
**Tractors and machinery for
agriculture and forestry — Basic types
— Vocabulary**

*Tracteurs et matériels agricoles et forestiers — Principaux types —
Vocabulaire*

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 2, *Common tests*.

This second edition cancels and replaces the first edition (ISO 12934:2013), which has been technically revised.

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

- definitions for on-road towed implement, agricultural unoccupied aerial vehicle, portable auger, portable conveyor, and numerous self-propelled harvesters have been added;
- definitions for specific self-propelled cotton harvesters have been added;
- the definitions of several tractor terms have been updated.

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.

Introduction

This document provides definitions and terms for types of agricultural machinery and tractors used in agriculture and forestry. It establishes uniformity in definitions for ISO/TC 23 published standards.

The list provided in [3.2](#) is not comprehensive and, therefore, does not represent all the machine types that exist. One or more definitions may apply to a certain machine configuration.

NOTE Other terms commonly used for “agricultural field equipment” are “farm machinery”, “farm implements”, “implements of husbandry” and “agricultural machinery”.

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Tractors and machinery for agriculture and forestry — Basic types — Vocabulary

1 Scope

This document provides terms and definitions for agricultural field equipment designed primarily for use in agricultural operations for the production of food and fibre.

This document also applies to agricultural tractors used in forestry applications. Purpose-built forestry machines, as defined by ISO 6814, are not included.

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:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 Basic terms and definitions

3.1.1

machine

machinery

assembly, fitted with or intended to be fitted with a drive system consisting of linked parts or components, at least one of which moves, and which are joined together for a specific application

Note 1 to entry: The terms “machinery” and “machine” also cover an assembly of machines which, in order to achieve the same end, are arranged and controlled so that they function as an integral whole.

[SOURCE: ISO 12100:2010, 3.1, modified — “and machine” has been added to Note 1; Note 2 has been omitted.]

3.1.2

agricultural field equipment

agricultural vehicle

agricultural tractors (3.2.1), self-propelled machines (3.2.2), implements (3.2.3 to 3.2.4), interchangeable towed machinery (3.1.3), trailers (3.2.6), and combinations thereof designed primarily for agricultural field operations and occasional road travel

3.1.3

interchangeable towed machinery

machine which is designed to be towed by an *agricultural tractor (3.2.1)* or *self-propelled machine (3.2.2)* and changes or adds to its functions

Note 1 to entry: It may include a load platform designed and constructed to receive any tools and appliances needed for those purposes, and to store temporarily any materials produced or needed during work.

Note 2 to entry: Any vehicle intended to be towed by a tractor and

- designed to process materials, or
- permanently incorporating an implement

shall be considered interchangeable towed machinery if the ratio of the technically permissible mass to the unladen mass of that vehicle is less than 3,0.

3.1.3.1

on-road towed implement

interchangeable towed machine (3.1.3) that is specifically designed to be additionally towed by a motor vehicle on public roadways and is intended for off-road agricultural use

Note 1 to entry: Motor vehicle as defined in ISO 3833:1977, 3.1.

3.1.4

maximum design ground speed

speed based on the nominal design capability of the machine with tyres or endless tracks offered as original equipment

Note 1 to entry: The tyre size will be the largest diameter drive tyres on *agricultural tractors* (3.2.1) and *self-propelled machines* (3.2.2) but not necessarily on towed equipment.

Note 2 to entry: In order to account for various unavoidable errors due, in particular, to the measuring technique and to the increase in running speed of the engine with a partial load, a measured speed may exceed the value for the maximum design ground speed by 3 km/h. An additional 5 % tolerance on the measured speed shall be permitted to account for variations due to tyre size.

3.1.5

maximum mass

mass stated by the *agricultural vehicle* (3.1.2) manufacturer to be technically permissible

3.1.6

technically permissible mass

sum of the maximum allowable equipment mass and allowable payload specified by the manufacturer

Note 1 to entry: This mass corresponds to the sum of the technically maximum possible axle loads and, in the case of a semi mounted trailer, the vertical static load.

