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**Brush-cutters and grass-trimmers —  
Technical data**

*Débroussailleuses et coupe-herbe — Données techniques*



Reference number  
ISO 11682:1993(E)

## **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.

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# Brush-cutters and grass-trimmers — Technical data

## 1 Scope

This International Standard provides the format for specification of the technical data for portable, hand-held brush-cutters and grass-trimmers with combustion engines, in accordance with the vocabulary in ISO 7112.

## 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 7112:1982, *Machinery for forestry — Portable brush saws — Vocabulary.*

ISO 7113:1991, *Forestry machinery — Portable brush-saws — Saw blades.*

ISO 7916:1989, *Forestry machinery — Portable brush-saws — Measurement of hand-transmitted vibration.*

ISO 7917:1987, *Acoustics — Measurement at the operator's position of airborne noise emitted by brush saws.*

ISO 8893:1989, *Forestry machinery — Portable brush-saws — Engine performance and fuel consumption.*

1) To be published.

ISO 10884:—<sup>1)</sup>, *Manually portable brush cutters and grass-trimmers with internal combustion engine — Determination of sound power levels.*

## 3 Technical data

### 3.1 Masses

The following masses shall be specified:

- |    |   |    |
|----|---|----|
| a) | unit without cutting attachment, empty tank: .....        | kg |
| b) | unit with specified cutting attachment, empty tank: ..... | kg |
| c) | unit with specified cutting attachment, full tank: .....  | kg |

### 3.2 Volume

The following volume shall be specified:

Fuel tank: ..... l

### 3.3 Cutting attachment

The following cutting attachment details, measured in accordance with ISO 7113, shall be given:

- |    |   |                 |
|----|---|-----------------|
| a) | usable cutting depth of specified cutting attachment: .....   | mm              |
| b) | specified blade diameter: .....                               | mm              |
| c) | specified blade thickness: .....                              | mm              |
| d) | number of cutting teeth: .....                                |                 |
| e) | blade centre hole diameter: .....                             | mm              |
| f) | blade rotational speed at maximum allowed engine speed: ..... | s <sup>-1</sup> |

**3.4 Gear ratio**

Gear ratio: .....

**3.5 Rotational direction of output shaft seen from above**

Clockwise/anticlockwise (delete)

**3.6 External dimensions**

The following external dimensions of the unit excluding the cutting attachment (see figure 1) shall be specified:

- a) length: ..... mm
- b) width: ..... mm
- c) height: ..... mm

NOTE 1 These dimensions may be expressed as a range for adjustable units.

**3.7 Engine**

The engine details shall be indicated as follows:

- a) engine displacement: ..... cm<sup>3</sup>
- b) maximum shaft brake power, measured in accordance with ISO 8893: ..... kW
- c) Rotational speeds:
  - 1) engine speed at maximum power: ..... s<sup>-1</sup>
  - 2) recommended maximum engine speed: ..... s<sup>-1</sup>
  - 3) output shaft speed: ..... s<sup>-1</sup>
  - 4) recommended engine idling speed: ..... s<sup>-1</sup>
  - 5) engine speed at beginning of clutch engagement: ..... s<sup>-1</sup>

NOTE 2 These rotational speeds may alternatively or additionally be given in minutes to the power minus one (min<sup>-1</sup>).

**3.8 Fuel consumption**

The following fuel consumptions, measured in accordance with ISO 8893, shall be given:

- a) fuel consumption at maximum engine power: ..... l/h
- b) specified fuel consumption at maximum engine power: ..... g/(kW·h)

**3.9 Sound pressure levels**

The following A-weighted sound pressure levels, measured in accordance with ISO 7917, shall be given:

- a) idling (*L<sub>pl</sub>*): ..... dB
- b) racing (*L<sub>pr</sub>*): ..... dB
- c) octave band analysis (if required):  
.....

