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Forestry machinery — Portable chain-saws — Engine performance and fuel consumption

Machines forestières — Scies à chaîne portatives — Puissance et consommation de carburant du moteur



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*.

This third edition cancels and replaces the second edition (ISO 7293:1997), which has been technically revised.

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

- the normative references have been updated;
- the mandatory terms and definitions clause has been inserted and subsequent clauses have been renumbered;
- the "Apparatus" clause has been replaced with "Accuracy of measurements";
- the "Test conditions" clause has been replaced with "Power correction factors";
- the conditions of measurement have been revised;
- the operating method has been revised;
- a new [Table 1](#), Sample test data record sheet, has been added.

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

This corrected version of ISO 7293:2021 incorporates the following corrections:

- [Formula \(2\)](#) has been corrected.

Introduction

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

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.

Forestry machinery — Portable chain-saws — Engine performance and fuel consumption

1 Scope

This document specifies a method for testing the performance and fuel consumption of internal combustion engines used to power portable chain-saws.

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 5164, *Petroleum products — Determination of knock characteristics of motor fuels — Research method*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

4 Accuracy of measurements

4.1 Torque: ± 2 % of measured torque. The torque measuring system shall be calibrated to take friction losses into account.

4.2 Engine speed: ± 2 % of measured speed.

4.3 Fuel consumption: ± 2 % of measured consumption.

4.4 Fuel temperature: ± 2 °C.

4.5 Engine inlet air temperature: ± 2 °C.

4.6 Barometric pressure: ± 100 Pa.