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Machinery for forestry — Wheeled skidders — Terms, definitions and commercial specifications

Matériel forestier — Débusqueuses à roues — Termes, définitions et spécifications commerciales

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Foreword

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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 13861:2000), which has been technically revised.

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

— added a new terminological entry for "skidder";

— 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 Figures A.1 and A.4;

— moved the 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.

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Machinery for forestry — Wheeled skidders — 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 wheeled skidders.

It is applicable to articulated wheeled cable and grapple skidders.

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
skidder
self-propelled machine designed to transport trees or parts of trees by trailing or dragging

[SOURCE: ISO 6814:2009, 2.3.1.15]

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 the largest tyre or hydro-inflation combination and the manufacturer's maximum specified load

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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, including fenders, tow bars, butt plate, etc., but excluding the fairlead, blade, or grapple

Note 1 to entry: See Figure A.1.

3.3.2
overall length
l_2
horizontal distance from a vertical plane touching the forwardmost point of the machine, blade positioned to give maximum forward reach, to a vertical plane touching the rearmost point of the machine

Note 1 to entry: See Figure A.1.

3.3.3
wheelbase
l_3
horizontal distance from the centre of the front axle or front bogie axle assembly to the centre of the rear axle or rear bogie axle assembly when both axles are perpendicular to the longitudinal axis

Note 1 to entry: See Figure A.1.

3.3.4
articulation joint to maximum blade arc
l_4
horizontal distance from the centreline of the articulation joint to a vertical line tangent to the arc of the blade's lower edge as it passes from its maximum height h_3 to the lowest blade position h_4

Note 1 to entry: See Figure A.1.

3.3.5
articulation joint to front of machine
l_5
horizontal distance from the centreline of the articulation joint to a vertical plane touching the farthest point forward, blade excluded

Note 1 to entry: See Figure A.1.

3.3.6
articulation joint to front axle
l_6
horizontal distance from the centreline of the articulation joint to the centre of the front axle or front bogie axle assembly

Note 1 to entry: See Figure A.1.

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3.3.7
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

Note 1 to entry: See Figure A.1.

3.3.8
blade height
h_2
vertical distance from the lower edge, resting on the *ground reference plane* (3.1.2), to the top of the blade, decking lugs excluded

Note 1 to entry: See Figure A.1.

3.3.9
maximum blade lift of lower edge
h_3
maximum vertical height to which the lower edge of the blade can be raised from the *ground reference plane* (3.1.2)

Note 1 to entry: See Figure A.1.

3.3.10
lowest blade position
h_4
vertical distance from the *ground reference plane* (3.1.2) to the blade's lower edge with blade at its lowest position

Note 1 to entry: See Figure A.1.

3.3.11
ground clearance
h_5
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* (3.3.19) to either side of the longitudinal centreline

Note 1 to entry: See Figure A.2.

3.3.12
ground clearance at articulation joint
h_6
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.

3.3.13
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.

3.3.14
main fairlead roller height
h_7
vertical distance from the horizontal centre of the main fairlead roller to the horizontal centre of the axle

Note 1 to entry: See Figure A.1.

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3.3.15
winch height
h_8
vertical distance from the horizontal centre of the winch drum to the horizontal centre of the axle

Note 1 to entry: See Figure A.1.

3.3.16
rear axle to main fairlead roller
l_7
horizontal distance from the vertical centre of the rear axle to the vertical centre of the main fairlead roller

Note 1 to entry: See Figure A.1.

3.3.17
main fairlead roller diameter
d_1
diameter of main fairlead roller at its mid-length position

Note 1 to entry: See Figure A.1.

3.3.18
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

Note 1 to entry: See Figure A.2.

3.3.19
tread
w_2
horizontal distance between two parallel vertical planes passing through the centreline of the tires on an axle

Note 1 to entry: See Figure A.2.

3.3.20
frame oscillation
a_1
angle that one frame will rotate from a horizontal datum, in both directions, without rotating the other frame, measured in degrees

Note 1 to entry: See Figure A.2.

3.3.21
axle oscillation
a_2
angle that one axle will rotate from a horizontal datum, in both directions, without rotating either frame, measured in degrees

Note 1 to entry: See Figure A.2.

