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Machinery for forestry — Portable chain-saws — Vocabulary

Matériel forestier — Scies à chaîne portatives — Vocabulaire

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Contents

Page

Foreword

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This document was prepared by Technical Committee ISO/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 6531:2008), which has been technically revised, with the following main changes:

— terms and definitions 3.1.7, 3.3.1, 3.4.1.1, 3.5.7, 3.9.10, 3.9.10.1, 3.9.10.2, 3.9.10.3 and 3.9.11 have been added.

Machinery for forestry — Portable chain-saws — Vocabulary

1 Scope

This document defines terms relating to the mechanical aspects of portable chain-saws, saw-chain and guide bars.

The chain-saw positions are shown in Annex A.

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 terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1 Work functions

3.1.1
felling
separation of a standing tree from its root system

3.1.2
delimbing
removal of branches from trees or parts of trees

3.1.3
bucking
slashing
cutting of felled or uprooted trees, or parts of trees, into lengths

3.1.4
splitting
dividing of trees or parts of trees longitudinally into pieces

3.1.5
boring
process of cutting with the *saw-chain* (3.3.1) at the nose (tip) of the *guide bar* (3.3.5) in order to make a hole

3.1.6
kickback
rapid upward and backward motion of the saw which can occur when the moving *saw-chain* (3.3.1) near the upper portion of the tip of the *guide bar* (3.3.5) contacts an object such as a log or branch

3.1.7
pinch kickback
rapid pushback of the chain saw that can occur when the wood closes in and pinches the moving *saw-chain* (3.3.1) in the cut along the top of the *guide bar* (3.3.5)

3.1.8
pruning
removal of live or dead branches, or of multiple leaders of shoots, from standing trees

3.2 Types of chain-saws

3.2.1
chain-saw
power-driven tool designed to cut wood with a *saw-chain* (3.3.1) and consisting of an integrated compact unit of handles, power source, *guide bar* (3.3.5) and saw-chain, designed to be supported with two hands

3.2.1.1
chain-saw for forest service
chain-saw designed for forest work such as *felling* (3.1.1), *delimbing* (3.1.2) and *bucking* (3.1.3)

Note 1 to entry: See Figure 1.

3.2.1.2
chain-saw for tree service
specialized chain-saw of limited mass, designed for use by a trained operator for *pruning* (3.1.8) and dismantling standing tree crowns

Note 1 to entry: See Figure 2.

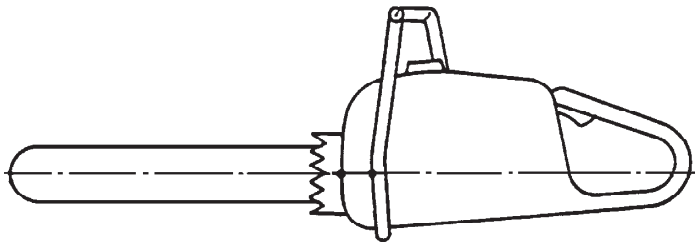


Figure 1 — Chain-saw for forest service

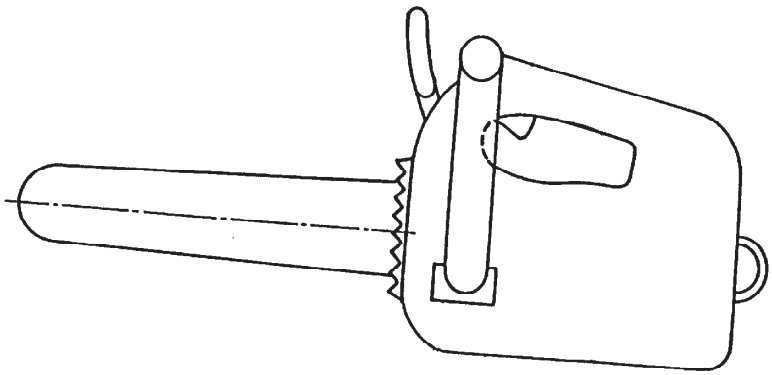


Figure 2 — Chain-saw for tree service

3.3 Cutting equipment

3.3.1
saw-chain
chain serving as a cutting tool, consisting of drive links, cutters and side links held together by rivets

Note 1 to entry: See Figure 3 and Figure 4.

