



**International
Standard**

ISO 6531

**Machinery for forestry — Portable
chain-saws — Vocabulary**

Matériel forestier — Scies à chaîne portatives — Vocabulaire

**Fifth edition
2024-10**

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Foreword

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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 document 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).

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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 (hand-held) powered lawn and garden equipment and forest machinery*.

This fifth edition cancels and replaces the fourth edition (ISO 6531:2017), which has been technically revised.

The main changes are as follows:

- the term "chain guides" (former 3.3.2) was removed and subsequent entries have been renumbered;
- new terms "bar nose radius" and "guide bar tip radius centre point" (3.3.5 and 3.3.6, respectively) have been added and subsequent entries have been renumbered;
- [Figure 5](#) has been added;
- former 3.4.2.1 (front hand-guard) has been renumbered to [3.4.3](#) and subsequent entries have been changed;
- the term "rear hand-guard" ([3.4.7](#)) has been modified for better understanding.

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 — 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, Figure A.1](#).

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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 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* ([3.3.4](#)) in order to make a hole

3.1.6

kickback

rapid upward and backward motion of the chain-saw which can occur when the moving *saw-chain* ([3.3.1](#)) near the upper portion of the tip of the *guide bar* ([3.3.4](#)) 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* ([3.3.4](#))

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* (3.3.4) 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](#).

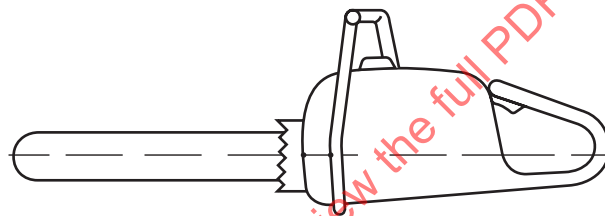


Figure 1 — Chain-saw for forest service

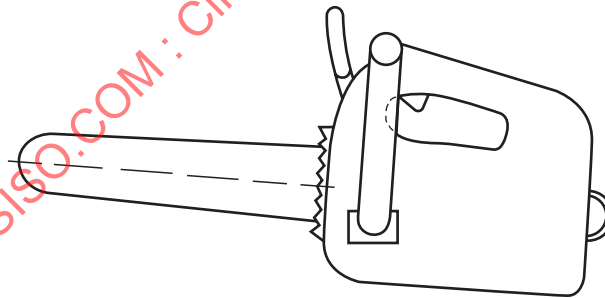


Figure 2 — Chain-saw for tree service

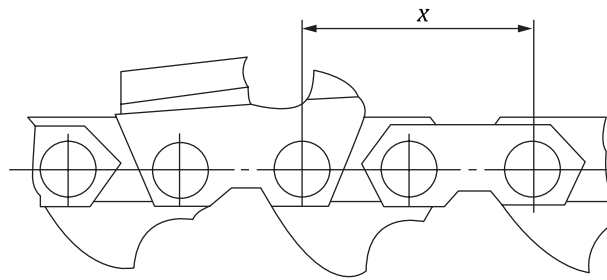
3.3 Cutting equipment

3.3.1

saw-chain

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

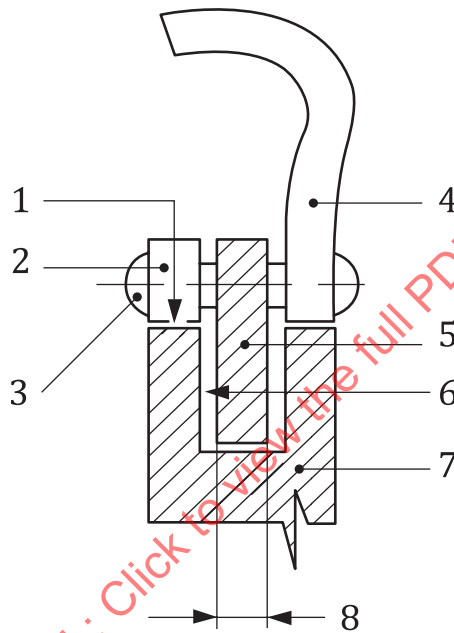
Note 1 to entry: See [Figure 3](#) and [Figure 4](#).



Key

x distance between three adjacent rivet centre points

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

drive sprocket

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

3.3.2.1

rim sprocket

drive sprocket (3.3.2) with rims on which the side and cutter links run

3.3.2.2

spur sprocket

drive sprocket (3.3.2) in which the drive links run and the side and cutter links are supported

3.3.3

nose sprocket

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

3.3.4

guide bar

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

3.3.5

bar nose radius

continuous radius formed on the top portion of the bar from the guide bar centreline to an angle 35° above centreline

Note 1 to entry: See [Figure 5](#).

