

**Põllu- ja metsamajanduse traktorid ja masinad.
Kardaanvõllid ja nende kaitsed. Ohutus
KONSOLIDEERITUD TEKST**

Tractors and machinery for agriculture and forestry - Power
take-off (PTO) drive shafts and their guards - Strength safety
CONSOLIDATED TEXT

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12965:2007+A2:2009 sisaldab Euroopa standardi EN 12965:2003+A2:2009 ingliskeelset teksti.

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English Version

**Tractors and machinery for agriculture and forestry - Power
take-off (PTO) drive shafts and their guards - Safety**

Tracteurs et matériels agricoles et forestiers - Arbres de
transmission à cardans de prise de force et leurs
protecteurs - Sécurité

Traktoren und Maschinen für die Land- und Forstwirtschaft
- Gelenkwellen und ihre Schutzeinrichtungen - Sicherheit

This European Standard was approved by CEN on 13 February 2003 and includes Amendment 1 approved by CEN on 28 October 2004 and Amendment 2 approved by CEN on 30 May 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.

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Foreword

This document (EN 12965:2003+A2:2009) has been prepared by Technical Committee CEN /TC 144, "Tractors and machinery for agriculture and forestry", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

This document includes Amendment 1, approved by CEN on 2004-10-28 and Amendment 2, approved by CEN on 2009-05-30.

This document supersedes EN 12965:2003.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1** and **A2** **A2**.

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 EC Directive(s).

A2 For relationship with EC Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. **A2**

EN 1152:1994 *"Tractors and machinery for agriculture and forestry — Guards for power take-off (PTO) drive shafts — Wear and strength tests"* complements this European Standard which gives definitions and requirements concerning PTO drive shafts and their guards.

Annex A is normative.

This document includes a Bibliography.

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 United Kingdom.

0 Introduction

This European Standard is a type C standard as defined in EN 1070.

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

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

The hazards that are common to agricultural machines (self-propelled, mounted, semi-mounted and trailed) are dealt with in EN 1553.

1 Scope

This standard specifies safety requirements and their verification for the design and construction of power take-off (PTO) drive shafts and their guards linking self-propelled machinery (or tractor) to the first fixed bearing of recipient machinery, by describing methods for the elimination or reduction of risks which need specific requirements. This standard concerns only the PTO drive shafts and those guards which are mechanically linked to the PTO drive shaft by at least two bearings.

In addition, it specifies the type of information on safe working practices to be provided by the manufacturer.

This standard does not deal with:

- the guards totally covering, but not mechanically linked to, the PTO drive shaft. As these devices are not at present widely established on the market, they should be dealt with in a future revision of this standard;
- the mechanical characteristics of PTO drive shafts, overrun devices and torque limiters;
- general hazards which are dealt with in EN 1553 (see introduction).

Environmental aspects have not been considered in this standard.

This document is not applicable to PTO drive shafts and their guards which are manufactured before the date of publication of this document by CEN.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 292-1:1991, *Safety of machinery – Basic concepts, general principles for design – Part 1: Basic terminology, methodology.*

EN 292-2:1991, *Safety of machinery – Basic concepts, general principles for design – Part 2: Technical principles and specifications (including amendment A1:1995).*

EN 294:1992, *Safety of machinery – Safety distance to prevent danger zones being reached by the upper limbs.*

EN 1070: 1998, *Safety of machinery – Terminology.*

EN 1152, *Tractors and machinery for agriculture and forestry – Guards for power take-off (PTO) drive shafts – Wear and strength tests.*

ISO 5673:1993, *Agricultural tractors and machinery – Power take-off drive shafts and position of power-input connection.*

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