BS ISO 15077:2020

BSI Standards Publication

Tractors and self-propelled machinery for agriculture — Operator controls — Actuating forces, displacement, location and method of operation

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National foreword

This British Standard is the UK implementation of ISO 15077:2020. It supersedes BS ISO 15077:2008, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee AGE/6, Agricultural tractors and forestry machinery.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Tractors and self-propelled machinery for agriculture — Operator controls — Actuating forces, displacement, location and method of operation

Tracteurs et machines agricoles automotrices — Commandes de l'opérateur — Forces de manoeuvre, déplacements, emplacements et modes de fonctionnement

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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).

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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 3, *Safety and comfort*.

This second edition cancels and replaces the first edition (ISO 15077:2008), which has been technically revised.

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

— In Clause 3:

  — the definition for hybrid power source has been added;

  — the definition for critical VT operator control has been revised.

— In Clause 4:

  — multiple new general requirements have been added;

  — a new subclause (4.2) specifically for identification has been added;

  — additional requirements for stopping and starting has been added in Table 1;

  — provisions for new technologies have been introduced into Table 1;

  — requirements for speed selection pattern in Table 1 related to manual/nonlinear transmission shifting patterns have been clarified;

  — new requirements for remote engine starting have been added in Table 1.

— In Annex A:

  — the annex has been reorganized for clarity and flow;

  — torque values have been added to Table A.1 for rotational controls;

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- a new Figure A.1 has been added for clarity;
- Figure A.2 (former Figure A.1) has been revised to correct the operator's position.

— In Annex B:

- reference to AEF 006 has been added.

— In Annex C:

- colour identification numbers have been added to Table C.1.

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.

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Introduction

This document has been developed to provide guidance on methods of operation and requirements for operator controls. These provisions were derived from experience, current practice, human factors literature and existing standards. Specific operating requirements are given for controls common to many tractors and self-propelled agricultural machinery.

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Tractors and self-propelled machinery for agriculture — Operator controls — Actuating forces, displacement, location and method of operation

1 Scope

This document specifies methods of operation and requirements related to manual (for example, hand-, finger-, foot-operated) controls as well as controls associated with virtual terminals intended for a seated operator.

It applies to controls installed on agricultural tractors and self-propelled agricultural machinery.

It also gives recommendations for the control actuating forces and torques, direction of motion and location of these manual controls.

This document also specifies the minimum information relevant to manual controls to be provided in the operator's manual, for use as intended by the manufacturer.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3767-1, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 3767-2, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 2: Symbols for agricultural tractors and machinery*

ISO 11783-6, *Tractors and machinery for agriculture and forestry — Serial control and communications data network — Part 6: Virtual terminal*

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 http://www.electropedia.org/

3.1
control
device actuated by an operator to effect a response from the machine, its attachments or its implements

3.2
control actuating force
force exerted at the centre of the control contact surface and in the direction of its movement to effect a control function

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