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

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

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Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Safety requirements and/or protective measures	3
4.1 General	3
4.2 Stability when in operation	3
4.3 Exhaust system	3
4.4 Air tube and chemical hoses	3
4.5 Controls	4
4.5.1 General	4
4.5.2 Handle	4
4.5.3 Throttle trigger	5
4.5.4 Engine stopping device	5
4.5.5 Starting device	5
4.5.6 Liquid line shut-off valve	5
4.6 Machine support	5
4.6.1 Harness	6
4.7 Power-driven components	6
4.8 Fuel tank	6
4.9 Protection against contact with hot parts	6
4.10 Electrical requirements	8
4.10.1 General	8
4.10.2 Ignition circuit	8
4.11 Vibration	8
4.11.1 Reduction by design at source and by protective measures	8
4.11.2 Vibration measurement	8
4.12 Noise	8
4.12.1 Reduction by design at source and by protective measures	8
4.12.2 Noise measurement	9
4.13 Electromagnetic immunity	9
4.13.1 Requirements	9
4.13.2 Verification	9
5 Environmental requirements	9
5.1 General	9
5.2 Absorbency of carrying straps	9
5.3 Spray tank	9
5.4 Strainers and filters	10
5.5 Droplet size	11
5.6 Air hoses and chemical hoses	11
5.7 Fan	11
5.8 Mass of total residual liquid	11
5.9 Stability	11
5.10 Spray liquid flow rate	11
5.11 Test report	12
6 Tests	12
6.1 Test liquids and equipment	12
6.2 Test conditions	13
6.2.1 General	13
6.2.2 Engine speed	13
6.3 Spray liquid output	13

6.4	Mass of total residual liquid.....	13
6.5	Stability.....	14
6.6	Contents gauge scale and total tank volume.....	14
6.7	Filling rate.....	14
6.8	Air velocity.....	15
7	Information for use.....	16
7.1	Instruction handbook.....	16
7.1.1	General.....	16
7.1.2	Technical data.....	18
7.2	Marking.....	19
7.3	Warnings.....	19
Annex A (informative) List of significant hazards.....		20
Annex B (normative) Sampling grid position for air velocity determination.....		25
Annex C (normative) Stability test.....		26
Annex D (informative) Example of a knapsack combustion engine-driven airblast sprayer.....		27
Annex E (informative) Safety signs.....		28
Annex F (informative) Position of sprayer and Petri dishes for potential ground deposit determination.....		29
Annex G (informative) Sprayer locking device.....		30
Annex H (informative) Device for detecting potential vertical deposits.....		31
Annex I (informative) Potential ground deposit, potential vertical deposit and droplet size test.....		32
Annex J (informative) Minimum content of test report.....		35
Bibliography.....		39

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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 on 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 the following URL: 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 6, *Equipment for crop protection*.

This second edition of ISO 28139 cancels and replaces ISO 28139:2009 and ISO 10988:2011, which have been technically revised. The main changes compared to the previous edition are as follows:

- addition of environmental requirements;
- addition of environmental tests;
- exclusion of ergonomics;
- general update to the state of the art.

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

The structure of safety standards in the field of machinery is as follows:

- a) type-A standards (basic standards) giving basic concepts, principles for design, and general aspects that can be applied to machinery;
- b) type-B standards (generic safety standards) dealing with one safety aspect or one type of safeguards that can be used across a wide range of machinery:
 - type-B1 standards on particular safety aspects (e.g. safety distances, surface temperature, noise),
 - type-B2 standards on safeguards (e.g. two-hand control devices, interlocking devices, pressure sensitive devices, guards);
- c) type-C standards (machinery safety standards) dealing with detailed safety requirements for a particular machine or group of machines.

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

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.