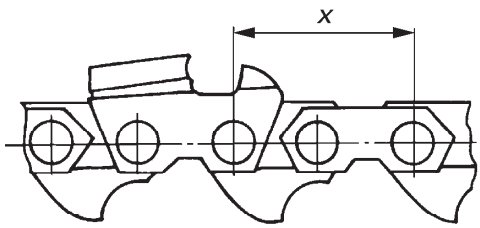
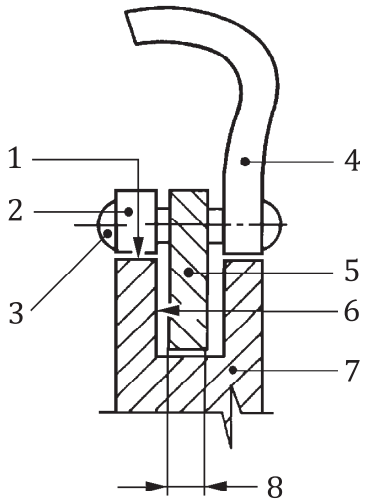


Figure 3 — Part of saw-chain



Key
1 guide bar rail
2 side-link
3 rivet
4 cutter
5 drive link
6 guide bar groove
7 guide bar
8 chain gauge

Figure 4 — Saw-chain and guide bar details

3.3.2
chain guides
plates or guides fitted on one or both sides of the *guide bar* (3.3.5) where the *saw-chain* (3.3.1) enters the groove, for assisting in guiding the saw-chain between the *drive sprocket* (3.3.3) and the guide bar

3.3.3
drive sprocket
part that transmits rotational motion from the *chain-saw* (3.2.1) power source to the *saw-chain* (3.3.1)

3.3.3.1
rim sprocket
drive sprocket (3.3.3) with rims on which the side and cutter links run

3.3.3.2
spur sprocket
drive sprocket (3.3.3) in which the drive links run and the side and cutter links are supported

3.3.4
nose sprocket
rotating part at the tip of the *guide bar* (3.3.5) which supports the *saw-chain* (3.3.1) around the tip

3.3.5
guide bar
part that supports and guides the *saw-chain* (3.3.1)

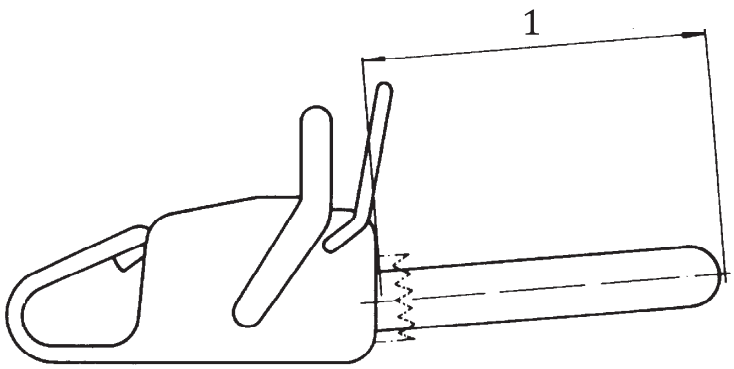
3.3.6
chain pitch
arithmetic mean of the distances between three adjacent rivets

Note 1 to entry: See x in Figure 3.

3.3.7
cutting length
<chain-saw without fixed spiked bumper> approximate length of cut a chain-saw will make with the *chain tension adjuster* (3.5.1) set at mid-position.

Note 1 to entry: The length is generally expressed in terms of the nearest whole unit of measure.

Note 2 to entry: See Figure 5.

