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Indian Standard

GLOSSARY OF TERMS RELATING TO FORESTRY EQUIPMENT

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GLOSSARY OF TERMS RELATING TO FORESTRY EQUIPMENT

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0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 10 February 1986, after the draft finalized by the Forestry and Plantation Machinery Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 With the increasing emphasis on forestry, a large number of forestry equipment are being manufactured and used in the country. A need has, therefore, been felt for a glossary which would provide authentic definition of various terms associated with these equipment. It is hoped that this standard would fulfil this need.

0.3 In preparation of this standard, assistance has been derived from the following publications:

ISO 6531-1982 Machinery for forestry, portable chain saws, vocabulary. International Organization for Standardization.

ISO 6814-1983 Machinery for forestry, mobile and self-propelled machinery, identification vocabulary. International Organization for Standardization.

ISO 7112-1982 Machinery for forestry, portable brush saws, vocabulary. International Oraganization for Standardization.

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1. SCOPE

1.1 This standard covers terms and the definitions used in relation to forestry equipment.

2. TERMS RELATING TO FUNCTIONS

2.0 The primary functions of the forestry equipment are defined in **2.1** to **2.32**.

2.1 Bucking — Cross cutting felled or uprooted trees or parts of trees, into lengths (*see also* Fig. 1).

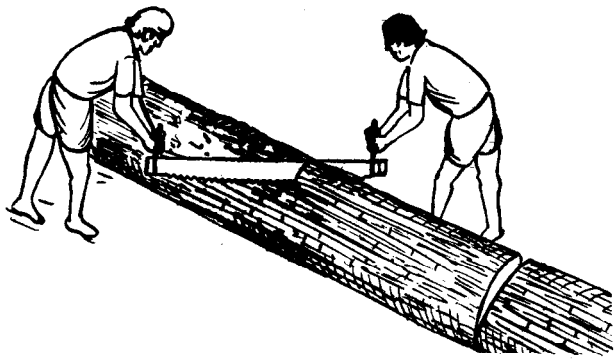


FIG. 1 BUCKING

2.2 Bunching — Gathering and arranging trees or parts of trees in bunches to facilitate loading and transportation.

2.3 Chipping — Converting logs or billets into small pieces for further processing.

2.4 Clearing — Removing unwanted logging residues, shrubs, trees and stumps.

2.5 Conversion — Transformation of natural timber into any kind of product.

2.6 Cross Cutting — (*see* **2.1**).

2.7 Debarking — Removing bark from trees or parts of trees (*see also* Fig. 2).

2.8 Debranching — Removing branches from trees or parts of trees.

2.9 Delimbing — (*see* **2.8**) and (*see* Fig. 3).

2.10 Dragging — (*see* **2.23**).

2.11 Felling — Cutting a standing stem above the root system.

2.12 Forwarding — Moving trees or parts of trees out of the forest by carrying them.

2.13 Loading — Picking up trees or parts of trees from the ground or from a vehicle and transferring them to and piling them on another vehicle.

FIG. 2 DEBARKING

FIG. 3 DELIMBING

2.14 Logging — Operation comprising felling of trees, limbing, bucking and transportation of the resulting product out of the forest.

2.15 Lopping — Cutting of branches from a standing tree.

2.16 Mulching — Applying a layer of organic matter on the surface of the soil.

2.17 Piling — Depositing trees or parts of trees in orderly piles.

2.18 Planting — Putting small trees or seedlings into the ground at their growing positions.

2.19 Ploughing — A primary tillage operation which is performed to cut, break and invert the soil partially or completely.

2.20 Pollarding — (*see* **2.30**).

2.21 Pruning — Removing of live or dead branches or multiple leaders, from standing trees for the improvement of the tree or its timber.

2.22 Scarifying — Preparing a site for regeneration by scarring the ground surface to penetrate the covering material and expose the soil underneath.

