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**Machinery for forestry — Portable chain-  
saws — Safety requirements and  
testing —**

Part 2:

**Chain-saws for tree service**

iTeh STANDARD PREVIEW  
AMENDMENT 1  
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*Matériel forestier — Scies à chaîne portatives — Exigences de sécurité  
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*Partie 2: Scies à chaîne pour l'élagage des arbres*

AMENDEMENT 1



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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.

Amendment 1 to ISO 11681-2:1998 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 17, *Manually portable forest machinery*.

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# Machinery for forestry — Portable chain-saws — Safety requirements and testing —

## Part 2: Chain-saws for tree service

### AMENDMENT 1

#### *Page v, Introduction*

In order to reflect the changes made by this amendment, carry out the following modifications to the list in the Introduction specifying the differences between ISO 11681-2 and ISO 11681-1.

Modify the first and second points to read

- “ ...
- clause 1: the tree service chain-saws are limited in size by the maximum allowed dry mass of 4,3 kg;
  - clause 3: a definition of trained operator has been added and that for chain saws for tree service has been changed;
- ...”
- <https://standards.iteh.ai/catalog/standards/sist/6fbc0fd8-d621-4c8f-a7bb-14e7e6441a82/iso-11681-2-1998-amd-1-2003>

Modify the fourth and fifth points to read

- “ ...
- subclause 4.3: a requirement for the sideways balance, measured in accordance with a new Annex D, has been added with a limited holding moment of 6 N·m;
  - subclause 4.4: the non-manual chain-brake system shall meet stricter requirements than those in ISO 13772 and the allowed kickback angle has been reduced to 25°;
- ...”

Delete the seventh and eleventh indents (those making reference to 4.9 and 4.10, and 4.18), and modify the fourteenth and fifteenth indents to read

- “ ...
- subclause 6.3: new safety warnings have been added along with a new Annex E;
  - subclause 6.4: new markings on the saw and information at the point of sale are requested, examples of the symbols to be used are given in a new Annex F.
- ...”

Page 1, Clause 1

Replace the first and second paragraphs of the Scope by the following.

“This part of ISO 11681 specifies safety requirements and their verification for the design and construction of portable combustion-engine, hand-held chain-saws for tree service, designed for use by a trained operator for pruning and dismantling standing tree crowns.

It is applicable to chain-saws having a maximum mass of the saw equal to 4,3 kg, without guide bar and saw chain and with empty tanks.”

Pages 1 and 2, Clause 2

Add the dates as follows to the two remaining undated International Standards given in the list of normative references:

“ISO 6531:1999, ...”

“ISO 9518:1999, ...”

Page 2, Clause 3

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Replace the first paragraph by the following.

“For the purposes of this document, the definitions given in ISO 6531, with the exception of the definition of 3.1, and the following apply.”

[ISO 11681-2:1998/Amd 1:2003](https://standards.iteh.ai/catalog/standards/sist/6fbc0fd8-d621-4c8f-a7bb-14e7e6441a82/iso-11681-2-1998-amd-1-2003)

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Replace definition 3.1 with

“ **3.1**

**chain-saw for tree service**

specialised chain-saw of limited mass designed for use by a trained operator (see 3.2) for pruning and dismantling standing tree crowns”

Replace 3.2, “attachment point” (defined in ISO 6531:1999), with the following term and definition.

“ **3.2**

**trained operator**

person who has competence and knowledge in

- the use and particular hazards associated with using a chain-saw (for tree service work) manufactured in accordance with the requirements of this part of ISO 11681, and
- the precautions to be taken to limit these hazards, including the wearing of the recommended personal protective equipment (PPE)”

Page 4, 4.3

Replace the entire text of the subclause by the following.

“The chain-saw shall be balanced when fitted with the manufacturer’s recommended guide-bars. The balance shall be tested in accordance with ISO 8334. The holding moment shall be a maximum 6 N·m, when determined in accordance with Annex C.

The maximum angle of the guide-bar shall not exceed 25° above and below the horizontal plane.

Sideways balance when measured in accordance with Annex D shall be 0° ± 10°.

*Page 4, 4.4.1*

Strengthen the requirements for the non-manually chain brake activation system by adding the following limitations on the threshold values, changing the second sentence of the second paragraph to read

“The performance of the system shall be determined in accordance with ISO 13772, but with the threshold level for activation modified to  $y = 1\,500\text{ m/s}^2$  and  $x = 700\text{ m/s}^2$ .”

Replace the last paragraph with

“The computed kickback angle or chain stop angle, whichever is less, shall not exceed 25°.”

*Page 4, 4.4.2*

Limit the allowed chain brake release force by replacing the first sentence with

“4.4.2 The chain brake release force shall be between 20 N and 50 N.”

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*Page 6, 4.12*

Replace the second sentence by the following.  
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“The control for this device shall be so positioned that it can be operated by either hand when held in one hand, and by the right hand when held in both hands, whether or not the operator is wearing protective gloves.”

*Page 6, 4.14*

Replace the entire text of the subclause by the following.

“The chain-saw shall have a clutch so designed that the chain does not run when the engine rotates at any speed less than 1,25 times the idling speed as specified in the instruction handbook. (See 6.2.1.)”