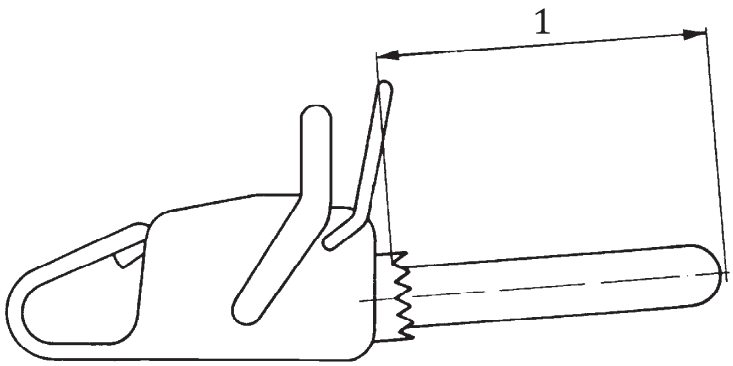


Key
1 cutting length

Figure 5 — Cutting length — Saw with removable or no spiked bumper

3.3.8
cutting length
<chain-saw with permanently fixed spiked bumper> distance from the root (base) of the spiked bumper, along the guide bar axis, to the outside edge of the cutter, or on, if applicable, the inside part of the *bar tip guard* (3.4.3) with the *chain tension adjuster* (3.5.1) set at mid-position

Note 1 to entry: See Figure 6.



Key

1 cutting length

Figure 6 — Cutting length — Saw with fixed spiked bumper

3.4 Safety devices

3.4.1
chain brake
device for stopping or locking the *saw-chain* (3.3.1), activated manually or non-manually when *kickback* (3.1.6) occurs

3.4.1.1
manually activated chain brake
brake which is intended to be actuated by the hand of the operator

3.4.1.2
non-manually activated chain brake
brake which is actuated irrespective of operator intervention when a *kickback* (3.1.6) occurs

3.4.2
chain brake lever
device, usually the front hand-guard used to activate the *chain brake* (3.4.1)

3.4.2.1
front hand-guard
structural barrier between the *front handle* (3.7.1) of the *chain-saw* (3.2.1) and the *saw-chain* (3.3.1) for protecting the hand from injury if the hand slips off the handle, and may also be the device used to activate the *chain brake* (3.4.1)

3.4.3
bar tip guard
shield that prevents contact with the *saw-chain* (3.3.1) at the tip of the *guide bar* (3.3.5), which may be removable and replaceable, for reducing the incidence of rotational *kickback* (3.1.6)

3.4.4
chain catcher
device for restraining the *saw-chain* (3.3.1) if it breaks or comes off the *guide bar* (3.3.5)

3.4.5
clutch cover
protective cover for the *clutch* (3.9.1) and/or the *drive sprocket* (3.3.3)

3.4.6
rear hand-guard
structural barrier at the bottom right side of the *rear handle* (3.7.2) of the *chain-saw* (3.2.1) for protecting the hand from the *saw-chain* (3.3.1) if the saw-chain breaks or comes off the *guide bar* (3.3.5)

3.4.7
stop switch
device which initiates the stopping of the power source

3.4.8
throttle trigger lockout
device that prevents operation of the *throttle trigger* (3.5.8) without intentional manual intervention

3.4.9
guide bar cover
device covering the *saw-chain* (3.3.1) on the *guide bar* (3.3.5) during transportation or storage of the machine

3.5 Control system

3.5.1
chain tension adjuster
device, often acting on the *guide bar* (3.3.5), for adjusting the saw-chain tension

3.5.2
choke
device for enriching the fuel/air mixture in the carburettor to aid starting

3.5.3
decompression valve
device for lowering the compression in the cylinder to aid starting

3.5.4
manual oiler
manually operated pump to deliver oil to the *guide bar* (3.3.5) and the *saw-chain* (3.3.1)

3.5.5
chain oil flow adjuster
device for adjusting the delivery of saw-chain oil to the *guide bar* (3.3.5) and the *saw-chain* (3.3.1)

3.5.6
primer
device for supplying fuel to the pump of the carburettor to aid starting

3.5.7
throttle control latch
device to temporarily set the throttle in a partially open position to aid in starting

3.5.8
throttle trigger
device, usually a lever, activated by the operator's hand or finger, for controlling the engine speed and/or power

3.5.9
recoil starter
device for starting the engine by pulling a rewind rope which automatically rewinds when released

