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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 46080-2025

**Machine tools - Safety - Electrical discharge machines
(English Translation)**

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References

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is equivalent to ISO 28881:2022 "Safety of machine tools - Electrical discharge machining".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document was prepared by the National Technical Committee on Standardization of Metal Cutting Machine Tools (SAC/TC22) and the National Technical Committee on Standardization of Special Processing Machine Tools.

It is jointly managed by the committee (SAC/TC161).

Introduction

This document is a Class C standard specified in GB/T 15706-2012 "General Rules for Safety Design of Machinery. Risk Assessment and Risk Reduction".

This document is particularly important for the following stakeholder groups representing participants in the machinery safety market.

---Machine tool manufacturers (small, medium, and large enterprises);

---Health and safety agencies (regulatory agencies, accident prevention organizations, market surveillance, etc.).

And other groups that may be affected by the mechanical safety levels achieved by the aforementioned stakeholders under this document.

---Machine tool users/employers (small, medium, and large enterprises);

---Machine tool users/employees (such as unions);

---Service providers, such as those providing maintenance (small, medium, and large businesses);

---Consumers (for machine tool products intended for consumer use).

All of the aforementioned stakeholder groups are likely to participate in the drafting process.

This document defines the scope of the relevant machine tools and the hazards, dangerous situations, or dangerous events covered.

When the provisions of Category C standards differ from those of Category A or Category B standards, for machines designed and manufactured in accordance with these Category C standards...

For beds, the provisions of this Class C standard take precedence over the provisions of other standards.

Furthermore, to address hazards not covered in this document, electrical discharge machining (EDM) machine tools and EDM systems shall comply with GB/T 15706-2012.

The design is based on the principle of [the principle of design].

The requirements of this document apply to the designers, manufacturers, suppliers, and importers of the machine tools described within the scope.

This document also includes a list of items that the manufacturer intends to provide to the user.

Machine tool safety EDM machine tools

1 Scope

This document specifies the safety requirements and protective measures for electrical discharge machining (EDM) machine tools and EDM systems, for example.

---Manually controlled EDM forming machine tools or EDM small hole machining machine tools;

---Numerical control electrical discharge forming machine tool or electrical discharge small hole machining machine tool;

--- Numerical control wire electrical discharge machine tool.

This document also provides information from the manufacturer to the user. This document considers the EDM machine tools and EDM systems in...

Intended use and reasonably foreseeable misuse in normal workshop and non-explosive environments, including transportation, installation, commissioning, maintenance, repair, and Dismantling for relocation and disposal.

This document applies to electrical discharge machining (EDM) machine tools and EDM systems, but not to arc erosion and electrochemical machining equipment.

It is also suitable for auxiliary equipment in the electrical discharge machining process.

This document relates to electrical discharge machining (EDM) machine tools and EDM systems used under conditions of intended and reasonably foreseeable misuse by the

manufacturer.

The relevant major dangers, dangerous situations, or dangerous events.

This document applies to machine tools manufactured after the date of this document's publication.

This document defines the necessary levels and safety categories for safety-related components of electrical discharge machining (EDM) machine tools and EDM systems.

The system is defined in GB/T 16855.1-2018.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 3768-2017 Acoustic sound pressure method for determining the sound power level and sound energy level of a noise source using the envelope measurement surface above the reflecting surface.

The simplified method (ISO 3746:2010, IDT) GB 4824-2019 Limits and methods of measurement for radio frequency interference characteristics of industrial, scientific and medical devices (EN55011:2016, IDT) GB/T 5226.1-2019 Electrical Safety of Machinery - Electrical Equipment of Machinery - Part 1: General Technical Conditions (IEC 60204-1. 2016, IDT)

GB/T 7932-2017 General rules and safety requirements for pneumatic systems and their components (ISO 4414:2010, IDT) GB/T 8196-2018 General requirements for the design and manufacture of fixed and movable protective devices for mechanical safety.

(ISO 14120:2015, IDT) GB/T 12265-2021 Minimum spacing for preventing crushing of human body parts in machinery (ISO 13854:2017, IDT) GB/T 12668.502-2013 Speed-regulating electrical drive systems - Part 5-2.Safety requirements (IEC 61800-5-2) 2007, IDT) GB/T 15706-2012 General principles for safety design of machinery. risk assessment and risk reduction (ISO 12100:2010, IDT) GB/T 16754-2021 Design principles for emergency stop functions of machinery (ISO 13850:2015, IDT) GB/T 16855.1-2018 Safety-related components of mechanical safety control systems - Part 1: Design principles (ISO 13849-1. 2015, IDT)

GB/T 16855.2-2015 Safety-related components of mechanical safety control systems - Part