BS EN ISO 11806-1:2022

BSI Standards Publication

Agricultural and forestry machinery — Safety requirements and testing for portable, hand-held, powered brush-cutters and grass-trimmers

Part 1: Machines fitted with an integral combustion engine

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National foreword

This British Standard is the UK implementation of EN ISO 11806-1:2022. It is identical to ISO 11806-1:2022. It supersedes BS EN ISO 11806-1:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee AGE/29, Forestry machinery.

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

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For the Great Britain market (England, Scotland and Wales), if UK Government has designated this publication for conformity with UKCA marking (or similar) legislation, it may contain an additional National Annex. Where such a National Annex exists, it shows the correlation between this publication and the relevant UK legislation. If there is no National Annex of this kind, the relevant Annex ZA or ZZ in the body of the European text will indicate the relationship to UK regulation applicable in Great Britain. References to EU legislation may need to be read in accordance with the UK designation and the applicable UK law. Further information on designated standards can be found at www.bsigroup.com/standardsandregulation.

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EUROPEAN STANDARD

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English Version

Agricultural and forestry machinery - Safety requirements and testing for portable, hand-held, powered brush-cutters and grass-trimmers - Part 1: Machines fitted with an integral combustion engine (ISO 11806-1:2022)

Matériel agricole et forestier - Exigences de sécurité et essais pour débroussailleuses et coupe-herbe portatifs à moteur - Partie 1: Machines équipées d'un moteur à combustion interne intégré (ISO 11806-1:2022)

Land- und forstwirtschaftliche Maschinen - Sicherheitstechnische Anforderungen und Prüfung für tragbare handgehaltene motorbetriebene Freischneider und Grastrimmer - Teil 1: Maschinen mit Antrieb durch integrierten Verbrennungsmotor (ISO 11806-1:2022)

This European Standard was approved by CEN on 26 December 2021.

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European foreword

This document (EN ISO 11806-1:2022) has been prepared by Technical Committee ISO/TC 23 "Tractors and machinery for agriculture and forestry" in collaboration with Technical Committee CEN/TC 144 “Tractors and machinery for agriculture and forestry” the secretariat of which is held by AFNOR.

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 September 2022, and conflicting national standards shall be withdrawn at the latest by September 2022.

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

This document supersedes EN ISO 11806-1:2011.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For the relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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The text of ISO 11806-1:2022 has been approved by CEN as EN ISO 11806-1:2022 without any modification.

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Annex ZA
(informative)

Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered

This European Standard has been prepared under Commission's standardization request "M/396 mandate to CEN and CENELEC for standardisation in the field of machinery" to provide one voluntary means of conforming to essential requirements of the Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements, of that Directive and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Annex I of Directive 2006/42/EC

The relevant Essential Requirements of EU Directive 2006/42/EC	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
1. ESSENTIAL HEALTH AND SAFETY REQUIREMENTS		
1.1.2. Principles of safety integration	4.1	
1.1.3. Materials and products	4.15	
1.1.5. Design of machinery to facilitate its handling	4.2; 4.4	
1.1.6. Ergonomics	4.2; 4.4; 4.5	
1.1.7. Operating positions	4.18; 5.1; 5.2	
1.2. CONTROL SYSTEMS		
1.2.1. Safety and reliability of control systems	4.11; 4.12; 4.13; 4.14	
1.2.2. Control devices	4.11; 4.12; 4.13; 5.2; 5.3	
1.2.3. Starting	4.11; 4.13	
1.2.4. Stopping		
1.2.4.1. Normal stop	4.12	
1.2.4.2. Operational stop	4.14	
1.2.4.4. Assembly of machinery	4.12; 4.14	
1.2.5. Selection of control or operating modes		Not covered
1.2.6. Failure of the power supply	4.11; 4.12	
1.3. PROTECTION AGAINST MECHANICAL HAZARDS		

