

Second edition  
2022-02

---

---

# **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**

*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*



Reference number  
ISO 11806-1:2022(E)

© ISO 2022



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2022

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of "ISO 11806-1:2022". [Click here to purchase the full version from the ANSI store.](#)

## Contents

	Page
<b>Foreword</b> .....	<b>v</b>
<b>Introduction</b> .....	<b>vi</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Safety requirements and/or protective measures</b> .....	<b>4</b>
4.1 General.....	4
4.2 Handles.....	5
4.2.1 Requirements.....	5
4.2.2 Verification.....	6
4.3 Barrier and distance to cutting attachment for brush-cutters.....	6
4.3.1 Requirements.....	6
4.3.2 Verification.....	7
4.4 Harness.....	8
4.4.1 Requirements.....	8
4.4.2 Verification.....	8
4.5 Balance.....	8
4.5.1 Requirements.....	8
4.5.2 Verification.....	9
4.6 Cutting attachment strength.....	9
4.6.1 Requirements.....	9
4.6.2 Verification.....	9
4.7 Cutting attachment retention.....	9
4.7.1 Requirements.....	9
4.7.2 Verification.....	9
4.8 Cutting attachment guards.....	10
4.8.1 Requirements.....	10
4.8.2 Verification.....	10
4.9 Transport cover.....	10
4.9.1 Requirements.....	10
4.9.2 Verification.....	10
4.10 Length of flexible cutting lines.....	10
4.10.1 Requirements.....	10
4.10.2 Verification.....	11
4.11 Engine starting device.....	11
4.11.1 Requirements.....	11
4.11.2 Verification.....	11
4.12 Engine stopping device.....	11
4.12.1 Requirements.....	11
4.12.2 Verification.....	11
4.13 Throttle control.....	11
4.13.1 Position.....	11
4.13.2 Operation.....	11
4.13.3 Throttle control latch.....	13
4.14 Clutch.....	14
4.14.1 Requirements.....	14
4.14.2 Verification.....	14
4.15 Tanks.....	14
4.15.1 General.....	14
4.15.2 Fuel tank structural integrity.....	15
4.15.3 Fuel feed line strength and accessibility.....	15
4.16 Protection against contact with parts of the machine under high voltage.....	15
4.16.1 Requirements.....	15

This is a preview of "ISO 11806-1:2022". [Click here to purchase the full version from the ANSI store.](#)

4.16.2	Verification	15
4.17	Protection against contact with hot parts	15
4.17.1	Requirements	15
4.17.2	Verification	15
4.18	Exhaust gases	16
4.18.1	Requirement	16
4.18.2	Verification	16
4.19	Vibration	17
4.19.1	Reduction by design at source and by protective measures	17
4.19.2	Vibration measurement	17
4.20	Noise	17
4.20.1	Reduction by design at source and by protective measures	17
4.20.2	Noise measurement	17
4.21	Electromagnetic immunity	17
4.21.1	Requirements	17
4.21.2	Verification	17
<b>5</b>	<b>Information for use</b>	<b>18</b>
5.1	Instructions	18
5.1.1	General	18
5.1.2	Technical data	18
5.1.3	Other information	18
5.2	Marking	20
5.3	Warnings	21
5.4	Test of labels	22
5.4.1	Preparation of test specimens and control specimens	22
5.4.2	Wipe resistance test	22
5.4.3	Adhesion test	23
<b>Annex A</b>	<b>(normative) Cutting attachment impact and spin test</b>	<b>24</b>
<b>Annex B</b>	<b>(normative) Thrown objects test</b>	<b>26</b>
<b>Annex C</b>	<b>(informative) List of significant hazards</b>	<b>30</b>
<b>Annex D</b>	<b>(normative) Structural integrity of fuel tanks</b>	<b>32</b>
<b>Annex E</b>	<b>(normative) Procedures for the evaluation of the strength and accessibility of fuel feed lines</b>	<b>33</b>
<b>Bibliography</b>		<b>34</b>

This is a preview of "ISO 11806-1:2022". [Click here to purchase the full version from the ANSI store.](#)

## 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](http://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](http://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](http://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](http://www.iso.org/members.html).

## 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.