3.5.10
electric starter
device that rotates the engine crank shaft using external power, such as battery or mains, for starting

3.6 Carburettor setting

3.6.1
idle-speed adjuster
device, normally a screw, acting on the throttle, for adjusting the *idling speed* (3.9.7)

3.6.2
low-speed mixture adjuster
device, normally a screw, for adjusting fuel delivery at *idling speed* (3.9.7)

3.6.3
high-speed mixture adjuster
device, normally a screw, for adjusting fuel delivery at full throttle

3.7 Handles

3.7.1
front handle
support handle located at, or toward the front of the *chain-saw* (3.2.1), and intended to be gripped by the left hand

3.7.2
rear handle
support handle located at, or toward the rear of the *chain-saw* (3.2.1), and intended to be gripped by the right hand

3.7.3
wrap around handle
special type of *front handle* (3.7.1) allowing the *chain-saw* (3.2.1) to be used also in the right side up (RSU) position

Note 1 to entry: See Annex A.

3.8 Exhaust system

3.8.1
exhaust system
part(s) used to contain and direct gas from the cylinder exhaust port to the atmosphere, including all directly attached shields for hot surface contact prevention

3.8.1.1
muffler
silencer
device for reducing engine exhaust noise and directing the exhaust gases

3.8.1.2
spark arrester
device through which the exhaust gases pass, intended to stop smouldering/burning particles

3.9 Miscellaneous

3.9.1
clutch
device for connecting and disconnecting a driven member to and from a rotating source of power

3.9.2
felling sight
mark on the *chain-saw* (3.2.1) to aid felling of a tree in a desired direction

3.9.3
heated handle
handle equipped with a device which allows it to be heated, for example, by exhaust gases or electricity

3.9.4
power head
chain-saw (3.2.1) without the *guide bar* (3.3.5) and *saw-chain* (3.3.1)

3.9.5
spiked bumper
device fitted in front of the mounting point of the *guide bar* (3.3.5) acting as a pivot when it is in contact with a tree or log

3.9.6
attachment point
suspension point located behind or within the *rear handle* (3.7.2), which allows for the attachment of a safety strap, carabiner or rope, as appropriate

3.9.7
idling speed
engine speed at which the *saw-chain* (3.3.1) does not move

Note 1 to entry: A range of idling speeds is normally identified by the chain-saw manufacturer and stated in the instruction handbook.

3.9.8
maximum power speed
full-load speed
engine speed at which maximum corrected brake power is obtained

Note 1 to entry: The maximum power speed is obtained in accordance with ISO 7293[1].

3.9.9
racing speed
maximum engine speed achieved at full open throttle or the engine speed at 133 % of the *maximum power speed* (3.9.8), whichever is lesser

3.9.10
computed kickback angle
CKA
angle calculated by a mathematical simulation that describes the peak bar nose position when a handheld *chain-saw* (3.2.1) is subjected under simulated conditions to a rotational *kickback* (3.1.6) impulse

Note 1 to entry: See Figure 5.

3.9.10.1
computed kickback bar stopping angle with actuated chain brake
CKA wb
computer-derived value that computes the resultant CKA with *chain brake* (3.4.1) engaged

