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**Agricultural and forestry
machinery — Safety requirements
and testing for portable, hand-held,
powered brush-cutters and grass-
trimmers —**

**Part 2:
Machines for use with backpack
power unit**

*Matériel agricole et forestier — Exigences de sécurité et essais pour
débroussailleuses et coupe-herbe portatifs à moteur —*

Partie 2: Machines pour utilisation avec source motrice portée à dos



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.

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 of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 17, *Manually portable (hand-held) powered lawn and garden equipment and forest machinery*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 144, *Tractors and machinery for agriculture and forestry*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 11806-2:2011), which has been technically revised.

The main changes compared to the previous edition are as follows:

- the reference to ISO 11806-1 has been updated to the latest edition;
- the requirements for the harness for the backpack power unit have been reworded and amended;
- the throttle control requirements for the backpack power unit have been added;
- the requirements for the fuel tank structural integrity for the backpack power unit has been added by including a new [Annex B](#).

A list of all parts in the ISO 11806 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

This corrected version of ISO 11806-2:2022 incorporates the following corrections:

- the year of publication has been corrected for ISO 11806-1:2022.

Introduction

This document is a type-C standard as stated in ISO 12100:2010.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organisations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

Agricultural and forestry machinery — Safety requirements and testing for portable, hand-held, powered brush-cutters and grass-trimmers —

Part 2: Machines for use with backpack power unit

1 Scope

This document specifies safety requirements, and measures for their verification, for the design and construction of portable, hand-held, powered brush-cutters and grass-trimmers with a backpack-mounted combustion engine power source and mechanical power transmission between the power source and the cutting attachment (hereafter referred to as “machine”). Methods for the elimination or reduction of hazards arising from the use of these machines and the type of information on safe working practices to be provided by the manufacturer are specified.

This document, taken together with the relevant clauses of ISO 11806-1:2022 (see 4.1), deals with all significant hazards, hazardous situations and hazardous events, with the exception of whole-body vibration from the backpack power unit, relevant to these machines when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer.

NOTE 1 A standardized test procedure for measuring whole-body vibration from the backpack power unit is not available at the time of publication.

NOTE 2 See [Annex A](#), together with ISO 11806-1:2022, Annex A, for a list of significant hazards.

This document is applicable to portable, hand-held, powered brush-cutters and grass-trimmers manufactured after its date of publication.

This document is not applicable to machines equipped with metallic cutting attachments consisting of more than one piece, such as pivoting chains or flail blades.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components*

ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

ISO 11806-1:2022, *Agricultural and forestry machinery — Safety requirements and testing for portable, hand-held, powered brush-cutters and grass-trimmers — Part 1: Machines fitted with an integral combustion engine*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 13857:2019, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*