3.1.7

unladen mass

mass of the *agricultural vehicle* (3.1.2) in running order, if applicable with full fuel, DEF, lubricant and coolant tanks and with a driver of a mass of 75 kg, but without passengers, optional accessories or load

3.1.8

agricultural unoccupied aerial vehicle

unoccupied aerial vehicle used for specific agricultural purposes, such as gathering image-based crop data, field surveying, livestock movement, spraying, other aerial based information gathering

3.1.9

width

distance measured between the vertical planes parallel to the longitudinal axis of the vehicle and passing through the outermost points of the *agricultural vehicle* (3.1.2) in a configuration for public roadway transport, but excluding:

- any mirrors;
- any direction indicators;
- any front, lateral or rear position (side) lamps and any parking lamps;
- any folding components such as lift-up footrests and flexible mud-flaps.

Note 1 to entry: This term is not to be confused with track (see ISO 789-13:2018, 3.3) that measures vertical planes through the centreline of the tyres.

3.2 Specific terms and definitions

3.2.1

agricultural tractor

self-propelled *agricultural vehicle* (3.1.2) having at least two axles and wheels, endless tracks, or a combination of wheels and endless tracks, particularly designed to pull, push, carry or provide power to operate implements or pull agricultural trailers and implements, or any combination of these functions used for agricultural work (including forestry work), which may be provided with a load platform

Note 1 to entry: The *agricultural vehicle* (3.1.2) has a *maximum design ground speed* (3.1.4) of not less than 6 km/h and may be equipped with more than one seat.

3.2.1.1

standard agricultural tractor

agricultural tractor (3.2.1) having a minimum wheel track width of 1 150 mm or greater, the overall width not exceeding 2,55 m with at least one permissible tyre or endless track combination, an unladen mass, in running order, of 400 kg or greater, and a ground clearance of 1 000 mm or less

3.2.1.2

two-wheel drive tractor

agricultural tractor (3.2.1) with traction power provided only through the rear tyres

Note 1 to entry: The front tyres are smaller than the rear and typically use a profile type with no traction capability.

3.2.1.3

all-wheel drive tractor

agricultural tractor (3.2.1) with two axles or more, having power to all axles

Note 1 to entry: The drive of one or more axles may be disengageable.

3.2.1.3.1

four-wheel drive tractor with unequal sized wheels

all-wheel drive tractor (3.2.1.3) with primary power provided through the rear tyres and disengageable power through the front tyres

Note 1 to entry: The front tyres are generally larger in rolling radius than those of a two-wheel drive tractor and use a tyre profile that will transmit traction capability.

3.2.1.3.2

four-wheel drive tractor with equal sized wheels

all-wheel drive tractor (3.2.1.3) with equal sized wheels and having power to both axles

3.2.1.3.3

all-wheel drive tractor with more than 2 axles

all-wheel drive tractor (3.2.1.3) with more than two axles having power to all axles

3.2.1.4

track-laying tractor

agricultural tractor (3.2.1) propelled by belted or linked endless tracks or by a combination of wheels and endless tracks

Note 1 to entry: Belted units in this definition may have a positive, friction, or combination positive-friction drive. Belts that fit over regular tractor tyres are not included in this definition.

3.2.1.5

articulated tractor

agricultural tractor (3.2.1) that is steered by means of a centre pivot articulation system

3.2.1.6

small tractor

agricultural tractor (3.2.1) having an unladen mass, in running order, of less than 400 kg

3.2.1.7

compact utility tractor

agricultural tractor (3.2.1) equipped with a 540 r/min rear PTO and a three-point hitch designed for Category I implements only

Note 1 to entry: These tractors generally have a mass less than 1 800 kg; have less than 30 PTO kW, and are primarily designed and advertised for use with mowers and light-duty material handling equipment. The rear PTO and hitch categories are defined by ISO 500-1 or ISO 500-2 and ISO 730, respectively.