2.23 Skidding — Transporting trees or parts of trees by dragging.

2.24 Slashing — (*see* **2.1**).

2.25 Sliding — Downward transportation of timber along a predetermined path.

2.26 Sorting — Collecting similar items (for example, pieces of timber after bucking).

2.27 Splitting — Dividing trees or parts of trees longitudinally into pieces (*see also* Fig. 4).

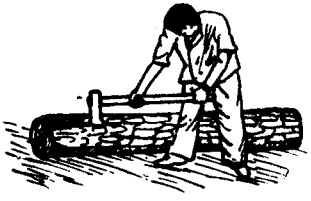


FIG. 4 SPLITTING

2.28 Stacking — Piling of timber in specified sizes.

2.29 Stump Lowering — Reducing the height of stumps.

2.30 Topping — Cutting off the top of a tree at a predetermined height.

2.31 Uprooting — Removing trees with the root systems from the ground.

2.32 Yarding — The operation of initial haul to a collecting point.

3. TERMS RELATING TO MACHINE TYPES

3.1 Single Function Machines

3.1.1 *Skidder* — Self-propelled machine designed to transport trees or parts of trees by dragging.

3.1.1.1 *Cable skidder* — Skidder that uses winch cable(s) (rope) (usually with chokers) to assemble and hold its load.

3.1.1.2 *Grapple skidder* — Skidder that uses a suspended grapple or bottom opening jaws to assemble and hold its load.

3.1.1.3 *Clam bunk skidder* — Skidder that uses an integrally mounted loader to assemble the load into an inverted grapple or top-opening jaws to hold its load.

3.1.2 *Forwarder* — Self-propelled machine, usually self-loading, designed to move trees or parts of trees by carrying them completely off the ground. Normally forwarders are used for off-road transportation.

3.1.3 *Feller* — Self-propelled machine designed to fell standing trees.

3.1.4 *Log Loader* — Self-propelled machine, with grapple and supporting structure designed to pick up and discharge trees or parts of trees for the purpose of piling or loading.

3.1.5 *Debarker* — Machine designed to remove bark.

3.1.6 *Delimber* — Machine designed to remove branches from trees.

3.1.7 *Chipper* — Machine designed to chip trees or parts of trees.

3.1.8 *Slasher* — Machine designed to cross cut felled trees to predetermined lengths.

3.1.9 *Yarder* — Machine designed to perform cable logging with the use of a tower which may be integral to the machine or a separate structure.

3.2 Multi-Function Machines

3.2.1 *Processor* — A multi-function machine which does not fell trees but performs two or more subsequent functions.

3.2.2 *Harvester* — A self-propelled multi-function machine which combines felling with other processing functions.

3.2.3 *Feller-Buncher* — Self-propelled machine designed to fell standing trees and arrange them in bunches on the ground.

3.2.4 *Feller-Skidder* — Self-propelled machine designed to fell standing trees and transport them by dragging.

3.2.5 *Feller-Forwarder* — Self-propelled, self-loading machine designed to fell standing trees and move the felled trees by carrying them.

4. TERMS RELATING TO PORTABLE CHAIN SAW

4.1 Work Operations

4.1.1 *Chain Saw Position* — The work position of chain saw is shown in Fig. 5.

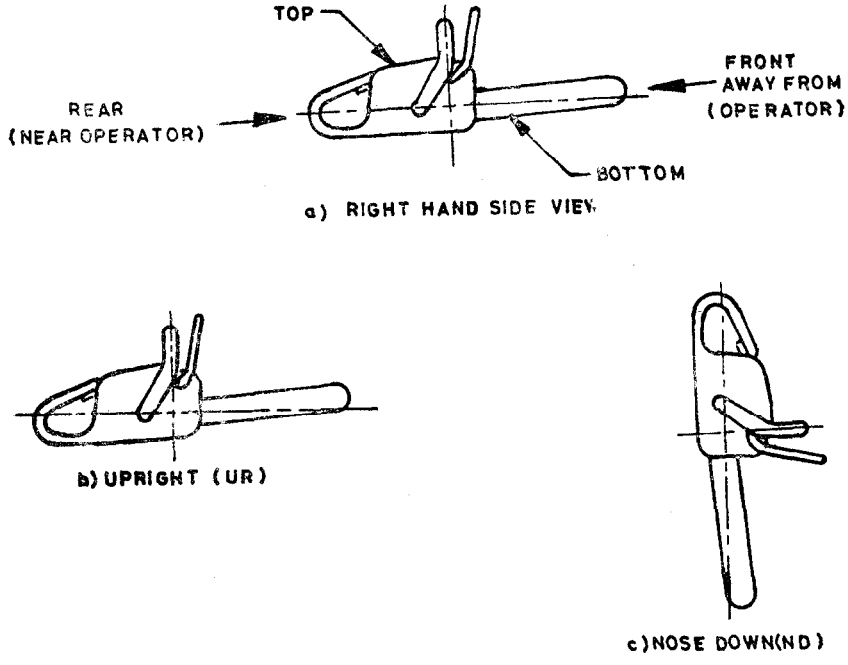
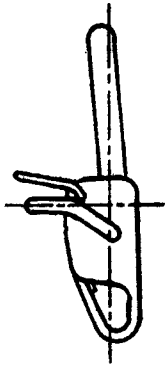
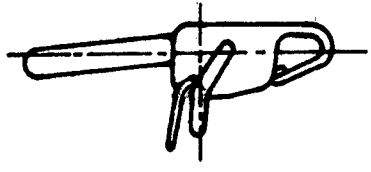


