

INTERNATIONAL STANDARD

ISO
10884

First edition
1995-09-15

Manually portable brush-cutters and grass-trimmers with internal combustion engine — Determination of sound power levels — Engineering method (Grade 2)

*Débroussailleuses et coupe-herbe portatifs à moteur à combustion
interne — Détermination des niveaux de puissance acoustique —
Méthode d'expertise (classe 2)*



Reference number
ISO 10884:1995(E)



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Foreword

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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 10884 was prepared jointly by Technical Committees ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 17, *Manually portable forest machinery* and ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

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Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Introduction

The International Standard gives a method for determining the sound power level of manually portable brush-cutters and grass-trimmers since the sound power level is one of the two major descriptors of the noise emitted by machinery. The other one is the emission sound pressure level at the workstation which can be determined using ISO 7917. This International Standard together with ISO 7917 constitute the noise test code for manually portable brush-cutters and grass-trimmers with internal combustion engines. The determination of sound power levels and emission sound pressure levels at workstations is necessary for

- manufacturers to declare the noise emitted;
- comparing the noise emitted by machines in the group concerned;
- purposes of noise control at source at the design stage.

This International Standard has been prepared according to the rules for the drafting of noise test codes given in ISO 12001. However, ISO 7917 and this International Standard together do not constitute a noise test code that meets the requirements of ISO 12001, because ISO 7917, in prescribing an absorbing floor, does not meet any of the basic noise standards for the determination of emission sound pressure levels at the workplace.

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1 Scope

This International Standard specifies a method of carrying out, efficiently and under standardized conditions, the determination, declaration and verification of sound power levels of manually portable hand-held brush-cutters and grass-trimmers, as defined in 3.1 and 3.2 respectively. These units have internal combustion engines and are primarily used in forestry.

The use of this International Standard ensures the reproducibility of the determination of sound power levels within specified limits determined by the grade of accuracy of the basic noise standard for the determination of sound power levels used. Preferred methods for the determination of sound power levels according to this International Standard are engineering methods (grade 2).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 3744:1994, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane*.

ISO 4871:1984, *Acoustics — Noise labelling of machinery and equipment*.

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 3744 and the following definitions apply.

3.1 brush-cutter: Unit using a rotating blade made of metal or plastics, intended to cut weed, brush, small trees and similar vegetation.

3.2 grass-trimmer: Unit using flexible line(s), string(s) or similar non-metallic flexible cutting elements, such as pivoting cutters, intended to cut weed, grass or similar soft vegetation.

4 Sound power level determination

4.1 Preferred test method

The preferred method for determining the sound power levels of brush-cutters and grass-trimmers is that given in ISO 3744. This basic Standard for the determination of sound power levels is based on sound pressure measurements at positions specified on a surface enveloping the sound source. It gives all specifications necessary (qualities of the test environment, basic measurement and calculation procedures, instrumentation, determination of background noise and environmental corrections, etc.) for the determination of sound power levels.

NOTE 1 Other basic measurement methods yielding the same or a higher grade of accuracy may also be used (see annex A).

ISO 3744 also offers some options: those chosen for this International Standard are as follows.

When using ISO 3744, the measurement surface shall be a hemisphere with a radius, r , of 4 m.