3.2.1.8

extra wide tractor

agricultural tractor (3.2.1) characterised by their large dimensions, primarily intended for working large areas of farmland

Note 1 to entry: Tractors with large tread width are covered by this definition.

3.2.1.9

high speed tractor

agricultural tractor (3.2.1) having a maximum design ground speed greater than 40 km/h

3.2.1.10

specialized tractor

agricultural tractor (3.2.1) designed to operate in special field conditions (e.g. in vineyards, orchards, speciality row crops), and that requires unique design configurations (e.g. low clearance, high clearance, narrow profile,) for functional operation

3.2.1.10.1

boat tractor

agricultural tractor (3.2.1) supported by a boat body and propelled by the wheels of the tractor

3.2.1.10.2

high clearance tractor

agricultural tractor (3.2.1) having clearance under the front and rear axles greater than the *standard agricultural tractor* (3.2.1.1)

Note 1 to entry: High-clearance tractors are typically designed for operation in vegetables, cotton, rice, tobacco or other speciality row crops requiring high clearance to avoid crop damage and are characterized by the addition of extended length axle spindles for front axles with rear axle modifications that provide an axle output significantly below the centreline of the rear axle trumpets. They are normally equipped with large diameter, narrow width tyres to minimize crop damage.

3.2.1.10.2.1

mudder tractor

specialized *high-clearance tractor* (3.2.1.10.2), designed for adverse field conditions, and usually equipped with front wheel drive assist

Note 1 to entry: Mudder tractors are typically equipped with four equal sized large diameter, narrow width tyres.

3.2.1.10.3

low clearance tractor

agricultural tractor (3.2.1) having clearance under the front and rear axles less than the *standard agricultural tractor* (3.2.1.1) and typically having low profile body work and foldable ROPS

Note 1 to entry: Low clearance tractor are typically designed for operation in orchards or low clearance buildings.

Note 2 to entry: These tractors are characterized by having a technically permissible mass no greater than 10 t, and for which the ratio of this mass to the maximum unladen mass in running order is less than 2,5. These tractors are equipped with one or more power take-offs and may have a supporting frame.

3.2.1.10.4**low profile tractor**

agricultural tractor (3.2.1) optimized for low clearance operation for use in orchards and low headroom applications, usually configured such that the highest point of the hood does not exceed 1 525 mm

Note 1 to entry: Low profile tractors are typically designed for operation in orchards and low clearance buildings.

3.2.1.10.5**mountain tractor**

all-wheel drive tractor (3.2.1.3) whose interchangeable equipment is intended for agricultural or forestry use and which is characterized by a supporting frame, one or more power take-offs, a technically permissible mass not greater than 10 t at a ratio to the maximum unladen mass in running order of less than 2,5, and which has a centre of gravity less than 850 mm

Note 1 to entry: The height of the centre of gravity is in accordance with ISO 789-6 and is measured relative to the ground using the tyres that are normally fitted.

Note 2 to entry: Mountain tractors are typically designed for operation in mountainous areas or on steep roadside banks.

3.2.1.10.6**narrow tractor**

agricultural tractor (3.2.1) having a fixed or adjustable track width less than 1 150 mm with at least one tyre set; an unladen mass, in running order, of 400 kg or more; and a ground clearance of 600 mm or less

Note 1 to entry: It is assumed that the axle mounted with the wider tyres is set at a track width of not more than 1 150 mm. It shall be possible to set the track width of the other axle in such a way that the outer edges of the narrower tyres do not protrude beyond the outer edges of the tyres of the other axle. Where the two axles are fitted with tyres and rims of the same size, the fixed or adjustable track width of the two axles shall be less than 1 150 mm.

3.2.1.10.6.1**vineyard tractor**

narrow tractor (3.2.1.10.6) with a fixed or adjustable track width not more than 950 mm

3.2.1.10.6.2**orchard tractor**

narrow tractor (3.2.1.10.6) with a fixed or adjustable track width not less than 950 mm and not more than 1 150 mm

3.2.1.10.7**scraper tractor**

agricultural tractor (3.2.1) adapted primarily to pull one or more towed scrapers

Note 1 to entry: Towed scraper is defined in ISO 6165:2012, 4.7.1.