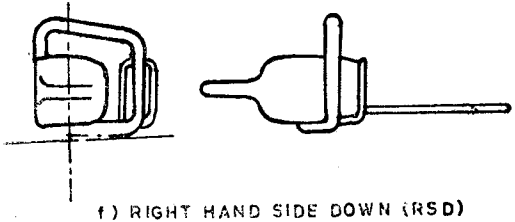
FIG. 5 CHAIN SAW POSITIONS (*Continued*)



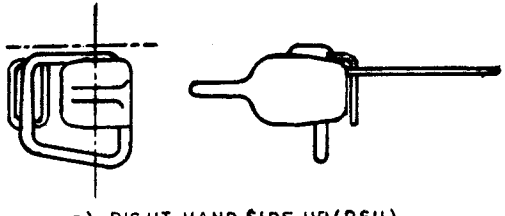
d) NOSE UP(NU)



e) UPSIDE DOWN (UD)



f) RIGHT HAND SIDE DOWN (RSD)



g) RIGHT HAND SIDE UP(RSU)

FIG. 5 CHAIN SAW POSITIONS

4.1.2 *Boring* — The process of cutting with the saw chain at the nose (tip) of the guide bar in order to make a hole. This is also known as straight-in-cut (*see* Fig. 6A and 6B).

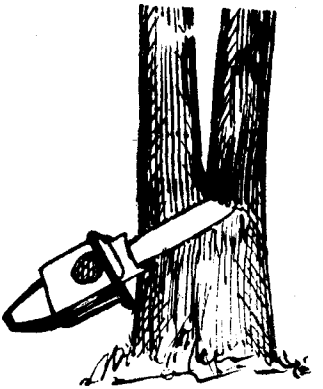


FIG. 6A STRAIGHT-IN-CUT

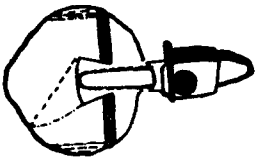


FIG. 6B STRAIGHT-IN-CUT (DETAILS)

4.1.3 *Kick-Back* — Uncontrolled (sudden and accidental) upward and/or backward motion of the guide bar which may occur when the saw chain at the nose (tip) of the guide bar contacts an object such as a log or branch or when the wood closes in and pinches the saw chain in the cut.

4.2 Control System

4.2.1 *Carburettor Setting**

4.2.1.1 *Idle speed adjuster* — Device, normally a screw, acting on the throttle, for adjusting the idle speed.

4.2.1.2 *Low speed mixer adjuster* — Device, normally a screw, for adjusting the fuel delivery at idling speed.

4.2.1.3 *High speed mixer adjuster* — Device, normally a screw, for adjusting the fuel delivery at full throttle.

*Applicable to IC engine saws.

4.2.2 *Chain Tension Adjuster* — Device acting on the guide bar for adjusting the chain tension.

4.2.3 *Choke** — Device for enriching the fuel air mixture in the carburettor, to aid starting.

4.2.4 *Decompression Valve** — Device for lowering the compression in the cylinder, to aid starting.

4.2.5 *Manual Oiler* — Manually operated pump delivering oil to the chain.

