated in the machine). If adjustable speed and/or stroke length, tests shall be made at maximum recommended settings and at maximum recommended total weight. Stroke length shall be measured from the outer "turnpoints". The length from the front part of the machine house to the tip of the tool shall be measured and reported. All used data should be reported.

c) Holding fingers on the moving tool/tool holder

If the operator needs to guide the tool by holding his/her fingers on the tool or on the moving tool holder, it is likely that the vibration at this hand position would be much greater than that measured on the polishing/filing machine itself. In such cases, a vibration emission value of "greater than 30 m/s^2 shall be declared and measurement on the moving tool or moving tool holder is not required."

Page 16, Figure 19

Re-number the Figure 19 to Figure 25

Page 16, Figure 20

Replace the figure with the following Figures and re-number them from Figure 26-29:

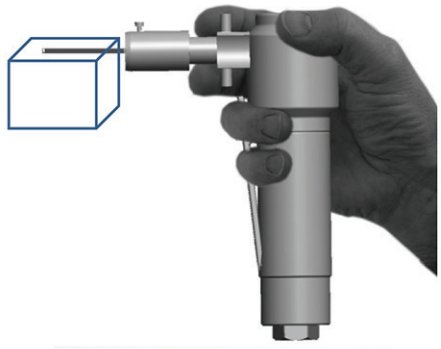


Figure 26 — Operator working position – Angle polishing/filing machine with reciprocating action – Example designed for single hand-held operation

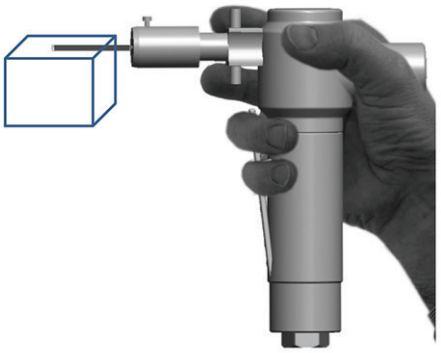


Figure 27 — Operator working position – Angle polishing/filing machine with reciprocating action – Example designed for single hand-held operation – Alternative design

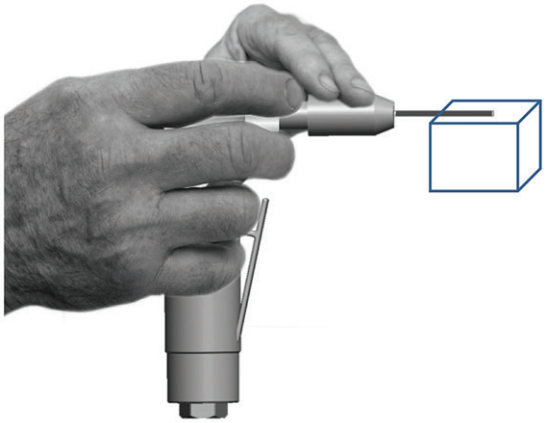


Figure 28 — Operator working position – Angle reciprocating polishing/filing machine with tool holder without moving parts – Example designed for two-handed operation

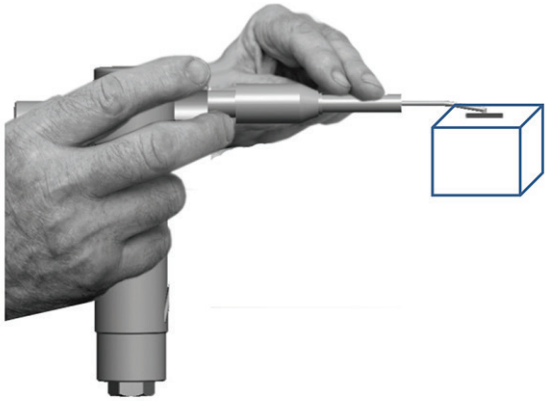


Figure 29 — Operator working position – Angle reciprocating polishing/filing machine with tool holder without moving parts – Example designed for two-handed operation – Alternative design

Page 17, Figure 21

Re-number the Figure to Figure 30

Page 18, Clause 10 bulletpoint f)

Add the text "(and extra tool holder if used)"

Page 18, Clause 10

Add:

l) settings i.e. speed and/or stroke settings

ICS 13.160; 25.140.10

Price based on 11 pages