INTERNATIONAL STANDARD

ISO 6814

Third edition
2009-05-15

Machinery for forestry — Mobile and self-propelled machinery — Terms, definitions and classification

Matériel forestier — Machines mobiles et automotrices — Termes, définitions et classification

Reference number
ISO 6814:2009(E)

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Published in Switzerland

Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 6814 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 15, *Machinery for forestry*.

This third edition cancels and replaces the second edition (ISO 6814:2000), which has been technically revised.

Machinery for forestry — Mobile and self-propelled machinery — Terms, definitions and classification

1 Scope

This International Standard defines terms corresponding to, and gives guidance for the classification of, mobile and self-propelled machinery used in forestry and related operations. Both the definitions and the classification have been determined according to the end use of the machines as intended by the manufacturer. The terms and definitions do not cover all possible forestry and related operations or machinery, nor do they describe specific machines, but are given as an aid to nomenclature.

This International Standard is applicable to machines designed for use in forestry for site preparation, planting, harvesting, processing, and the transport of wood and wood fibre. It is not applicable to machines designed to be used exclusively in sawmills or wood yards, to on-highway transport vehicles, or to aerial vehicles.

2 Terms and definitions

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

2.1 Site preparation, planting and maintenance operations

2.1.1
ground preparation
bedding
preparation of the soil surface to provide a location for planting

2.1.2
chopping
breaking down material into shorter pieces

2.1.3
cleaning
selective removal of unwanted shrubs and trees without use of the wood

2.1.4
clearing
removing unwanted residues (logging waste), shrubs, trees and stumps

2.1.5
grubbing
removing trees and stumps from an area by severing below the ground surface, lifting, and pushing into piles

2.1.6
mulching
reduction of trees, brush or parts of trees on site with a grinding or shredding action, leaving the resulting material on the forest floor

2.1.7
planting
putting trees or seedlings into the ground at their growing positions

2.1.8
ploughing
shearing and turning mineral soil with a linear motion

2.1.9
pruning
removal of live or dead branches or of multiple leaders of shoots from standing trees

2.1.10
raking
moving loose material using a toothed or comb-like device

2.1.11
scarifying
preparing the ground surface for planting or regeneration by lightly cultivating the surface

2.2 Forest harvesting operations

2.2.1
bunching
gathering and arranging trees or parts of trees in bunches

2.2.2
bundling
baling
collecting trees or parts of trees and compressing and binding them into a denser form

2.2.3
cable yarding
transporting trees or parts of trees by means of a cable system partially or fully elevated above the forest floor

2.2.4
chipping
breaking down/slicing trees into small pieces of specified dimensions

2.2.5
crushing
reduction of trees or parts of trees by compression or impacting

2.2.6
debarking
removing bark from trees or parts of trees

2.2.7
delimbing
removing branches from trees or parts of trees

2.2.8
felling
severing trees from the stump

2.2.9
forwarding
transporting trees or parts of trees by carrying them

2.2.10
grinding
reduction of trees, brush or parts of trees by tearing, shredding, impacting or shearing to a uniform particle size

2.2.11
harvesting
felling combined with other processing functions

2.2.12
loading
picking up trees or parts of trees from the ground, or from a vehicle, and piling them on a vehicle

2.2.13
stacking
depositing trees or parts of trees in orderly piles

2.2.14
processing
function or combination of functions other than felling that change the form of the material

2.2.15
skidding
transporting trees or parts of trees by trailing or dragging

2.2.16
cross-cutting
cutting felled or uprooted trees or parts of trees into lengths

2.2.16.1
slashing
cross-cutting to approximate lengths

2.2.16.2
bucking
cross-cutting to measured lengths

2.2.17
sorting
separating trees or parts of trees into groups based on particular attributes

2.2.18
splitting
dividing trees or parts of trees longitudinally into pieces

2.2.19
thinning
selective felling in immature stands to promote the growth or condition of the remaining trees

2.2.20
topping
cutting off the tops of trees at a predetermined point

2.2.21
uprooting
removal of trees, complete with root ball, by severing or breaking roots below the soil surface

2.3 Forestry machinery

2.3.1 Single-function machines

2.3.1.1
bundler
machine designed to collect trees or parts of trees, compact the collected material and bind it together to create a denser collection of material

2.3.1.2
cable yarder
machine designed to provide the power to transport trees or parts of trees by means of a cable system, usually with the use of a tower that may be integral to the machine or a separate structure

2.3.1.3
chipper
machine designed to chip whole trees or parts of trees

2.3.1.4
cleaner
machine designed to selectively remove unwanted shrubs and trees

2.3.1.5
crusher
machine designed to reduce trees or parts of trees by rolling or impacting

2.3.1.6
debarker
machine designed to remove the bark from trees or parts of trees

2.3.1.7
delimber
machine designed to remove limbs from trees or parts of trees

2.3.1.8
feller
self-propelled machine designed to fell standing trees

2.3.1.9
forwarder
self-propelled machine designed to move trees or parts of trees by carrying them

