

INTERNATIONAL STANDARD

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Hand-held portable power tools — Measurement of vibrations at the handle —

Part 4: Grinders

*Machines à moteur portatives — Mesurage des vibrations au niveau des
poignées —*

Partie 4: Meuleuses



Reference number
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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8662-4 was prepared by Technical Committee ISO/TC 118, *Compressors, pneumatic tools and pneumatic machines*, Subcommittee SC 3, *Pneumatic tools and machines*.

ISO 8662 consists of the following parts, under the general title *Hand-held portable power tools — Measurement of vibrations at the handle*:

- *Part 1: General*
- *Part 2: Chipping hammers and riveting hammers*
- *Part 3: Rock drills and rotary hammers*
- *Part 4: Grinders*
- *Part 5: Pavement breakers and hammers for construction work*
- *Part 6: Impact drills*
- *Part 7: Wrenches, screwdrivers and nut runners with impact, impulse or ratcheting action*
- *Part 8: Polishers and rotary, orbital or random sanders*
- *Part 9: Rammers*

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- *Part 10: Nibblers and shears*
- *Part 11: Fastener driving tools (nailers)*
- *Part 12: Saws and files with oscillating, reciprocating or rotating action*
- *Part 13: Die grinders*
- *Part 14: Stone-working tools and needle scalers*

Annex A of this part of ISO 8662 is for information only.

Introduction

This part of ISO 8662, which specifies a type test for the measurement of vibrations at the handles of hand-held portable grinders, supplements ISO 8662-1 which gives general specifications for the measurement of vibrations at the handles of hand-held portable power tools. It specifies the operation of the tool under type test and other requirements for the performance of the type test.

The principle of the operation of these power tools is that a driving medium causes an output spindle to rotate. The spindle is adapted to carry an abrasive device for material removal.

It has been found that vibrations generated by a grinder cutting or grinding a workpiece vary considerably. The variation is largely due to the variances in the unbalance of the machine with the grinding wheel mounted. The unbalance also changes when the wheel is in operation. In order to provide a method which gives good measurement reproducibility, the procedure adopted in this part of ISO 8662 uses a test wheel of known unbalance mounted on a machine and running free. The unbalance is chosen to be 40 % of the highest permissible unbalance according to ISO 6103. Preliminary investigations suggest that the values obtained when the machine is running free are usually correlated with measurements obtained when grinding. However, the procedures of ISO 5349 are required whenever exposure at the workplace is to be assessed.

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1 Scope

This part of ISO 8662 specifies a laboratory method for measuring the vibrations at the handles of hand-held power-driven grinders. It is a type-test procedure for establishing the magnitude of vibration in the handle of a power tool fitted with a specified test wheel.

The power tools covered by this part of ISO 8662 may be pneumatically driven, or driven by other means. Typical tools are illustrated in figure 1.

This part of ISO 8662 does not apply to die grinders.

It is intended that the results be used to compare different models of the same type of power tool, i.e. power tools intended for use with the same grinding wheel (same diameter and same maximum peripheral speed). If an evaluation of vibration exposure is required, then measurements in a work situation will be required.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8662. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8662 are encouraged to investigate the possibility of applying the most recent editions of the

standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 8662-1:1988, *Hand-held portable power tools — Measurement of vibrations at the handle — Part 1: General*.

European Standard EN 792-7, *Handheld non-electric power tools — Safety requirements — Part 7: Grinders*.

3 Quantities to be measured

The quantities to be measured are as follows:

- the root-mean-square (r.m.s.) acceleration in accordance with ISO 8662-1:1988, 3.1, presented as a weighted acceleration in accordance with ISO 8662-1:1988, 3.3;
- the rotational speed;
- the downward feed force.

4 Instrumentation

4.1 General

The specifications for the instrumentation given in ISO 8662-1:1988, 4.1 to 4.6, apply.