3.3.22
clearance circle
d_2
diameter of the smallest circle that the outermost point on the machine will describe when turning, brakes unapplied, blade in travel position, unloaded

Note 1 to entry: See Figure A.3.

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3.3.23
angle of articulation
a_3
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.3.

3.3.24
blade width
w_3
horizontal distance between the outer edges of the blade

Note 1 to entry: See Figure A.3.

3.4 Terms related to grapple dimensions

3.4.1
grapple reach
ll_1, ll_2, ll_3, ll_4
horizontal distance from the vertical centre of the rear axle to the vertical centre of the grapple pivot under the following conditions:

— ll_1 with the pivot in the highest, fully extended position;

— ll_2 with the pivot in the lowest, fully extended position;

— ll_3 with the pivot in the highest, fully retracted position;

— ll_4 with the pivot in the lowest, fully retracted position

Note 1 to entry: See Figure A.4.

3.4.2
grapple lift
hh_1, hh_2, hh_3, hh_4
vertical distance from the horizontal centre of the rear axle to the horizontal centre of the grapple pivot under the following conditions:

— hh_1 with the pivot in the highest, fully retracted position;

— hh_2 with the pivot in the highest, fully extended position;

— hh_3 with the pivot in the lowest, fully retracted position;

— hh_4 with the pivot in the lowest, fully extended position

Note 1 to entry: See Figure A.4.

3.4.3
boom rotation
aa_1
angle in degrees from the longitudinal axis of the machine to the longitudinal centre of the boom at maximum swing position

Note 1 to entry: See Figure A.4.

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3.4.4
rear axle to main swing boom pivot
ll_5
horizontal distance from the vertical centre of the rear axle to the vertical centre of the main *swing boom* (3.5.3) pivot

Note 1 to entry: See Figure A.4.

3.4.5
grapple height
hh_5, hh_6, hh_7
vertical distance from the centre of the upper pivot to the lowest point of the grapple arms under the following conditions:

— hh_5 with the grapple fully open;

— hh_6 with the grapple in tip-to-tip position;

— hh_7 with the grapple fully closed

Note 1 to entry: See Figure A.5.

3.4.6
maximum grapple opening
ll_6
horizontal distance between the tips of the grapple arms the grapple fully open

Note 1 to entry: See Figure A.5.

3.4.7
area of grapple opening
A
cross-sectional area of the grapple opening in the tip-to-tip position

Note 1 to entry: See Figure A.5.

3.4.8
minimum log size
dd_1
smallest diameter of log which the grapple can hold in a fully closed position

Note 1 to entry: See Figure A.5.

3.4.9
grapple rotation
number of degrees through which the grapple can rotate

3.5 Terms related to grapple configurations

3.5.1
single function
configuration in which the grapple support assembly consists of a single arch and a pair of hydraulic cylinders allowing the grapple pivot to move through a fixed arc

3.5.2
dual function
configuration in which the grapple support assembly consists of a boom, arch, and two sets of hydraulic cylinders allowing the grapple pivot to describe a range of motion in a vertical longitudinal plane

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3.5.3
swing boom
configuration in which the grapple support consists of a boom assembly which allows both horizontal and vertical grapple movement

3.6 Terms related to butt plate dimensions

3.6.1
rear axle to butt plate
ll_7
horizontal distance from the centre of the rear axle to the rearward face of the butt plate

Note 1 to entry: See Figure A.6.

3.6.2
length of load support
ll_8
horizontal distance from the rearward face of the butt plate to the rearmost edge of the load support

Note 1 to entry: See Figure A.6.

3.6.3
lowest butt plate position
hh_8
vertical distance from the *ground reference plane* (3.1.2) to the lowest edge of the butt plate with the butt plate fully lowered

Note 1 to entry: See Figure A.6.

4 Required information

For identifying and describing the main dimensions and features of wheeled skidders, 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);

— total frame length (3.3.1);

— overall length (3.3.2);

— wheelbase (3.3.3);

— articulation joint to maximum blade arc (3.3.4);

— articulation joint to front of machine (3.3.5);

— articulation joint to front axle (3.3.6);

— overall height (3.3.7);

— blade height (3.3.8);

— maximum blade lift of lower edge (3.3.9);

— lowest blade position (3.3.10);

— ground clearance (3.3.11);

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