3.2.1.10.8**utility transport tractor**

agricultural tractor (3.2.1) that combines the primary functions with the capability to transport materials in conditions requiring greater maneuverability of equipment.

Note 1 to entry: For transport functions, in addition to offering the feature of a drawbar or three-point hitch, this tractor can utilize load-carrying devices to transmit portions of a towed load onto the tractor chassis. This provides for closer coupling of the tractor and trailed implement for improved maneuverability. Configurations may include mounted boxes or tanks for transport of materials.

3.2.1.10.8.1**utility transport tractor (Type 1)**

utility transport tractor (3.2.1.10.8) with the provision for only the operator

3.2.1.10.8.2

utility transport tractor (Type 2)

utility transport tractor (3.2.1.10.8) with the provision for an operator and an additional personnel

3.2.2

self-propelled machine

self-propelled machinery

agricultural vehicle (3.1.2) having at least two axles and wheels, endless tracks, or a combination of wheels and endless tracks, primarily designed for use in agriculture and which, according to its design and the permanently mounted devices provides its own means of tractive movement and is suitable and intended to perform work

Note 1 to entry: Additionally, there may be transport facilities which are suitable and intended to carry instruments and auxiliaries required for the performance of work as well as materials resulting from and necessary for the work for intermediate storage.

Note 2 to entry: Agricultural tractors are specifically defined in 3.2.1.

3.2.2.1

self-propelled beet harvester

self-propelled machine (3.2.2) that digs and conveys sugar beets to an attached bin or into an accompanying truck or wagon

3.2.2.2

self-propelled combine harvester

self-propelled machine (3.2.2) for harvesting a wide variety of grain and seed crops

3.2.2.3

self-propelled cotton harvester

self-propelled machine (3.2.2) for harvesting cotton

3.2.2.3.1

self-propelled cotton picker

self-propelled machine (3.2.2) for selection and collecting cotton from open bolls on cotton stalks consisting of picking heads equipped with revolving bared spindles, a conveying means, and a method of on-board storage the picked seed cotton

3.2.2.3.2

self-propelled cotton stripper

self-propelled machine (3.2.2) for non-selective collecting of cotton bolls from cotton stalks consisting of rotating brush rolls or flexible finger heads, a conveying means, optionally an on-board field cleaner for removing burrs and sticks, and a method of on-board storage the harvested seed cotton

3.2.2.4

self-propelled forage harvester

self-propelled machine (3.2.2) that gather and chop forage crops

Note 1 to entry: The machine usually has a discharge that loads the chopped material into an accompanying wagon or truck.

3.2.2.5

self-propelled forage baler

self-propelled machine (3.2.2) that picks up and compress loose forage into compact secured bales.

Note 1 to entry: Bales are discharged to ground surface or to an accompanying conveyance.

3.2.2.6

self-propelled sprayer

self-propelled machine (3.2.2) that carries a supply tank, pump and spray heads for spraying crops

3.2.2.6.1**self-propelled high clearance sprayer**

self-propelled sprayer (3.2.2.6) having the crop clearance of the machine greater than 1 220 mm

3.2.2.7**self-propelled windrower or mower conditioner**

self-propelled machine (3.2.2) that cuts and gathers standing forage, grain crops, or seed crops into windrows for drying and pickup. In forage operations, the machine normally includes a crop conditioning attachment

3.2.2.8**variable-reach truck****telescopic handler****telehandler**

lift truck fitted with one or more articulated arms, telescopic or not, non-slewing or having a slewing movement of not more than 5° either side of the longitudinal axis of the truck used for stacking loads

Note 1 to entry: A drawbar may also be provided for light towing applications.