3.3.6

guide bar tip radius centre point

part point determined by a continuous radius, in relation to the guide bar centre line and an angle of 35° to the guide bar centreline

Note 1 to entry: See [Figure 5](#).

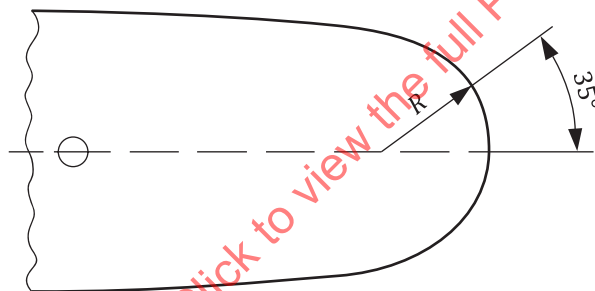


Figure 5 — Guide bar tip details

3.3.7

chain pitch

distance between three adjacent rivet centre points divided by 2

Note 1 to entry: See [Figure 3](#).

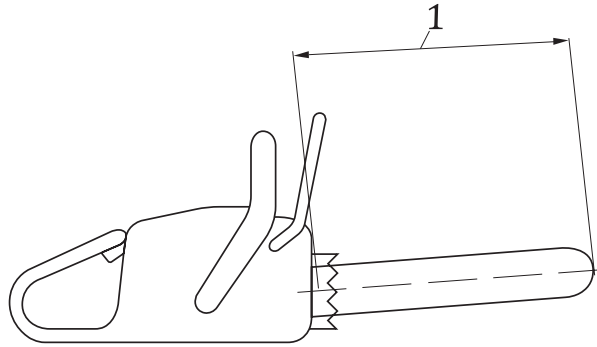
3.3.8

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 6](#).



Key

1 cutting length

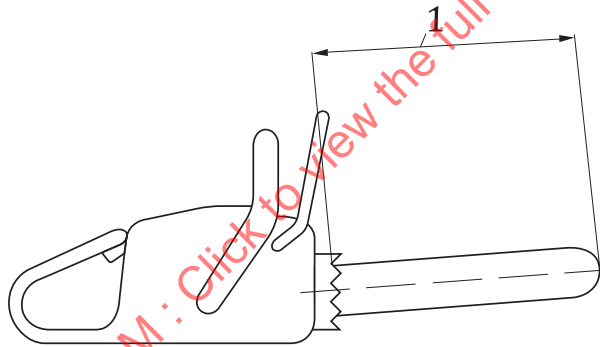
Figure 6 — Cutting length — Chain-saw with removable or no spiked bumper

3.3.9

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* (3.4.4) with the *chain tension adjuster* (3.5.1) set at mid-position

Note 1 to entry: See [Figure 7](#).



Key

1 cutting length

Figure 7 — Cutting length — Chain-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 actuated chain brake

brake which is intended to be actuated by the hand of the operator

3.4.1.2

non-manually actuated 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)

3.4.3

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)

3.4.4

bar tip guard

shield that prevents contact with the *saw-chain* (3.3.1) at the tip of the *guide bar* (3.3.4), which may be removable and replaceable, for reducing the incidence of rotational *kickback* (3.1.6)

3.4.5

chain catcher

device for restraining the *saw-chain* (3.3.1) if it breaks or comes off the *guide bar* (3.3.4)

3.4.6

clutch cover

protective cover for the *clutch* (3.9.1) and/or the *drive sprocket* (3.3.2)

3.4.7

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 mechanical hazards, such as a *saw-chain* (3.3.1), if it breaks or comes off the *guide bar* (3.3.4)

3.4.8

stop switch

device which initiates the stopping of the power source

3.4.9

throttle trigger lockout

device that prevents operation of the *throttle trigger* (3.5.10) without intentional manual intervention

3.4.10

guide bar cover

device covering the *saw-chain* (3.3.1) on the *guide bar* (3.3.4) during transportation or storage of the machine

3.5 Control system

3.5.1

chain tension adjuster

device, often acting on the *guide bar* (3.3.4), 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 lubricant to the *guide bar* (3.3.4) and the *saw-chain* (3.3.1)

