
**Machinery for forestry — Feller-
bunchers — Terms, definitions and
commercial specifications**

*Matériel forestier — Abatteuses-groupeuses — Termes, définitions et
spécifications commerciales*

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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).

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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 15, *Machinery for forestry*.

This second edition cancels and replaces the first edition (ISO 13862:2000), which has been technically revised.

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

- added a new terminological entry for feller-buncher;
- moved ISO 6814 to the Bibliography;
- deleted the terms "right hand", "left hand", "front" and "rear";
- revised [Clause 4](#) to explicitly state the required information;
- updated [Figure A.1](#);
- moved figures to a new informative [Annex A](#);
- applied editorial changes.

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.

Machinery for forestry — Feller-bunchers — Terms, definitions and commercial specifications

1 Scope

This document specifies terminology and required information as a general framework for identifying and describing the main dimensions and features of feller-bunchers.

It is applicable to tracked and wheeled feller-bunchers.

NOTE The terminology and requirements given in this document do not necessarily all apply to a specific machine. Machines can be characterized by the dimensions and features which are relevant to them.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

3.1 General terms

3.1.1

feller-buncher

self-propelled machine designed to fell standing trees and arrange them in bunches

[SOURCE: ISO 6814:2009, 2.3.2.2]

3.1.2

ground reference plane

GRP

hard, flat, horizontal surface on which the machine is placed for measurements

3.2 Terms related to masses

3.2.1

normal operating mass

total mass of the machine as specified, fully serviced, with full fluid levels and a 75 kg operator

3.2.2

maximum operating mass

total mass of the machine as specified, fully serviced, with full fluid levels and a 75 kg operator, including all machine options with either the heaviest undercarriage and track combination or the largest tyre/hydro-inflation combination and the manufacturer's maximum specified load

3.2.3

axle load

load on each axle at *normal operating mass* (3.2.1) or *maximum operating mass* (3.2.2)

3.3 Terms related to main machine dimensions

3.3.1

total frame length

l_1

horizontal distance between the vertical planes perpendicular to the longitudinal axis passing through the farthest points on the front and rear of the machine, felling head excluded

Note 1 to entry: See [Figure A.1](#) and [Figure A.2](#).

3.3.2

overall length

l_2

horizontal distance from a vertical plane touching the rearmost point of the machine to a vertical plane touching the forwardmost point of the felling head with the *levelling mechanism* (3.5.1), if equipped, parallel to the *ground reference plane* (3.1.2) and the felling head positioned on the ground reference plane at maximum reach

Note 1 to entry: See [Figure A.1](#) and [Figure A.2](#).

3.3.3

wheelbase

length of track on ground

l_3

horizontal distance from the centre of the front axle or front idler axis to the centre of the rear axle or rearmost sprocket or idler axis

Note 1 to entry: See [Figure A.1](#) and [Figure A.2](#).

3.3.4

overall height

h_1

vertical distance between the *ground reference plane* (3.1.2) and a horizontal plane passing through the highest point of the machine with the levelling table, if equipped, parallel to the ground reference plane and the felling head positioned as described in 3.3.2

Note 1 to entry: See [Figure A.1](#) and [Figure A.2](#).

3.3.5

ground clearance

h_2

vertical distance from the *ground reference plane* (3.1.2) to the lowest point of the machine centre portion, i.e. 25% of the *tread* (3.3.8) to either side of the longitudinal centreline

Note 1 to entry: See [Figure A.1](#) and [Figure A.2](#).

3.3.6

ground clearance at articulation joint

h_3

vertical distance from the *ground reference plane* (3.1.2) to the lowest point at the articulation joint

Note 1 to entry: See [Figure A.1](#).

3.3.7**overall width** w_1

horizontal distance between two vertical planes parallel to the longitudinal axis of the machine and passing through the farthest points on the two sides of this axis with the felling head positioned as described in [3.3.2](#)

Note 1 to entry: See [Figure A.1](#) and [Figure A.2](#).

3.3.8**tread** w_2

horizontal distance between two parallel vertical planes passing through the centreline of the tires on an axle or the mid-width of the sprocket teeth on a tracked machine

Note 1 to entry: See [Figure A.1](#) and [Figure A.2](#).

3.3.9**loaded tire radius** r_1

vertical distance from the *ground reference plane* ([3.1.2](#)) to the horizontal centre of the axle with the machine at *normal operating mass* ([3.2.1](#))

Note 1 to entry: See [Figure A.1](#).

3.3.10**angle of articulation** a_1

maximum angle of frame steering movement from the straight-ahead position between longitudinal centrelines of the front and rear frames, measured in degrees

Note 1 to entry: See [Figure A.1](#).

3.3.11**minimum swing circle** d_1

smallest diameter that the outermost point on the machine or felling head will describe when the turntable and/or booms and felling head are swung to their limits with the felling head in its normal swing position and as close to the machine as possible without making contact with a non-rotating structural member

Note 1 to entry: See [Figure A.2](#).

3.3.12**tail swing radius** r_2

maximum described radius from the centre line of rotation to the outermost point of the upper structure with the levelling table, if equipped, parallel to the *ground reference plane* ([3.1.2](#))

Note 1 to entry: See [Figure A.2](#).

3.3.13**clearance circle** d_2

diameter of the smallest circle that the outermost point on the machine will describe when turning, brakes unapplied, felling head at ground level

Note 1 to entry: See [Figure A.1](#).

**3.3.14
longitudinal tilt**

a_2, a_3

<upper structure> maximum angle that the *levelling mechanism* (3.5.1) is capable of levelling the upper structure in the forward and rearward directions, measured in degrees

Note 1 to entry: a_2 = forward tilt; a_3 = rearward tilt.

