
**Forestry machinery — Portable chain-saw
hand-guards — Mechanical strength**

*Matériel forestier — Protections des mains des scies à chaîne
portatives — Résistance mécanique*

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 6534 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 17, *Manually portable forest machinery*.

This third edition cancels and replaces the second edition (ISO 6534:1992), of which subclauses 5.2.2 and 5.3 have been technically revised.

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Introduction

Some chain-saw designs will have the rear handle so offset from the guide-bar centreline that the impact point for the blow will only partly hit the guard. A minimum distance from the guard edge has therefore been added.

The point of hit for the durability test has also been clarified.

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Forestry machinery — Portable chain-saw hand-guards — Mechanical strength

1 Scope

This International Standard specifies the mechanical strength requirements relating to the front and rear hand-guards of portable hand-held combustion engine chain-saws for use primarily in forestry. It also gives the corresponding test methods.

2 Normative references

The following referenced documents are indispensable for the application 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*

ISO 6533:2001, *Forestry machinery — Portable chain-saw front hand-guard — Dimensions and clearances*

3 Terms and definitions

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

4 Requirements

The front and rear hand-guards shall not break or crack when tested in accordance with Clause 5. The guards shall not deflect far enough to allow the pendulum to swing past.

Before and after the test, the dimensions of the front hand-guard shall comply with the specifications of ISO 6533.

5 Test procedure

5.1 General

The test shall be carried out with the chain-saw rigidly held in the upright position for the front hand-guard test, and mounted upside down, rigidly held by the guide-bar mount, for the rear hand-guard test (see Figures 2 and 3).

If the front hand-guard also serves as the activating device for the chain-brake, it shall be in the activated position.

The impact on the guard shall be generated by a blow from a pendulum with a steel hammer in accordance with Figure 1, and an arm with a length giving $700 \text{ mm} \pm 5 \text{ mm}$ distance between the swivel point and the centre of the head. The arm shall be as light as possible. The pendulum system shall cause an impact corresponding to $10 \text{ J} \pm 0,3 \text{ J}$ from a drop height, a , of 400 mm, and of $5 \text{ J} \pm 0,2 \text{ J}$ from a drop height, a of 200 mm.

5.2 Impact tests

5.2.1 General

The tests in 5.2.2 and 5.2.3 shall be carried out once for each of the temperatures $+40\text{ °C} \pm 2\text{ °C}$ and $-25\text{ °C} \pm 3\text{ °C}$. The temperatures shall be measured at the front hand-guard and its mounting.

5.2.2 Impact test for front hand-guard

Raise the hammer and allow it to fall, so that it causes an impact corresponding to $10\text{ J} \pm 0,3\text{ J}$. The hammer shall strike the upper part of the guard at the midpoint of the effective guard length W_1 as described in 7.1 of ISO 6533:2001, along a line of action forming an angle of $45^\circ \pm 5^\circ$ with the guide-bar axis, in accordance with Figure 2.

5.2.3 Impact test for rear hand-guard

Raise the hammer and allow it to fall so that it causes an impact corresponding to $10\text{ J} \pm 0,3\text{ J}$. The hammer shall strike the hand-guard along a line of action forming an angle of $45^\circ \pm 5^\circ$ with the guide-bar axis, in accordance with Figure 3 a).

The impact point shall be on the intersection of the centreline of the guide-bar and the plane perpendicular to the guide-bar plane, at an equal distance from the rear end of the throttle trigger and the inner far end of the handle [see A in Figure 3 b)]. In cases where the point of intersection is less than 10 mm from the guard edge, the impact point shall be moved so that the distance from the guard edge is $10\text{ mm} \pm 2,5\text{ mm}$.

5.3 Durability test for front and rear hand-guards

5.3.1 General

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This test shall be carried out at the temperature of $+20\text{ °C} \pm 5\text{ °C}$.

5.3.2 Durability test for the front hand-guard

Raise the hammer and allow it to fall so that it causes an impact corresponding to $5\text{ J} \pm 0,2\text{ J}$. The hammer shall strike the guard at the same point as defined in 5.2.2.

Repeat this test to a total of 25 blows.

5.3.3 Durability test for the rear hand-guard

Raise the hammer and allow it to fall so that it causes an impact corresponding to $5\text{ J} \pm 0,2\text{ J}$. The hammer shall strike the guard at the same point as defined in 5.2.3.

Repeat this test to a total of 25 blows.