4.2.6 *Chain Oil Pump Adjuster* — Device for adjusting the delivery of chain oil from the chain oil pump to the guide bar and the chain.

4.2.7 *Ignition Switch* — Device for connecting and disconnecting the ignition system and thus allowing the engine to be started or stopped.

4.2.7.1 *On-off switch*† — Device for connecting and disconnecting the electric current and thus allowing the motor to be started or stopped.

4.2.8 *Primer** — Device for supplying extra fuel to aid starting.

4.2.9 *Throttle Lock** — Device for temporarily setting the throttle a partially open position, to aid starting.

4.2.10 *Throttle Trigger** — (*Trigger*†) — Device, usually a lever, activated by the operator's hand or finger, for controlling the engine speed.

4.3 Handles

4.3.1 *Front Handle* — Support handle located at or towards the front of the engine housing.

4.3.2 *Rear Handle* — Support handle located at or towards the rear of the engine housing.

4.3.3 *Wrap Round Handle* — Special type of front handle allowing the saw to be used also in the right-hand side up (RSU) position (*see* Fig. 5g).

4.4 Safety Device

4.4.1 *Chain Brake* — Device for stopping or locking the chain, activated manually or released automatically when kick back occurs.

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*Applicable to IC engine saws.
†Applicable to electric engine saws.

4.4.2 *Front Hand Guard* — Guard between the front handle and the chain for protecting the hand from injuries and aiding in control of the saw if the hand slips off the handle. This guard is often used to activate the chain brake.

4.4.3 *Nose Guard* — Device, covering the nose area of the guide bar, for reducing the incidence or severity of kick back.

4.4.4 *Chain Catcher* — Device for restraining the chain if it breaks or degrooves.

4.4.5 *Clutch Cover* — Protective cover on the clutch and the sprocket.

4.4.6 *Rear Hand Guard* — Extension on the lower part of the rear handle for protecting the hand from the chain if it breaks or degrooves.

4.4.7 *Throttle Trigger Lockout; Safety Trigger** — Device that prevents the accidental operation of the throttle trigger until manually released.

4.4.8 *Heated Handle* — Handle equipped with a device which allows it to be heated, for example, by exhaust gases or electricity.

4.5 Cutting Equipment

4.5.1 *Chain Guides* — Plates or guides, fitted on one or both sides of the guide bar where the chain enters the groove, for assisting in guiding the chain between the sprocket and the guide bar.

4.5.2 *Chain; Saw Chain* — Chain serving as a cutting tool, usually consisting of drive links, cutters and side links, held together by rivets.

4.5.3 *Chain Pitch* — The arithmetic mean of the two distances between three adjacent rivets.

4.5.4 *Guide Bar* — The part that supports and guides the saw chain.

4.5.5 *Usable Cutting Length*

4.5.5.1 *On saws with removable or without spiked bumpers* — The distance from the foremost edge of the machine housing along the guide bar axis to the outside edge of the cutting link, with the chain adjuster set at mid-position (*see* Fig. 7a).

4.5.5.2 *On saws with permanently fixed spiked bumper* — The distance from the root (base) of the spiked bumper along the guide bar axis to the outside edge of the cutting link, with the chain adjuster set at mid-position (*see* Fig. 7b).

*Applicable to IC engine saws.

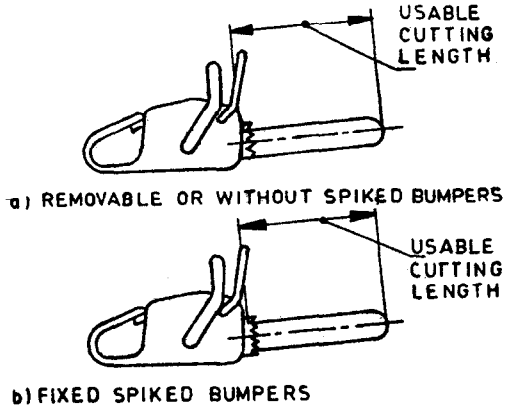

FIG. 7 CUTTING LENGTH

4.5.6 *Rim Sprocket* — Chain drive wheel with teeth, with rims on which the side and cutter links run.

4.5.7 *Spur Sprocket* — Chain drive wheel with teeth in which the drive links run and the side and cutter links are supported.

