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Machinery for forestry — Safety requirements and testing for portable pole mounted powered pruners

Matériel forestier — Exigences de sécurité et essais pour les perches élagueuses à moteur

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Contents

Page

Foreword ..... **v**
Introduction ..... **vi**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **2**
4 Safety requirements and/or protective measures **4**
4.1 General 4
4.2 Protection against contact with power driven components 4
4.2.1 Requirements 4
4.2.2 Verification 4
4.3 Handles and hand grip 5
4.3.1 Requirements for handles 5
4.3.2 Requirements for hand grip for machines with a backpack power unit 5
4.3.3 Verification 5
4.4 Harness 5
4.4.1 Requirements 5
4.4.2 Verification 6
4.5 Cutting attachment 7
4.5.1 Saw-chain cutting attachment 7
4.5.2 Circular saw blade cutting attachment 7
4.5.3 Cutting attachment strength 8
4.6 Cutting attachment cover 10
4.6.1 Requirements 10
4.6.2 Verification 10
4.7 Distance to cutting attachment 10
4.7.1 Requirements 10
4.7.2 Verification 11
4.8 Engine starting device 11
4.8.1 Requirements 11
4.8.2 Verification 11
4.9 Engine stopping device 11
4.9.1 Requirements 11
4.9.2 Verification 12
4.10 Throttle control 12
4.10.1 Throttle trigger 12
4.10.2 Operation 12
4.10.3 Throttle control latch 13
4.11 Clutch 13
4.11.1 Requirements 13
4.11.2 Verification 13
4.12 Tanks 14
4.12.1 Requirements 14
4.12.2 Verification 14
4.13 Protection against contact with parts of the machine under high voltage 14
4.13.1 Requirements 14
4.13.2 Verification 14
4.14 Protection against contact with hot parts 14
4.14.1 Requirements 14
4.14.2 Verification 15
4.15 Exhaust gases 15
4.15.1 Requirements 15
4.15.2 Verification 16
4.16 Vibration 16
4.16.1 Reduction by design at source and by protective measures 16

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4.16.2 Vibration measurement ... 16
4.17 Noise ... 16
4.17.1 Reduction by design at source and protective measures ... 16
4.17.2 Noise measurement ... 16
4.18 Electromagnetic immunity ... 16
4.18.1 Requirements ... 16
4.18.2 Verification ... 16
4.19 Fuel feed line strength and accessibility ... 17
4.19.1 Requirements ... 17
4.19.2 Verification ... 17
4.20 Fuel tank structural integrity ... 17
4.20.1 Requirements ... 17
4.20.2 Verification ... 17
4.21 Hydraulic and pneumatic pipes and hoses for machines with a backpack power unit ... 17
4.21.1 Requirements ... 17
4.21.2 Verification ... 18

5 Information for use ... **18**
5.1 Instructions ... 18
5.1.1 General ... 18
5.1.2 Technical data ... 18
5.1.3 Other information ... 18
5.2 Markings and warnings ... 20
5.2.1 General requirements ... 20
5.2.2 Marking requirements ... 21
5.2.3 Warning requirements ... 22
5.3 Test of labels ... 22
5.3.1 Preparation of test specimens and control specimens ... 22
5.3.2 Wipe resistance test ... 22
5.3.3 Adhesion test ... 23

Annex A (informative) **List of significant hazards** ... **24**

Annex B (normative) **Procedures for the evaluation of the strength and accessibility of fuel feed lines** ... **26**

Annex C (normative) **Verification of protection against contact with hot parts** ... **27**

Bibliography ... **29**

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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 document 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).

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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 first edition of ISO 11680 cancels and replaces ISO 11680-1:2021 and ISO 11680-2:2021, which have been technically revised.

The main changes are as follows:

— the requirements have been combined into a single standard;

— in 4.3.1:

  — the handle's minimal gripping length requirements (from 65 mm to 63 mm) has been revised to harmonize with IEC standards;

  — a 25 mm dimensional requirement around the gripping length has been added;

— in 4.5.3 and Figure 6, a new requirement for cutting attachment strength test set-up for machines with a backpack has been added;

— in 4.7.1 and Figure 7, the distance to cutting attachments measurements has been clarified;

— in 4.10.2.2, a maximum throttle linkage actuation test force (“200 N") has been added;

— the minimum number of tests (“at least one”) and determination of test directions (“good engineering judgement”) for fuel feed lines strength and accessibility testings have been clarified;

— in Annex B, the 200 mm of the test probe is the free length after mounting.

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.

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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.

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Machinery for forestry — Safety requirements and testing for portable pole mounted powered pruners

1 Scope

This document specifies safety requirements, and measures for their verification, for the design and construction of portable pole-mounted powered pruners with internal combustion engine power sources (hereafter named "machine"), including extendable and telescopic machines. These machines use a power transmission shaft to transmit power to a cutting attachment consisting of a saw-chain and guide bar, a reciprocating saw blade or a single-piece circular saw blade with a 205 mm maximum outside diameter.

This document deals with significant hazards relevant to these machines when they are used as intended. This document does not address electrical shock from contact with overhead electric lines apart from warnings and instruction manual requirements, or whole-body vibration from back power units.

NOTE 1 See Annex A for a list of significant hazards.

This document is applicable to machines manufactured after its date of publication.

Brush cutters with a circular saw blade are not included in the scope of this document.

NOTE 2 Brush cutter requirements are outlined in ISO 11806-1 and ISO 11806-2.

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 6531:2024, *Machinery for forestry — Portable chain-saws — Vocabulary*

ISO 7112:2018, *Machinery for forestry — Portable brush-cutters and grass-trimmers — Vocabulary*

ISO 7113:1999, *Portable hand-held forestry machines — Cutting attachments for brush cutters — Single-piece metal blades*

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*

ISO 14982:1998, *Agricultural and forestry machinery — Electromagnetic compatibility — Test methods and acceptance criteria*

ISO 22867:2021, *Forestry and gardening machinery — Vibration test code for portable hand-held machines with internal combustion engine — Vibration at the handles*

ISO 22868:2021, *Forestry and gardening machinery — Noise test code for portable hand-held machines with internal combustion engine — Engineering method (Grade 2 accuracy)*

IEC 61032:1997, *Protection of persons and equipment by enclosures — Probes for verification*

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