INTERNATIONAL STANDARD

ISO 12934

Second edition
2021-07

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

Tracteurs et matériels agricoles et forestiers — Principaux types — Vocabulaire

Reference number
ISO 12934:2021(E)

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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".

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.