*Page 10, 6.3*

Add the following points at the end of the list in 6.3 d).

“... ”

- for the effects of vibration, there shall be instructions for the use of gloves;
- instruction that the chain-saw, when held in both hands, shall be held with the right hand on the rear handle and the left hand on the front handle;
- descriptions of how to use the saw. See the examples given in Annex E.”

Add the following point at the end of the list in 6.3 e).

“ ...

- the provision of sufficient information to enable the user to maintain the safety system throughout the life of the product and explain the consequences of improper maintenance, use of non-conforming replacement components, or the removal or modification of safety components. In particular the replacement chain shall have the same or lower kickback characteristics as that originally supplied.”

Page 12, 6.4

Add the following subclause title below 6.4:

**“6.4.1 Information on the chain saw”**

Replace the second and third points in the second list of 6.4 (additional information that chain-saws are to bear) by the following.

“ ...

- a symbol indicating the necessity of wearing appropriate eye, hearing and head protection;
- a prominent mark, **“WARNING — THIS SAW IS FOR TRAINED TREE SERVICE OPERATORS ONLY. SEE INSTRUCTION HANDBOOK.”**; (this text may be replaced by a pictorial — see Annex F for an example);

...”

Add a new point at the end of the second list in 6.4:  
<http://standards.iteh.ai/catalog/standards/sist/6fbc0fd8-d621-4c8f-a7bb-14e7e6441a82/iso-11681-2-1998-amd-1-2003>

“ ...

- a symbol indicating that appropriate protective clothing is necessary (e.g. for feet, legs, hands and fore-arms), see example in Annex F.

Add the following new subclause.

**“6.4.2 Information at the point of sale**

Visible information or labelling shall be provided for the point of sale of the chain-saw such that it can be seen by the potential buyer giving, as a minimum, the following information in the language of the country of sale:

**‘WARNING — THIS SAW IS FOR TRAINED TREE SERVICE OPERATORS ONLY. SEE INSTRUCTION HANDBOOK’.**”

Annexes

Add the following new annexes D, E and F.



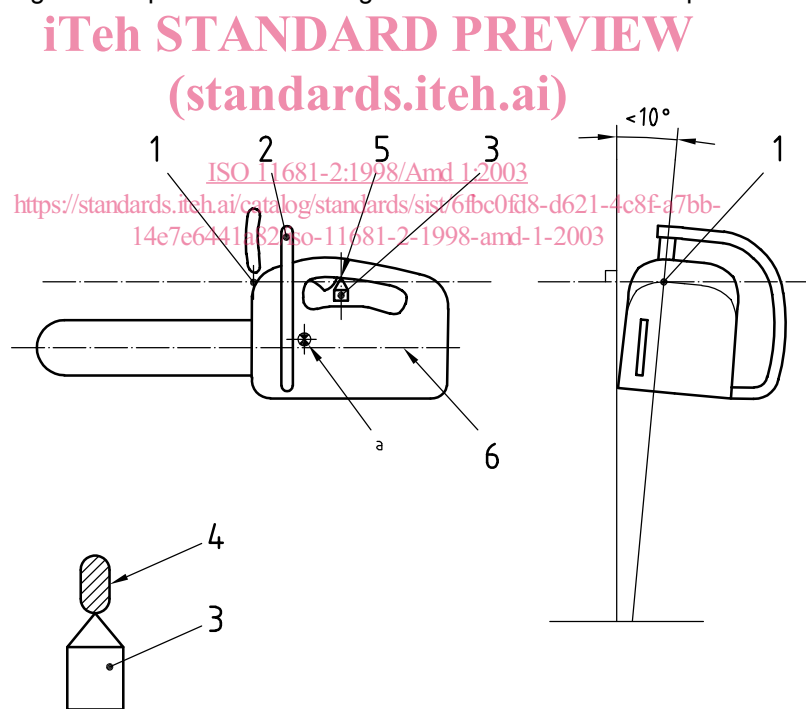
## Annex D (normative)

### Sideways balance test procedure

To determine the sideways balance of a chain-saw, with its standard cutting attachment and tanks full, carry out the following procedure.

- Balance the chain-saw by, and support it on, two points. One of these contact points shall be on the centre line of the throttle trigger, as close as possible behind that trigger. The second point, used to stabilize the saw so that the guide bar remains horizontal, shall be located in front of the throttle trigger on a line parallel to the centre line of the guide bar. If needed, rigidly apply a device (e.g. plastic block) to the machine in order to facilitate the determination of the front supporting point; the mass from this device shall not affect the balance.
- Use a support pin constructed of steel rod with a maximum diameter of 10 mm and having a point of 45° maximum. If the chain saw will not remain on the rear handle contact point because of handle design, it is permissible to drill a recess hole for locating the support pin. The recess hole diameter and depth shall be such as to provide positive location of the support pin without interfering with chain saw movement.
- Ensure that the angle of the plane of the cutting attachment to the vertical plane is no larger than 10°.

See Figure D.1.



#### Key

- |                      |                         |
|----------------------|-------------------------|
| 1 front support      | 4 rear handle           |
| 2 front handle       | 5 pivot axis            |
| 3 steel support pin  | 6 guide bar centre line |
| a Centre of gravity. |                         |

Figure D.1 — Principle set-up for balance test