

**Tööpingid. Ohutus. Elektrotühjakslaadimismasinad**  
**KONSOLIDEERITUD TEKST**

Machine tools - Safety - Electro Discharge Machines  
CONSOLIDATED TEXT

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12957:2001+A1:2009 sisaldab Euroopa standardi EN 12957:2001+A1:2009 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 27.03.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 11.02.2009.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12957:2001+A1:2009 consists of the English text of the European standard EN 12957:2001+A1:2009.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 27.03.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 11.02.2009.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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ICS 25.120.40

**Võtmesõnad:** computers, metal working, occupatio, operating stations, programming, protection against danger, protection devices, safety, safety requirements, set up, spark erosion, transport, turning centres, working places, workplace safety

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

English Version

**Machine tools - Safety - Electro discharge machines**

Machine-outils - Sécurité - Machines d'électroérosion

Werkzeugmaschinen - Sicherheit -  
Funkenerodiermaschinen

This European Standard was approved by CEN on 9 May 2001 and includes Amendment 1 approved by CEN on 29 December 2008.

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 12957:2001+A1:2009) has been prepared by Technical Committee CEN/TC 143 "Machine tools - Safety", the secretariat of which is held by SNV.

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 August 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2008-12-29.

This document supersedes EN 12957:2001.

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

This European Standard 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 Directive(s).

**A1** Annexes A, ZA and ZB of this standard are informative, Annex B is normative. **A1**

**A1** For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. **A1**

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.

## Introduction

This standard applies to equipment using the process of Electro Discharge Machining (EDM) as defined in clause 3. This European Standard is a type C Standard as stated 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 standard.

Complementary guidance is given in type A and B Standards to which reference is made in the text.

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. It provides one means of conforming with the Essential Health and Safety Requirements (EHSR's) of the "Machinery Directive" (98/37/EC).

## 1 Scope

**1.1** This standard specifies technical safety requirements and measures, applicable to EDM equipment and EDM system (e.g. for spark erosion-sinking, spark erosion-wire cutting), to be adopted by persons undertaking the design, construction, installation and/or supply of such equipment. This standard also includes information to be provided by the manufacturer to the user.

**1.2** The design requirements of this standard shall not apply to arc eroding and electro chemical machining equipment.

**1.3** This standard takes account of the intended use in normal workshop environment and non explosive atmospheres including installation, setting, maintenance, repair and dismantling for removal or disposal of EDM equipment.

**1.4** This standard also applies to auxiliary devices essential for EDM processing.

**1.5** This standard deals with specific hazards defined in clause 4, Table 1, and the measures of prevention in clause 5, Table 2.

**1.6** This standard applies to machines built after its date of issue.

**NOTE** Directive 94/9/EC concerning equipment and protective systems intended for use in potentially explosive atmospheres can be applicable to the type of machine or equipment covered by this European Standard. The present standard is not intended to provide means of complying with the essential health and safety requirements of Directive 94/9/EC.

## 2 Normative references

This European Standard contains dated or not dated references on 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 2:1992, *Classification of fires*
- EN 54-1:1996, *Fire detection and fire alarm systems – Part 1: Introduction*
- 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*
- EN 292-2:1991/A1:1995, *Safety of machinery - Basic concepts, general principles for design – Part 2: Technical principles and specifications, (Amendment A.1)*
- EN 294:1992, *Safety of machinery - Safety distances to prevent danger zones being reached by the upper limbs*
- EN 349:1993, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body*
- EN 418:1992, *Safety of machinery - Emergency stop equipment, functional aspects - Principles for design*
- EN 626-1:1994, *Safety of machinery - Reduction of risks to health from hazardous substances emitted by machinery – Part 1: Principles and specifications for machinery manufacturers*
- EN 775:1992, *Manipulating industrial robots - Safety (ISO 10218:1992 modified)*
- EN 811:1996, *Safety of machinery - Safety distances to prevent danger zones being reached by the lower limbs*
- EN 953:1997, *Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards*
- EN 954-1:1996, *Safety of machinery - Safety related parts of control systems – Part 1: General principles for design*
- EN 982:1996, *Safety of machinery - Safety requirements for fluid power systems and their components - Hydraulics*
- EN 983:1996, *Safety of machinery - Safety requirements for fluid power systems and their components - Pneumatics*
- EN 999:1998, *Safety of machinery - The positioning of protective equipment in respect of approach speeds of parts of the human body*
- EN 1037:1995, *Safety of machinery - Prevention of unexpected start-up*
- EN 1050:1996, *Safety of machinery - Principles for risk assessment*
- EN 1070:1998, *Safety of machinery - Terminology*
- EN 1088:1995, *Safety of machinery - Interlocking devices associated with guards - Principles for design and selection*
- prEN 12437-1:1996, *Safety of machinery - Permanent means of access to machines and industrial plants – Part 1: Choice of a fixed means of access between two levels*
- prEN 12437-2:1996, *Safety of machinery - Permanent means of access to machines and industrial plants – Part 2: Working platforms and gangways*

prEN 12437-3:1996, *Safety of machinery - Permanent means of access to machines and industrial plants – Part 3: Stairways, stepladders and guard-rails*

prEN 12437-4:1996, *Safety of machinery - Permanent means of access to machines and industrial plants – Part 4: Fixed ladders*

EN 55011:1998, *Industrial, scientific and medical (ISM) radio frequency equipment - Radio disturbance characteristics - Limits and methods of measurement (CISPR 11:1997, modified)*

EN 60204-1:1997, *Safety of machinery - Electrical equipment of machines – Part 1: General requirements (IEC 60204-1:1997)*

EN 60529:1991, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN 60742:1995, *Isolating transformers and safety isolating transformers - Requirements (IEC 60742:1983 + A1:1992, modified)*

EN 61000-6-2:1999, *Electromagnetic compatibility (EMC) Part 6-2: Generic standards - Immunity for industrial environments (IEC 61000-6-2:1999)*

EN 61310-1:1995, *Safety of machinery - Indication, marking and actuation – Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:1995)*

EN 61310-2:1995, *Safety of machinery - Indication, marking and actuation – Part 2: Requirements for marking (IEC 61310-2:1995)*

EN ISO 3746: 1995, *Acoustics – Determination of sound power levels of noise sources using sound pressure - Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:1995)*

EN ISO 4871:1996, *Acoustics – Declaration and verification of noise emission values of machinery and equipment*

EN ISO 11202:1995, *Acoustics - Noise emitted by machinery and equipment - Measurement method of emission sound pressure levels at the workstation and at other specified positions - Survey method in situ*

EN ISO 11688-1:1998, *Acoustics – Recommended practice for the design of low noise machinery and equipment – Part 1: Planning*