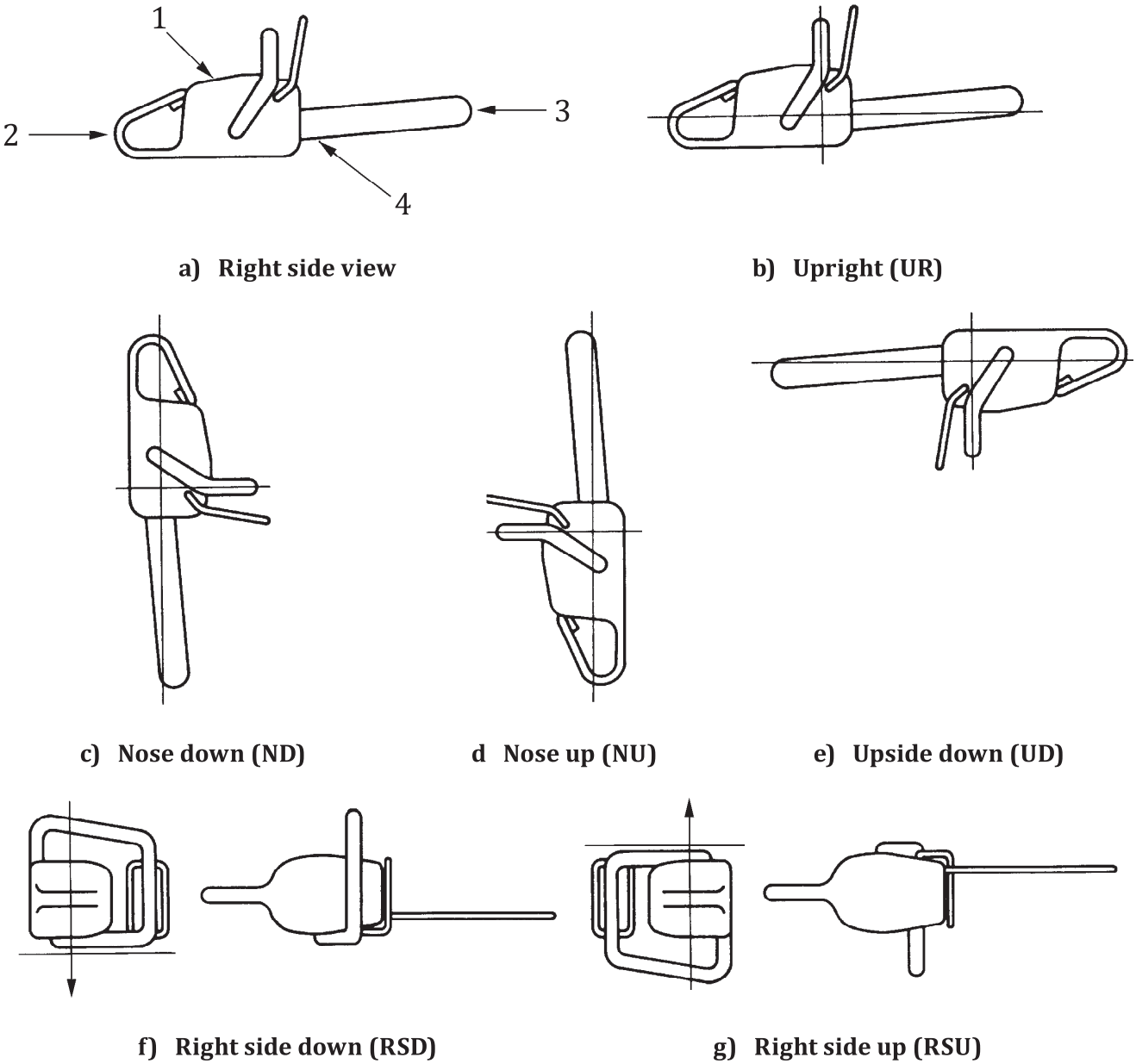
3.9.10.2
computed kickback bar stopping angle without actuated chain brake
CKA wob
computer-derived value that computes the resultant CKA without *chain brake* (3.4.1) engaged

3.9.10.3
computed kickback chain stopping angle
CKA cs
computer-derived value that computes the resultant CKA with *chain brake* (3.4.1) engaged at the point when the motion of the *saw-chain* (3.3.1) has stopped

3.9.11
kickback machine
apparatus used to measure the energy generated by a chain-saw kickback under controlled conditions

Annex A
(informative)

Chain-saw positions



a) Right side view

b) Upright (UR)

c) Nose down (ND)

d Nose up (NU)

e) Upside down (UD)

f) Right side down (RSD)

g) Right side up (RSU)

Key

1 top
2 rear
3 front
4 bottom

Figure A.1 — Chain-saw positions

Bibliography

[1] ISO 7293, *Forestry machinery — Portable chain saws — Engine performance and fuel consumption*

ICS 65.060.80; 01.040.65

Price code A