2.3.1.10
grinder
self-propelled or portable machine designed to reduce trees, brush or parts of trees by tearing, shredding, impacting or shearing to a uniform particle size

2.3.1.11
log loader
machine designed to pick up and discharge trees or parts of trees for the purpose of stacking or loading

2.3.1.12
mulcher
self-propelled machine designed for on-site reduction of standing or downed trees, brush, or parts of trees through a grinding or shredding action into coarse residue that is left on the forest floor

2.3.1.13
regeneration equipment
machines used in reforestation

2.3.1.14
site preparation equipment
machines used to prepare forest sites for planting or seeding

2.3.1.15
skidder
self-propelled machine designed to transport trees or parts of trees by trailing or dragging

2.3.1.16
slasher
machine designed to cut felled trees into separate parts without measurement for length

2.3.2 Multi-function machines

2.3.2.1
delimber-buncher
machine designed to delimb trees and arrange logs in bunches

2.3.2.2
feller-buncher
self-propelled machine designed to fell standing trees and arrange them in bunches

2.3.2.3
feller-forwarder
self-propelled, self-loading machine designed to fell standing trees and transport them by carrying

2.3.2.4
feller-skidder
self-propelled, self-loading machine designed to fell standing trees and transport them by skidding

2.3.2.5
harvester
self-propelled machine that combines felling with other processing functions

2.3.2.6
harwarder
self-propelled machine that combines felling with other processing functions and forwarding

2.3.2.7
processor
machine that does not fell trees but which performs two or more subsequent functions that change the form of the material

3 Classification guidelines

3.1 Classification by general technical concept

3.1.1 General

The following common criteria should be used to classify forestry machines, each according to its general technical concept. The examples given do not include all possible classifications of machines.

Only those subclassifications necessary for identifying machines in their context of use need be listed, e.g. wheeled grapple skidder or tracked swing-to-load knuckleboom log loader.

3.1.2 Mobility method

Classification may be by type of system for providing motion, which might or might not be self-propelled.

EXAMPLE Tracked system, wheeled system, towed system.

3.1.3 Mode of operation

Classification may be by the basic concept used to perform the function.

EXAMPLE Grapple, single-grip, shear, swing-to-load.

3.1.4 Harvesting system

Classification may be by the type of harvesting system for which the machine is designed.

EXAMPLE Shortwood, tree-length, whole-tree, chips.

3.1.5 Type of steering

Classification may be by the type of system used to steer the machine.

EXAMPLE Front- or rear-steer axle, articulated frame, skid.

3.2 Classification by function

3.2.1 General

The following criteria should be used to classify forestry machines according to their machine-specific functions or by the combinations of functions that they perform (e.g. skidder). Further classification could be required in order to differentiate between machines with basic conceptual differences that affect recognition or performance but which perform the same basic function(s) (e.g. cable skidder, grapple skidder).

3.2.2 Fellers

Fellers should be classified according to their cutting means.

EXAMPLE Shear feller, chain-saw feller, circular saw feller.

3.2.3 Log loaders

Log loaders should be classified according to their system of loading and configuration.

EXAMPLE Knuckleboom loader, cable loader, front end loader.

3.2.4 Regeneration equipment

Regeneration equipment should be classified according to its mode of operation.

EXAMPLE Hand planting equipment, machine planting equipment, direct seeding equipment.

3.2.5 Skidders

Skidders should be classified according to their skidding/tree holding system.

EXAMPLE Cable skidder, grapple skidder, clam bunk skidder.

3.2.6 Slashers (bucker, crosscutter)

Slashers should be classified according to their cutting means.

EXAMPLE Shear slasher, chain-saw slasher, circular saw slasher.

3.2.7 Site preparation equipment

Site preparation equipment should be classified according to its own type of equipment.

EXAMPLE Scarifiers, rippers, brushland disks, forest ploughs, trenchers, mounders, bedding harrows.

3.2.8 Feller-bunchers

Feller-bunchers should be classified according to their manner of approaching the tree.

EXAMPLE Travel-to-tree, swing-to-tree.

3.2.9 Processors

Processors should be classified according to the type and sequence of operations they perform.

EXAMPLE Delimber-debarker, delimber-debarker-chipper, delimber-slasher (bucker, crosscutter), delimber-slasher (bucker, crosscutter)-buncher.

3.2.10 Harvesters

3.2.10.1 Basic concept

Harvesters should be classified according to the basic concepts used for handling the tree for felling and processing.

EXAMPLE One-grip (single-grip) harvester, two-grip harvester.

3.2.10.2 Combination of felling and other functions

Harvesters should be classified by the combination of felling and other functions they perform.

EXAMPLE Feller-chipper, feller-delimber, feller-delimber-buncher, feller-delimber-slasher-buncher, feller-delimber-bucker-forwarder.

ICS 01.040.65; 65.060.80

Price based on 7 pages