4.6 Miscellaneous Terms

4.6.1 *Clutch* — Device for engaging and disengaging a driven member to and from a rotating source of power.

4.6.2 *Felling Sights* — Marks on the chain saw to aid felling a tree in a desired direction.

4.6.3 *Muffler Silencer** — Device for reducing engine exhaust noise and directing the exhaust gases.

4.6.4 *Spark Arrester*†* — Device, through which the exhaust gases pass, for stopping glowing particles.

4.6.5 *Spiked Bumper* — Device, fitted in front of the guide bar mounting point, acting as a pivot when in contact with a tree or log.

4.6.6 *Guide Bar Cover* — Removable device for covering the guide bar and chain when the saw is not being used.

5. TERMS RELATING TO PORTABLE BRUSH SAWS

5.1 Work Position — The work position of brush saw is shown in Fig. 8.

*Applicable to IC engine saws.
†Applicable to electric saws.

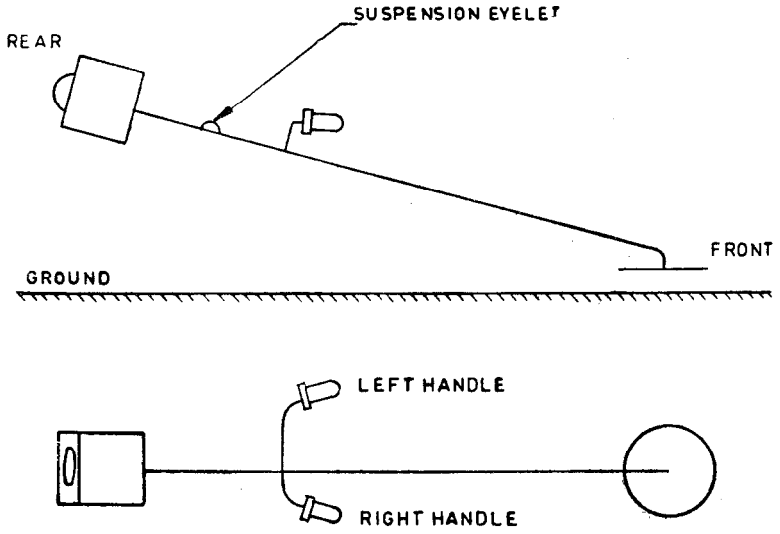

FIG. 8 BRUSH SAW DIRECTION

5.2 Kick-Back (Throw) — Uncontrolled (sudden and accidental) sideways or backward motion of the saw blade, which may occur when it contacts an object such as a sampling, tree stump, etc, especially when the cutting force is directed towards the operator.

5.3 Control System Components — (*see* **4.2**).

5.4 Harness — Adjustable straps of leather, plastic or other suitable material by means of which the saw is suspended from the operator.

5.5 Hip Pad — Strap or pad of leather, plastic or other suitable material fastened either to the saw or to the harness, to cushion the operator from impact and to reduce transmission of vibration.

5.6 Handles — Support handles for manoeuvring the saw (*see* Fig. 8).

5.7 Safety Devices

5.7.1 *Saw Blade Guard* — Device covering the rear part of the saw blade in order to protect the operator.

5.7.2 *Saw Blade Cover* — Removable cover completely shielding the saw blade teeth when the saw is not in use.

5.7.3 *Quick Release Machanism* — Device enabling the operator to free himself quickly from the saw in case of emergency.

5.8 Saw Blade — Metal disc with peripheral cutting teeth.

5.9 Miscellaneous Terms

5.9.1 *Clutch* — (*see* **4.6.1**).

5.9.2 *Power Transmission Shaft* — Shaft inside the shaft tube for transmitting the power from the engine to the saw blade.

5.9.3 *Shaft Tube* — Part of the saw body that provides a casing for the power transmission shaft.

5.9.4 *Angle Transmission* — Device for transmitting the power from the power transmission shaft to the saw blade.

5.9.5 *Muffler* — (*see* **4.6.3**).

5.9.6 *Spark Arrester* — (*see* **4.6.4**).

5.10 Suspension Eyelet — Ring or other fitting, fixed to the saw near its centre of gravity, to which the harness is attached (*see* Fig. 8).