3.5.5

chain lubricant flow adjuster

device for adjusting the delivery of saw-chain lubricant to the *guide bar* (3.3.4) 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 control linkage

connection link between the throttle trigger and the throttle

3.5.9

throttle control system

complete system including the *throttle trigger* ([3.5.10](#)), *throttle control linkage* ([3.5.8](#)), *throttle trigger lockout* ([3.4.9](#)) and, in some cases, a *throttle control latch* ([3.5.7](#))

3.5.10

throttle trigger

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

3.5.11

recoil starter

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

3.5.12

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* (3.3.4) and *saw-chain* (3.3.1)

3.9.5

spiked bumper

device fitted in front of the mounting point of the *guide bar* (3.3.4) 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

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

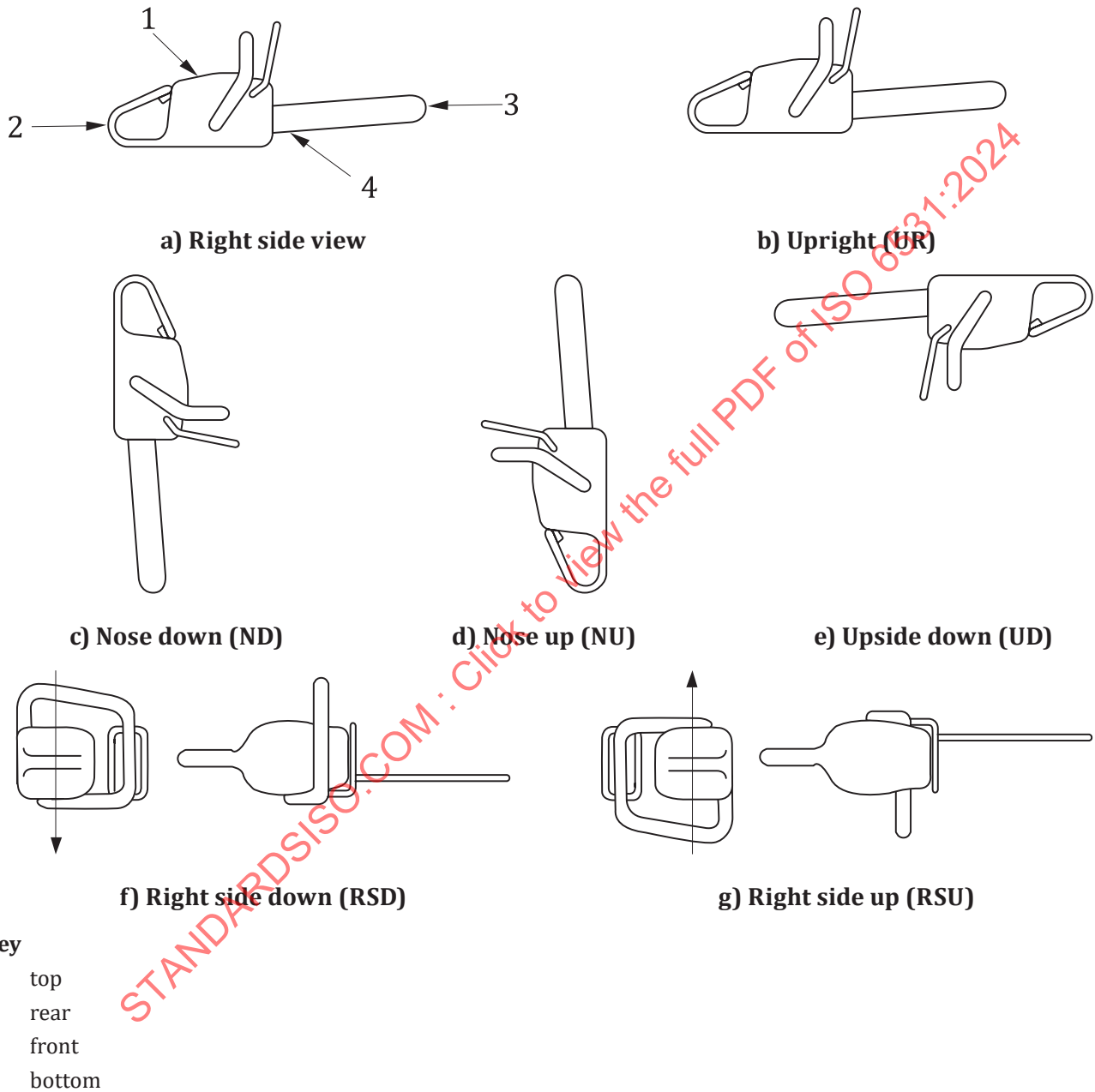


Figure A.1 — Chain-saw positions