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The relevant Essential Requirements of EU Directive 2006/42/EC	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
1.3.1. Risk of loss of stability		Not covered
1.3.2. Risk of break-up during operation	4.6; 4.15; 5.1	
1.3.3. Risks due to falling or ejected objects	5.1; 4.6; 4.7; 4.8	
1.3.4. Risks due to surfaces, edges or angles	4.1; 4.9	
1.3.6. Risks related to variations in operating conditions	4.13	
1.3.7. Risks related to moving parts	4.3; 4.14; 4.8	
1.3.8. Choice of protection against risks arising from moving parts		
1.3.8.1. Moving transmission parts	4.1	
1.3.8.2. Moving parts involved in the process	4.3; 4.8	
1.3.9. Risks of uncontrolled movements	4.13; 4.14	
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1.4.1. General requirements	4.3; 4.17	
1.4.2.1. Fixed guards	4.3; 4.8	
1.4.2.2. Interlocking movable guards	-	not covered
1.4.2.3. Adjustable guards restricting access	-	not covered
1.4.3. Special requirements for protective devices		not covered
1.5. RISKS DUE TO OTHER HAZARDS		
1.5.2. Static electricity	-	not covered
1.5.3. Energy supply other than electricity	4.15	
1.5.4. Errors of fitting	5.1	
1.5.5. Extreme temperatures	4.17	
1.5.6. Fire	4.15; 5.1	
1.5.8. Noise	4.20; 5.1	
1.5.9. Vibrations	4.19; 5.1	
1.5.11. External radiation	4.21	
1.5.13. Emissions of hazardous materials and substances	4.15; 4.18	
1.5.15. Risk of slipping, tripping or falling	-	not covered
1.6. MAINTENANCE		
1.6.1. Machinery maintenance	4.7; 5.1	
1.6.2. Access to operating positions and servicing points	-	not covered

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The relevant Essential Requirements of EU Directive 2006/42/EC	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
1.6.3. Isolation of energy sources	4.12	
1.6.4. Operator intervention	5.1; 5.3	
1.6.5. Cleaning of internal parts	-	not covered
1.7. INFORMATION		
1.7.1. Information and warnings on the machinery	5.2; 5.3	
1.7.1.1. Information and information devices	5.2; 5.3	
1.7.1.2. Warning devices	-	not covered
1.7.2. Warning of residual risks	5.1; 5.2; 5.3	
1.7.3. Marking of machinery	5.2	
1.7.4. Instructions	5.1	
1.7.4.1. General principles for the drafting of instructions	5.1	
1.7.4.2. Contents of the instructions from a) to t) and v)	5.1	
1.7.4.2. u)		This standard does not provide presumption of conformity with regard to the determination of sound power level.
1.7.4.3. Sales literature		Not covered
2. SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS FOR CERTAIN CATEGORIES OF MACHINERY		
2.2. PORTABLE HAND-HELD AND/OR HAND-GUIDED MACHINERY		
2.2.1. General	4.2; 4.12; 4.13; 4.14	
2.2.1.1. Instructions	5.1	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

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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 17, *Manually portable (hand-held) powered lawn and garden equipment and forest machinery*, 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).

This second edition cancels and replaces the first edition (ISO 11806-1:2011), which has been technically revised.

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

— Figure 3 has been revised to provide examples of handle distance;

— a force requirement in the throttle trigger lock-out performance test has been added;

— Figures 5a and 5b have been added to clarify throttle trigger lock-out performance test;

— fuel tank structural integrity test requirements have been added by including a new Annex D;

— fuel line strength and accessibility requirements have been added by including a new Annex E;

— Annex A, cutting attachment impact and spin test, has been revised for repeatability.

A list of all parts in the ISO 11806 series can be found on the ISO website.

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

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 organisations, 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 type-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.

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Agricultural and forestry machinery — Safety requirements and testing for portable, hand-held, powered brush-cutters and grass-trimmers —

Part 1: Machines fitted with an integral combustion engine

1 Scope

This document gives safety requirements and measures for their verification for the design and construction of portable hand-held, powered brush-cutters and grass-trimmers (hereafter called machines) having an integral combustion engine as their power unit and mechanical power transmission between the power source and the cutting attachment. Methods for the elimination or reduction of hazards arising from the use of these machines and the type of information on safe working practices to be provided by the manufacturer are specified.

This document deals with all significant hazards, hazardous situations and hazardous events relevant to these machines, as well as when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer.

This document is not applicable to machines equipped with metallic cutting attachments consisting of more than one piece, such as pivoting chains or flail blades.

NOTE See Annex C for a list of significant hazards.

This document is applicable to portable, hand-held, powered brush-cutters and grass-trimmers manufactured after its date of publication.

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 683-4:2016, *Heat-treatable steels, alloy steels and free-cutting steels — Part 4: Free-cutting steels*

ISO 3767-1:2016, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols*

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 7112:2018, *Machinery for forestry — Portable brush-cutters and grass-trimmers — Vocabulary*

ISO 7113:1999, *Portable hand-held forestry machines — Cutting attachments for brush cutters — Single-piece metal blades*

ISO 7918:1995, *Forestry machinery — Portable brush-cutters and grass-trimmers — Cutting attachment guard dimensions*

ISO 8380:1993, *Forestry machinery — Portable brush-cutters and grass-trimmers — Cutting attachment guard strength*

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

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