Dimensions in millimetres

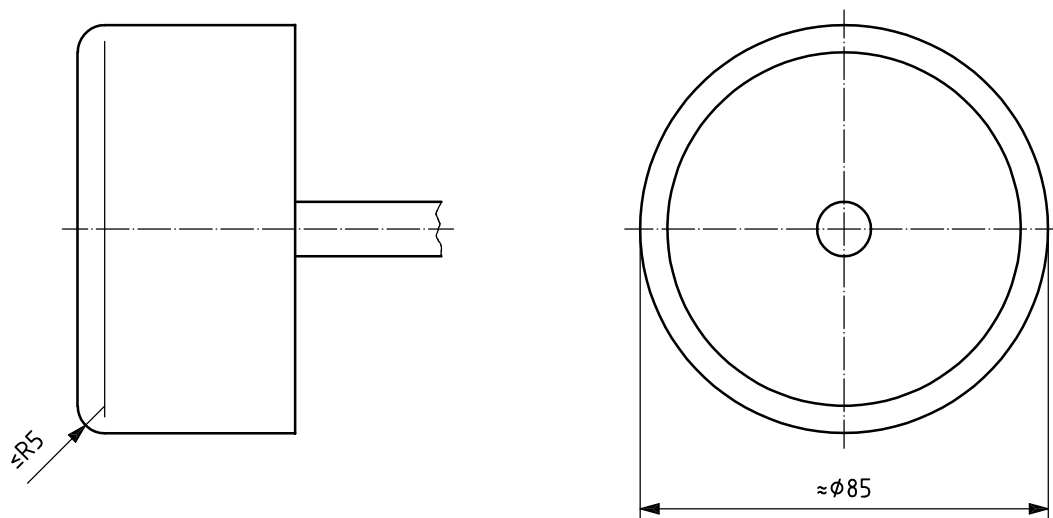


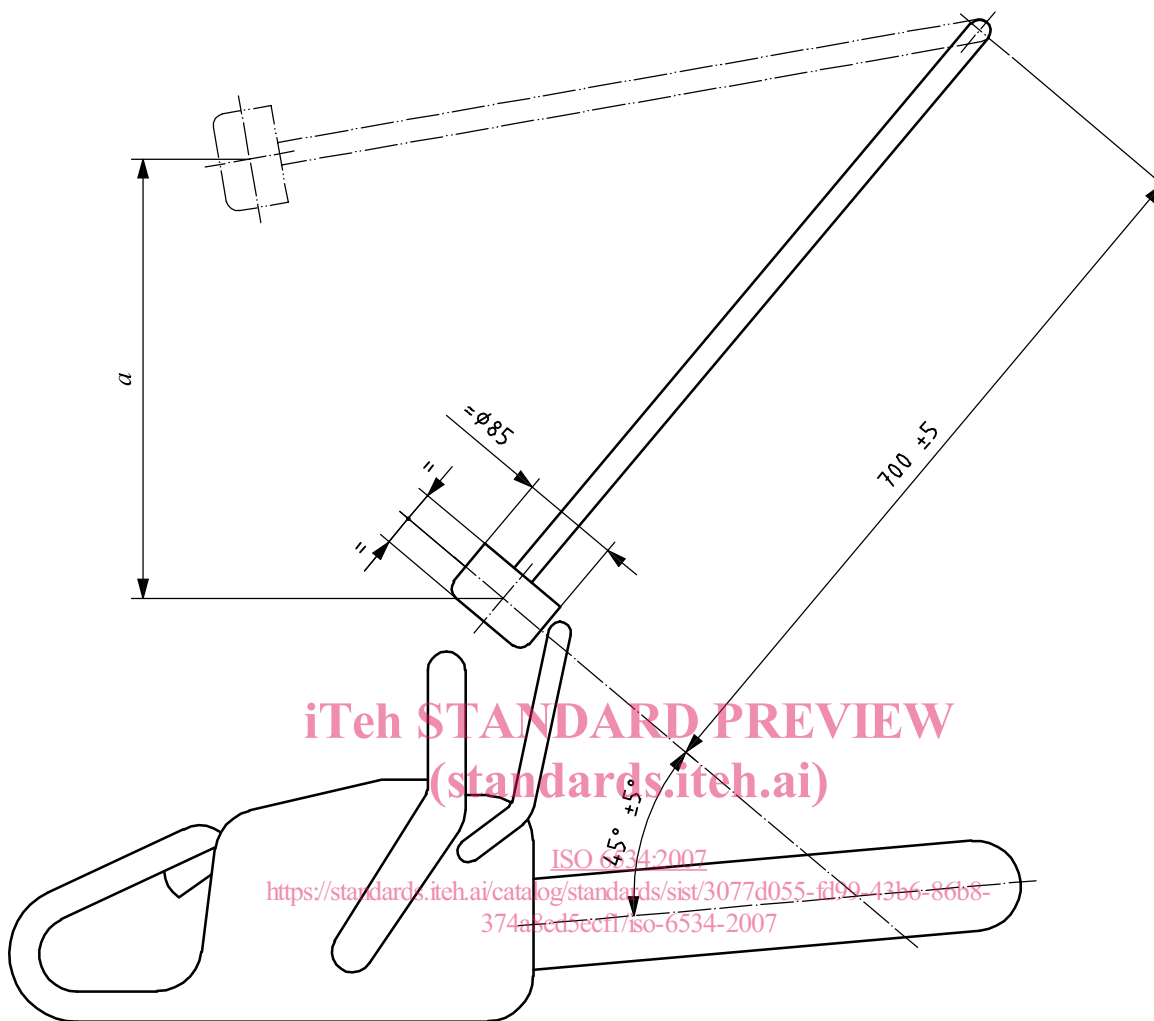
Figure 1 — Dimensions of hammer

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Dimensions in millimetres

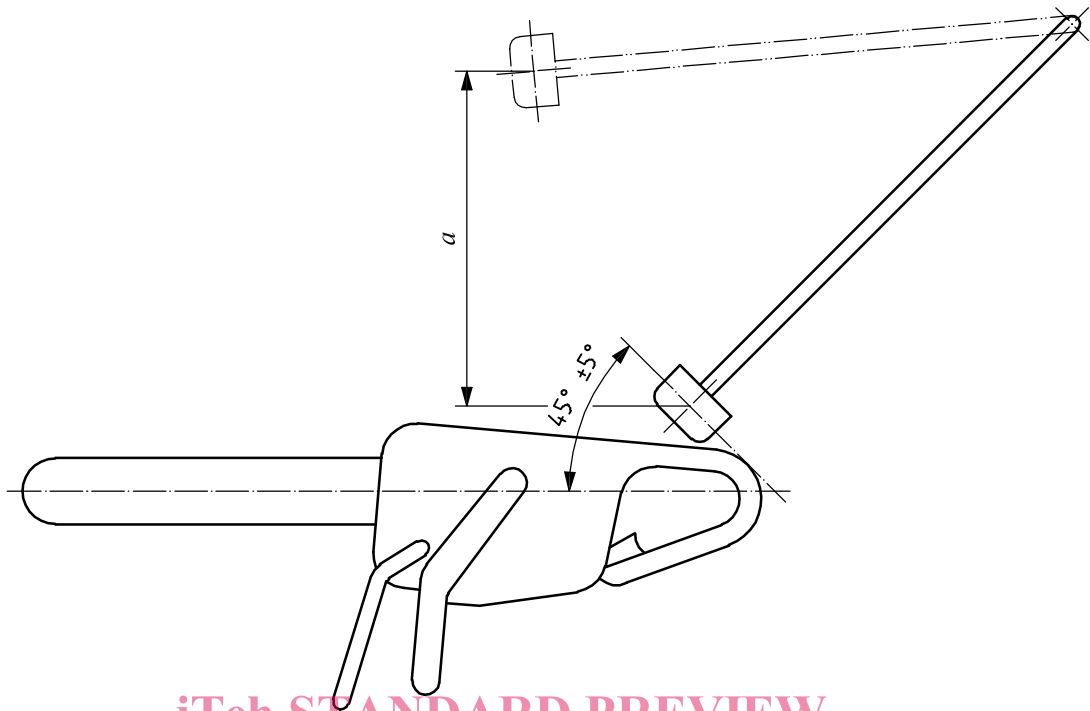


Key

a fall height

