



**International
Standard**

ISO 28139

**Equipment for crop protection —
Knapsack combustion engine-
driven airblast sprayers — Safety
and environmental requirements
and test methods**

AMENDMENT 1

*Matériel de protection des cultures — Atomiseurs portés à dos
motorisés — Exigences de sécurité et environnementales et
méthodes d'essai*

AMENDEMENT 1

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This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 6, *Equipment for crop protection*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 144, *Tractors and machinery for agriculture and forestry*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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Equipment for crop protection — Knapsack combustion engine-driven airblast sprayers — Safety and environmental requirements and test methods

AMENDMENT 1

Introduction

Replace the second paragraph with the following.

This document is a type-C standard as stated in ISO 12100:2010.

Normative references

Replace Clause 2 with the following:

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 3767-5:2016, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 5: Symbols for manual portable forestry machines*

ISO 3864-1:2011, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 5681:2020, *Equipment for crop protection — Vocabulary*

ISO 9357:1990, *Equipment for crop protection — Agricultural sprayers — Tank nominal volume and filling hole diameter*

ISO 11684:2023, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Safety signs and hazard pictorials — General principles*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 13857:2019, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 14982:1998, *Agricultural and forestry machinery — Electromagnetic compatibility — Test methods and acceptance criteria*

ISO 19732:2007, *Equipment for crop protection — Sprayer filters — Colour coding for identification*

ISO 19932-1:2013, *Equipment for crop protection — Knapsack sprayers — Part 1: Safety and environmental requirements*

ISO 19932-2:2013, *Equipment for crop protection — Knapsack sprayers — Part 2: Test methods*

ISO 22867:2021, *Forestry and gardening machinery — Vibration test code for portable hand-held machines with internal combustion engine — Vibration at the handles*

ISO 28139:2019/Amd.1:2024(en)

ISO 22868:2021, *Forestry and gardening machinery — Noise test code for portable hand-held machines with internal combustion engine — Engineering method (Grade 2 accuracy)*

IEC 61032:1997, *Protection of persons and equipment by enclosures — Probes for verification*

Terms and definitions

Replace the first paragraph with the following.

For the purposes of this document, the terms and definitions given in ISO 12100:2010, ISO 5681:2020, ISO 19932-1:2013 and the following apply.

4.1

Replace the first paragraph with the following.

The machinery shall comply with the safety requirements and/or protective measures of this clause. In addition, the machine shall be designed according to the principles of ISO 12100:2010 for relevant but not significant hazards which are not dealt with by this document. (See Annex A for a list of significant hazards and hazardous situations and Annex D for a functional representation of the machine.)

4.2

Replace the last sentence with the following:

Compliance shall be checked by measurement as described in ISO 19932-2:2013, 5.3.4.

4.4

Replace the fourth paragraph with the following:

The air tube shall not be detachable without the use of a tool. This requirement does not apply to machines where detached air tube does not allow the moving elements to be reached in accordance with ISO 13857:2019, Table 4.

4.7

Replace the second paragraph with the following:

For openings, such as in covers and guards preventing access to dangerous parts, the safety distances shall be in accordance with ISO 13857:2019, Table 4.

4.11.2

Replace the first sentence with the following:

Vibration shall be measured in accordance with ISO 22867:2021 using so far as appropriate the measurement conditions specified by Annex E.