

**Põllumajandus- ja metsamasinad. Seljaskantavad
sisepõlemismootoriga udupihustid. Ohutusnõuded**

Agricultural and forestry machinery - Knapsack combustion-
engine-driven mistblowers - Safety requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 28139:2010 sisaldab Euroopa standardi EN ISO 28139:2009 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 28.02.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.09.2009.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 28139:2010 consists of the English text of the European standard EN ISO 28139:2009.

This standard is ratified with the order of Estonian Centre for Standardisation dated 28.02.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 15.09.2009.

The standard is available from Estonian standardisation organisation.

ICS 65.060.40

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute Estonian Standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: +372 605 5050; E-mail: info@evs.ee

ICS 65.060.40

English Version

**Agricultural and forestry machinery - Knapsack combustion-
engine-driven mistblowers - Safety requirements (ISO
28139:2009)**

Matériel agricole et forestier - Nébulisateurs portés à dos à
moteur à combustion interne - Exigences de sécurité (ISO
28139:2009)

Land- und Forstmaschinen - Rückentragbare,
verbrennungsmotorbetriebene Sprühgeräte -
Sicherheitsanforderungen (ISO 28139:2009)

This European Standard was approved by CEN on 17 August 2009.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

This document (EN ISO 28139:2009) has been prepared by Technical Committee CEN/TC 144 "Tractors and machinery for agriculture and forestry", the secretariat of which is held by AFNOR, in collaboration with Technical Committee ISO/TC 23 "Tractors and machinery for agriculture and forestry".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2010, and conflicting national standards shall be withdrawn at the latest by March 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directives.

For relationship with EU Directives, see informative Annex ZA and ZB, which are integral parts of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Annex ZA (informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC

This International Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 98/37/EC on machinery, amended by the New Approach Directive 98/79/EC.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses, *except 7.3 a), d) last indent, e) second indent, 7.4 second indent, of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements, except Essential Requirements 1.3.2, 1.5.2, 1.5.6, 1.5.7, 1.5.8, 1.5.9, 1.5.11 related to EMC immunity, 1.7.4 f) and 2.2 second and third paragraphs*, of that Directive and associated EFTA regulations.

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

Annex ZB (informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC

This International Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC on machinery.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses, *except 7.3 a), of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements, except Essential Requirements 1.3.2, 1.5.2, 1.5.6, 1.5.7, 1.5.8, 1.5.9, 1.5.11 related to EMC immunity, 1.7.4.2 u) and 2.2.1.1, of that Directive and associated EFTA regulations.*

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	2
3 Terms and definitions	2
4 List of significant hazards	3
5 Safety requirements and/or protective measures	4
5.1 General	4
5.2 Stability when in operation	4
5.3 Exhaust system	4
5.4 Chemical tank and strainer	5
5.5 Air tube and chemical hoses	6
5.6 Controls	6
5.7 Machine support	7
5.8 Harness	7
5.9 Power-driven components	8
5.10 Fuel tank	8
5.11 Protection against contact with hot parts	8
5.12 Protection against contact with chemicals during filling	9
5.13 Protection against contact with parts under high voltage	9
6 Verification of the safety requirements and/or protective measures	9
7 Information for use	10
7.1 General	10
7.2 Technical data	10
7.3 Instruction handbook	10
7.4 Marking	12
7.5 Warnings	12
Annex A (normative) Liquid-retaining test on harness	13
Annex B (normative) Stability test on an incline	14
Annex C (informative) Example of knapsack combustion-engine-driven mistblower	15
Annex D (informative) Examples of safety signs	16
Bibliography	17

Introduction

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

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.

Agricultural and forestry machinery — Knapsack combustion-engine-driven mistblowers — Safety requirements

IMPORTANT — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer.

1 Scope

This International Standard specifies safety requirements and their verification for the design and construction of knapsack mistblowers incorporating a combustion engine where the air flow is generated by a fan.

It describes methods for the elimination or reduction of hazards arising from their use. In addition, it specifies the type of information on safe working practices to be provided by the manufacturer. It does not, however, give any technical requirement for reducing noise or vibration hazards. Indeed, the different means available to reduce these hazards are a matter for the technical aids to which the manufacturer may resort, through specialized books or specified bodies.

This International Standard deals with all significant hazards, hazardous situations and events, excepting those arising from

- electromagnetic compatibility,
- static electricity,
- explosion or fire from chemicals for spraying,
- insufficient structural integrity, and
- noise and vibration.

It is applicable to knapsack combustion-engine-driven mistblowers when they are used as intended and under the conditions foreseen by the manufacturer (see Clause 4).

It is not applicable to knapsack combustion-engine-driven mistblowers manufactured before the date of its publication.

2 Normative references

The following referenced documents are indispensable for the application 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 3767-5:1992, *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 machinery*

ISO 3864-1:2002, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs in workplaces and public areas*

ISO 8893:1997, *Forestry machinery — Portable brush-cutters and grass-trimmers — Engine performance and fuel consumption*

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

ISO 11684:1995, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Safety signs and hazard pictorials — General principles*

ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology*

ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles*

ISO 13732-1:2006, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces*

ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 19932-1:2006, *Equipment for crop protection — Knapsack sprayers — Part 1: Requirements and test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100-1:2003 and the following apply.

3.1
knapsack mistblower
machine with a backpack power unit designed for applying chemicals to crops by means of a hand-held spraying device with the liquid being contacted, nebulized and transported by a high-speed air flow generated by a fan

NOTE An example of this machine is given in Annex C.

3.2
backpack power unit
power source which is designed to be carried on the operator's shoulders by means of a supporting device and harness

3.3
harness
adjustable strap(s) used to suspend the machine from the operator