Additionally an equivalent sound pressure level (*L<sub>peq</sub>*) may be calculated by

$$L_{peq} = 10 \lg \left[ \frac{1}{2} (10^{0,1L_{pl}} + 10^{0,1L_{pr}}) \right]$$

**3.10 Sound power levels**

The following A-weighted sound power levels, measured in accordance with ISO 10884, shall be given:

- a) idling (*L<sub>wl</sub>*): ..... dB
- b) racing (*L<sub>wR</sub>*): ..... dB

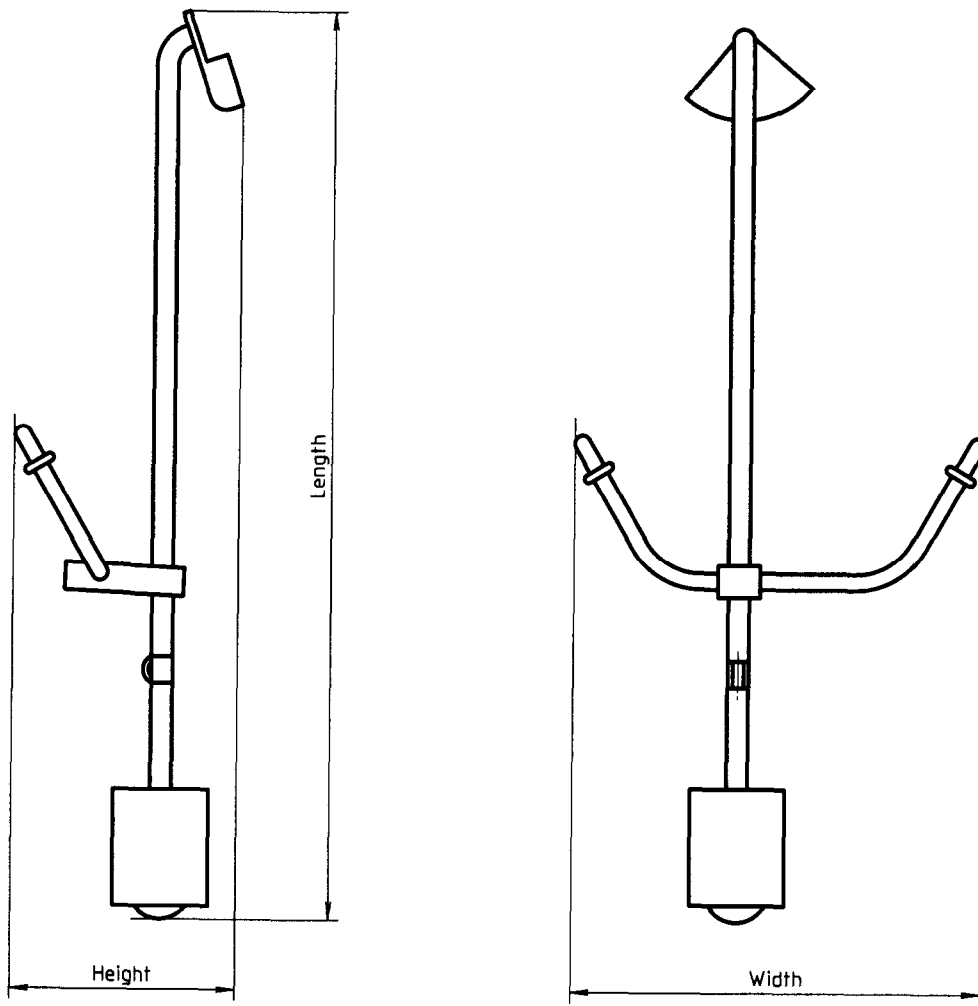
Additionally an equivalent sound power level (*L<sub>weq</sub>*) may be calculated by

$$L_{weq} = 10 \lg \left[ \frac{1}{2} (10^{0,1L_{wl}} + 10^{0,1L_{wR}}) \right]$$

**3.11 Vibration levels**

The vibration levels, measured in accordance with ISO 7916 at the following engine speeds, shall be given:

- a) idling: ..... m/s<sup>2</sup>
- b) full load: ..... m/s<sup>2</sup>
- c) racing: ..... m/s<sup>2</sup>



**Figure 1 — External dimensions of unit excluding cutting attachment**

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**Descriptors:** agricultural machinery, forest equipment, portable equipment, brush cutters, grass trimmers, specifications, presentation.

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