
**Forestry machinery — Portable chain-
saws — Non-manually actuated chain
brake performance**

*Matériel forestier — Scies à chaîne portatives — Performance du
frein de chaîne automatique*

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Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Performance requirements	1
5 Principle	2
6 Test equipment	2
6.1 Acceleration measuring equipment	2
6.2 Test rig	3
7 Preparation	4
8 Test procedure	5
9 Test report	5
Annex A (normative) Frequency range and low-pass filter characteristics	7
Bibliography	8

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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 the 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 the following URL: www.iso.org/iso/foreword.html

This document was prepared by Technical Committee TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 17, *Manually portable forest machinery*.

This fourth edition cancels and replaces the third edition (ISO 13772:2009), which has been technically revised. Numerous improvements have been introduced for increased accuracy and reproducibility:

- electric-powered chain-saws have been added to the scope and requirements have been included accordingly;
- a maximum length has been stated for guide bars to be used;
- new low-pass filter characteristics have been specified;
- material of rocker spacer has been changed;
- a requirement that the throttle trigger or activation power switch (for electric chain-saws) be fixed in the fully activated position during the test has been added;
- the pulse length of the initial impulse has been specified and related instructions have been added.

Forestry machinery — Portable chain-saws — Non-manually actuated chain brake performance

1 Scope

This document specifies a method for checking the functioning and performance of the non-manually actuated chain brake on an electric or gasoline engine powered, portable hand-held chain-saw.

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6531 apply.

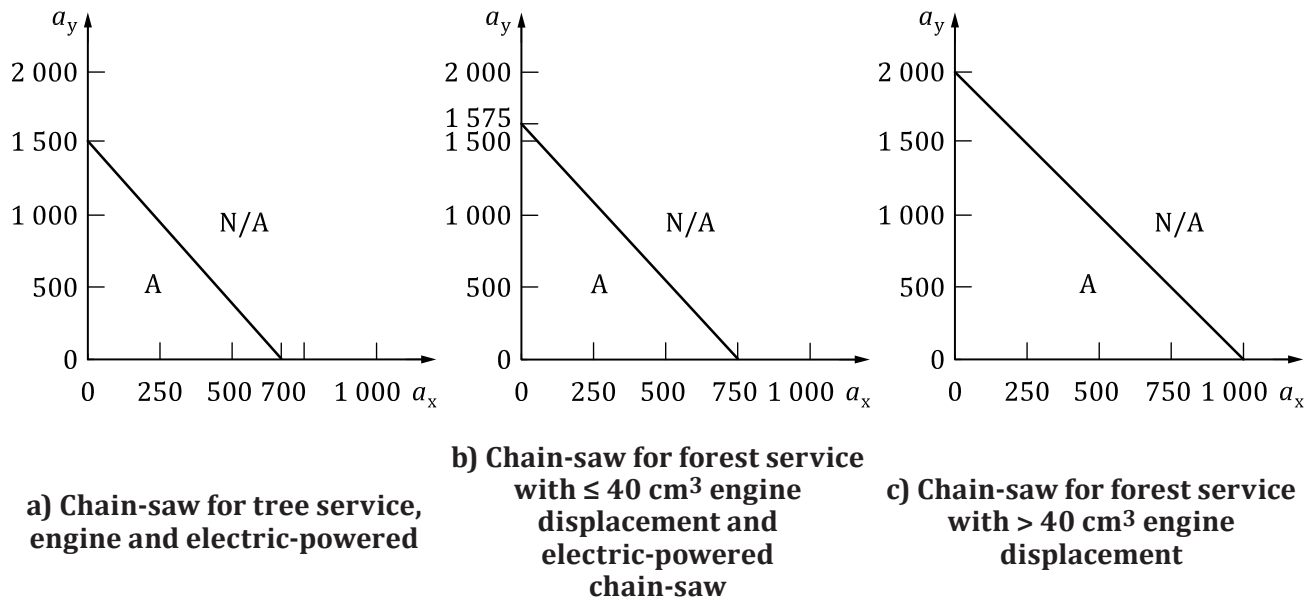
ISO and IEC maintain terminological databases for use in standardization at the following addresses:

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

4 Performance requirements ISO 13772:2018

The non-manually actuated chain brake function shall be checked on a new normal production saw equipped with the shortest and longest guide bars specified in the instruction handbook, but no longer than 500 mm. Battery-powered chain-saws shall be checked with the lightest and heaviest battery packs.

When tested in accordance with [Clause 8](#), the performance of the actuation function of a non-manually actuated chain brake is considered acceptable if each of the horizontal and vertical acceleration levels (a_x and a_y) at which the chain brake actuates is below the appropriate threshold level as shown in [Figure 1](#) a), b) or c) for different chain-saw types and sizes.



Key

- a_x horizontal acceleration, expressed in m/s^2
- a_y vertical acceleration, expressed in m/s^2
- A acceptable
- N/A not acceptable

Figure 1 — Threshold acceleration levels for actuation of non-manually actuated chain brakes

5 Principle

The chain-saw shall be mounted on a test rig as shown in [Figure 3](#). The drop mass falls from a defined height on the rocker and accelerates the chain-saw on the opposite side. The drop height shall be increased until the actuation of the non-manually actuated chain-brake occurs.

6 Test equipment

6.1 Acceleration measuring equipment

The total mass of the accelerometer(s) shall be as low as possible and shall not, in any case, exceed 50 g, including the mounting, but excluding the cables.

The signal from the accelerometer(s) shall be processed by a low-pass filter having characteristics in accordance with [Annex A](#).

Care shall be taken when mounting the accelerometer(s) so that the transfer function is flat up to 300 Hz in both measuring directions. For general considerations concerning accelerometer mounting, see ISO 5348. The transfer function may be considered flat if an addition of mass to the accelerometer, equal to that of the accelerometer itself, does not have any significant influence on a_x and a_y . This additional mass should be placed between the accelerometer and its mounting if the mass is of metal, or around the accelerometer if the mass consists of materials such as clay or wax.

The accuracy of the measuring equipment, excluding accelerometer mounting and filter, shall be $\pm 5 \%$ of the registered value in the frequency range from 0 Hz to 300 Hz. See ISO 16063-1 for calibration methods.