[SOURCE: ISO 5053-1:2020, 3.20]

3.2.2.9**self-propelled bale accumulator**

self-propelled machine (3.2.2) that pick up, accumulate, stack and deposit bales of forage that have been deposited on the ground

3.2.2.10**self-propelled berry harvester**

self-propelled machine (3.2.2) for selectively harvesting ripe blueberry, raspberry, blackberry or other berry that grows in a hedge row, then capturing, conveying, cleaning and storing the picked fruit

3.2.2.11**self-propelled coffee harvester**

self-propelled machine (3.2.2) for harvesting coffee cherry from coffee grown in hedge row, then capturing, conveying, cleaning and storing the picked fruit

3.2.2.12**self-propelled grape harvester**

self-propelled machine (3.2.2) for harvesting a wide variety of grapes from trellised vines, then capturing, conveying, cleaning and storing the picked fruit

3.2.2.13**self-propelled pea/bean harvester**

self-propelled machine (3.2.2) that strips soft crop pods from the plants, conveys material into threshing drum, opens and separates peas and beans from pods and straw, cleans crop and stores the harvested crop

3.2.2.14**self-propelled root vegetable harvester**

self-propelled machine (3.2.2) that removes root vegetables from the ground or a soil bed, cleans and conveys the vegetables to a bin or an accompanying truck or wagon

3.2.2.15**self-propelled sugar cane harvester**

self-propelled machine (3.2.2) that cuts sugar cane stalks at the base, strips the leaves off, cuts the stalk into a specified length, ejects waste material onto the field and either deposits the cane sections into an on-board storage bin or an accompanying truck or wagon

3.2.2.16

self-propelled sweet corn harvester

self-propelled machine (3.2.2) for harvesting fresh sweet corn from the stalk and consisting of a picking head, a conveying means and either a bin for carrying the picked ears or an elevator for discharging the picked ears into an accompanying truck or wagon

3.2.3

mounted implement

device or machine that performs a specific operation and which is normally attached to a tractor or a self-propelled machine and fully carried by the tractor or *self-propelled machine* (3.2.2)

Note 1 to entry: Implements can be mounted on the front, the rear, the load platform (if any) and/or between the axles of the *agricultural tractor* (3.2.1) or self-propelled machine.

3.2.3.1

rear mounted implement

mounted implement (3.2.3) attached on the rear and fully carried during transport

3.2.3.2

front mounted implement

mounted implement (3.2.3) attached on the front and fully carried during transport

3.2.3.3

mid-mounted implement

mounted implement (3.2.3) attached between the axles and fully carried during transport

3.2.3.4

platform mounted implement

mounted implement (3.2.3) attached on a load platform and fully carried during transport

3.2.4

semi-mounted implement

rigid drawbar implement

interchangeable towed machinery (3.1.3) with one axle or axle group of land wheels and a coupling device, which cannot move relative to the *agricultural vehicle* (3.1.2) allowing the transmission of vertical forces from the towed agricultural vehicle through the coupling device to the towing agricultural vehicle

Note 1 to entry: Some slight vertical movement may occur at a rigid drawbar, e.g. due to suspension movements. A hydraulically adjustable articulated drawbar is considered to be a rigid drawbar.

Note 2 to entry: Coupling devices for semi-mounted implements include connections described in ISO 22471 and ISO 730.

3.2.5

balanced towed implement

implement with one or more axles positioned to transmit a small static vertical load, not exceeding 10% of that corresponding to the maximum mass of the towed vehicle or a load of 1 000 daN, whichever is less through the hitch to the towing agricultural vehicle

3.2.6

trailer

agricultural vehicle (3.1.2) fitted with wheels or endless tracks, intended mainly to carry loads and designed to be towed by an *agricultural tractor* (3.2.1) or *self-propelled machine* (3.2.2)

Note 1 to entry: Any agricultural vehicle coupled to an agricultural tractor and permanently incorporating an implement is an agricultural or forestry trailer if the ratio of the technically permissible mass to the unladen mass of that agricultural vehicle is equal to or greater than 3,0.