Note 2 to entry: See [Figure A.2](#).

**3.3.15
side tilt**

a_4, a_5

<upper structure> maximum angle that the *levelling mechanism* (3.5.1) is capable of levelling the upper structure to the left and to the right in a plane perpendicular to the longitudinal centreline of the machine, measured in degrees

Note 1 to entry: a_4 = tilt to the left; a_5 = tilt to the right.

Note 2 to entry: See [Figure A.2](#).

3.4 Terms for felling head dimensions

**3.4.1
minimum stump height**

hh_1

vertical distance from bottom of the felling head to the bottom of the tree cutting edge

Note 1 to entry: See [Figure A.1](#) and [Figure A.2](#).

**3.4.2
machine cutting depth**

hh_2

maximum vertical distance below the *ground reference plane* (3.1.2) to a horizontal plane through the bottom of the cutting edge when the vertical tree centreline of the felling head is perpendicular to the ground reference plane

Note 1 to entry: See [Figure A.1](#) and [Figure A.2](#).

**3.4.3
maximum cutting height**

hh_3

maximum vertical distance above the *ground reference plane* (3.1.2) through the bottom of the cutting edge when the vertical tree centreline of the felling head is perpendicular to the ground reference plane

Note 1 to entry: See [Figure A.1](#) and [Figure A.2](#).

**3.4.4
longitudinal tilt**

aa_1, aa_2

<felling head> maximum angle that the *felling head vertical tree centreline* (3.5.3) tilts forward or rearward about the *felling head pivot* (3.5.4), with the felling head positioned on the *ground reference plane* (3.1.2) at maximum reach, measured in degrees

Note 1 to entry: aa_1 = forward tilt; aa_2 = rearward tilt.

Note 2 to entry: See [Figure A.1](#) and [Figure A.2](#).

3.4.5**side tilt** aa_3, aa_4

<felling head> maximum angle that the felling head rotates to the left and to the right in a plane perpendicular to the longitudinal centreline of the machine with the booms and felling head positioned on or parallel to the longitudinal centreline, measured in degrees

Note 1 to entry: aa_3 = tilt to the left; aa_4 = tilt to the right.

Note 2 to entry: See [Figure A.2](#).

3.4.6**cutting distance** ll_1, ll_2, ll_3, ll_4

horizontal distance from the boom mast axis of rotation, or the turn table axis of rotation, or the front axle to the *felling head vertical tree centreline* (3.5.3) when the vertical tree centreline is perpendicular to the *ground reference plane* (3.1.2):

- ll_1 with the felling head on the ground reference plane and at its minimum distance from the machine;
- ll_2 with the felling head on the ground reference plane and at its maximum distance from the machine;
- ll_3 with the felling head at its maximum distance above the ground reference plane;
- ll_4 with the felling head at its maximum distance below the ground reference plane.

Note 1 to entry: See [Figure A.1](#) and [Figure A.2](#).

3.4.7**boom rotation** aa_5

maximum rotation of boom from the longitudinal centreline of the machine, measured in degrees

Note 1 to entry: See [Figure A.2](#).

3.5 Other definitions**3.5.1****levelling mechanism**

mechanism or linkage between the undercarriage and the upper structure whose function is to maintain the upper structure in a horizontal plane irrespective of the angle of the undercarriage within the machine operating limits

3.5.2**maximum tree diameter**

largest tree diameter that the machine is designed to fell in a single cut

3.5.3**felling head vertical tree centreline**

vertical centreline of the largest diameter tree the felling head is designed to cut

3.5.4**felling head pivot**

pinned connection between the felling head and the carrier or boom structure

4 Required information

For identifying and describing the main dimensions and features of feller-bunchers, the following information shall be supplied where appropriate (see examples in [Annex A](#)):

- normal operating mass ([3.2.1](#));
- maximum operating mass ([3.2.2](#));
- axle load ([3.2.3](#)) (only for wheeled feller-bunchers);
- total frame length ([3.3.1](#));
- overall length ([3.3.2](#));
- wheelbase ([3.3.3](#));
- overall height ([3.3.4](#));
- ground clearance ([3.3.5](#));
- ground clearance at articulation joint ([3.3.6](#));
- overall width ([3.3.7](#));
- tread ([3.3.8](#));
- loaded tire radius ([3.3.9](#));
- angle of articulation ([3.3.10](#));
- minimum swing circle ([3.3.11](#));
- tail swing radius ([3.3.12](#));
- clearance circle ([3.3.13](#));
- longitudinal tilt ([3.3.14](#));
- side tilt ([3.3.15](#));
- minimum stump height ([3.4.1](#));
- machine cutting depth ([3.4.2](#));
- maximum cutting height ([3.4.3](#));
- longitudinal tilt ([3.4.4](#));
- side tilt ([3.4.5](#));
- cutting distance ([3.4.6](#));
- boom rotation ([3.4.7](#));
- maximum tree diameter ([3.5.2](#)).

In addition, the following information shall be supplied where appropriate:

- tyre size;
- ply rating;
- inflation pressure;

- possible hydro-inflation;
- unequal front/rear or left/right for asymmetrical dimensions, such as tread ([3.3.8](#)), angle of articulation ([3.3.10](#)), boom rotation ([3.4.7](#)).

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Annex A (informative)

Examples of dimensions and features

[Figures A.1](#) and [A.2](#) give examples of dimensions and features defined in [Clause 3](#). The figures are for illustrative purposes only and are not intended to depict specific machines.

All dimensions are with the axles parallel, unless otherwise specified.

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