Figure 2 — Impact test of front hand-guard

Dimensions in millimetres

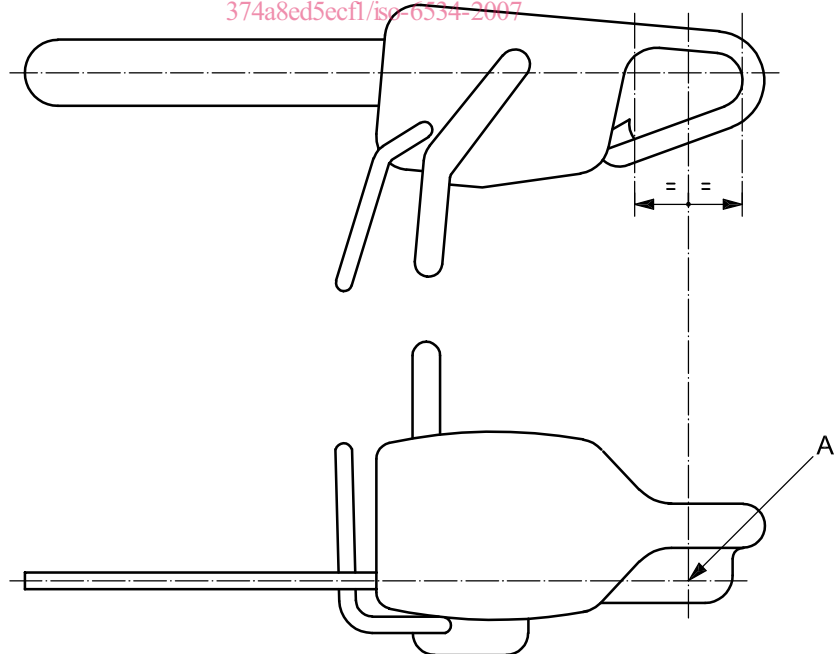


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Key
a fall height

a) Principle

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Key
A impact point

b) Impact point

Figure 3 — Impact test of rear hand-guard