



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

GB/T 5226.1-2019

**Electrical safety of machinery -- Electrical equipment of
machines -- Part 1: General requirements**

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Foreword

GB/T 5226 Electrical Safety of Machinery - Electrical Equipment of Machines is divided into the following parts.

---Part 1.General Requirements;

---Part 6.Requirements for Construction Machinery;

---Part 7.Requirements of Industrial Robot;

---Part 11.Requirements for HV Equipment for Voltages above 1,000 V a.c. or

1,500 V d.c. and not Exceeding 36 kV;

---Part 31.Particular Safety and EMC Requirements for Sewing Machines, Units and Systems;

---Part 32.Requirements for Hoisting Machines;

---Part 33.Requirements for Semiconductor Fabrication Equipment

---Part 34.Requirements for Machine Tools.

This Part is Part 1 of GB/T 5226.

This Part was drafted in accordance with the rules in GB/T 1.1-2009.

This Part serves as a replacement of GB 5226.1-2008 Electrical Safety of Machinery - Electrical Equipment of Machines - Part 1.General Requirements. In comparison with GB 5226.1-2008, the main technical changes are as follows.

---Related factors that need to be reduced for equipment used at high altitudes are added (see 4.4.5);

---When the power supply disconnecting device is a plug / socket combination, relevant requirements are put forward (see 5.3.3);

---New requirements are put forward for the operating device of the power supply disconnecting device (see 5.3.4);

---Automatic disconnection of supply is used as protection to put forward specific requirements for power systems with different grounding forms (see 6.3.3);

---The requirements for determining short-circuit current rating of electrical equipment are put forward (see 7.10);

---More provisions are made for protective bonding circuit (see 8.2);

---Many control functions are added, for example, the capability of monitoring wireless control system in machinery control (see 9.2);

---The protection of control circuit faults has been specified in more detail (see 9.4.3);

---Brand-new provisions are made for technical documentation (see Chapter 17);

---New requirements are made for the installation method of wires and cables (see Annex D);

---Annex H is added; measures of reducing electromagnetic effects are specifically discussed (see Annex H);

---Annex I is added to provide users with relevant information (see Annex I).

This Part adopts the Translation Method in the equivalent adoption of IEC 60204-

1.2016 Safety of Machinery - Electrical Equipment of Machines - Part 1.General Requirements.

The Chinese documents that have consistent correspondence with the International documents in Normative References of this Part are shown in Annex NA.

This Part makes the following editorial modifications.

---The title of the standard is modified into Electrical Safety of Machinery - Electrical Equipment of Machines - Part 1.General Requirements;

---Informative Annex NA is added.

This Part was proposed by China Machinery Industry Federation.

This Part shall be under the jurisdiction of National Technical Committee 231 on Electrical Systems of Industrial Machinery of Standardization Administration of China (SAC/TC 231).

The drafting organizations of this Part. National Machine Tool Quality Supervision and Inspection Center; GOOGOLTECH (Shenzhen) Co., Ltd.; Beijing DAHAO Technology Corp., Ltd.; Guangdong Testing Institute of Product Quality Supervision; Beijing JINGWEI Textile Machinery New Technology Co., Ltd.; Zhejiang Institute of Mechanical & Electrical Engineering Co., Ltd.; Shanghai Electric Group Co., Ltd. Central Academy; ZOOMLION Co., Ltd.; Zhejiang Kaida Machine Tool Co., Ltd.; Jining KeLi Photoelectronic Industrial Co., Ltd.; Ningbo Techmation Co., Ltd.; Zhejiang Qixing Electron Co., Ltd.; Center Testing International Group Co., Ltd.; Caterpillar (China) Investment Co., Ltd.; China Quality Certification Center; Qingdao Hongda Textile Machinery Co., Ltd.; PILZ Industrial Automation (Shanghai) Co., Ltd.

1 Scope

This Part of GB/T 5226 applies to electrical, electronic and programmable electronic

equipment and systems to machines not portable by hand while working, including a group of machines working together in a coordinated manner.

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 16754-2008 Safety of Machinery - Emergency Stop - Principles for Design (ISO 13850:2006, IDT)

GB/T 16895.3-2017 Low-voltage Electrical Installations - Part 5-54.Selection and Erection of Electrical Equipment - Earthing Arrangements and Protective Conductors (IEC 60364-5-54:2011, IDT)

GB/T 16895.5-2012 Low-voltage Electrical Installations - Part 4-43.Protection for Safety - Protection against Overcurrent (IEC 60364-4-43:2008, IDT)

GB/T 16895.6-2014 Low-voltage Electrical Installations - Part 5-52.Selection and Erection of Electrical Equipment - Wiring Systems (IEC 60364-5-52:2009, IDT)

GB/T 16895.21-2011 Low-voltage Electrical Installations - Part 4-41.Protection for Safety - Protection against Electric Shock (IEC 60364-4-41:2005, IDT)

GB/T 16895.22-2004 Electrical Installations of Buildings - Part 5-53.Selection and Erection of Electrical Equipment - Isolation, Switching and Control - Section 534. Devices for Protection against over-voltages (IEC 60364-5-53:2001, IDT)

GB/T 16895.23-2012 Low-voltage Electrical Installations - Part 6.Verification (IEC 60364-6:2006, IDT)

3.1 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1 Actuator

Part of a device to which an external action is to be applied.