

ICS 25.160.30

CCS J 64



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

GB 15578-2026

Replacing GB 15578-2008

**Resistance welding machine - Safety requirements
(English Translation)**

Issued on: July 30, 2026

Implemented on: February 1, 2027

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

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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 replaces GB 15578-2008 "Safety Requirements for Resistance Welding Machines". Compared with GB 15578-2008, the only changes are structural adjustments and editing.

Aside from the sexual alterations, the main technical changes are as follows.

- a) The requirements related to power supply have been removed (see section 4.2 of the.2008 edition);
- b) Recommended conditions for thermal performance testing have been added (see 5.1);
- c) The accuracy requirements for measuring instruments have been changed (see 5.2,.2008 version 5.2);
- d) Added requirements for the order of type testing (see 5.3);
- f) The "Table 2 Minimum Creepage Distance" has been modified (see 6.2.3, 6.1.3 in the.2008 version);
- g) Table 3 Insulation Resistance has been amended (see 6.2.4, 6.1.4 in the.2008 edition);
- h) The "Table 4 Dielectric Strength Test Voltage" has been changed (see 6.2.5, 6.1.5 in the.2008 edition);
- i) Added requirements regarding contact current in welding circuits (see 6.2.6);
- j) Additional requirements for liquid cooling have been added (see 6.2.7);
- k) Increased rated open-circuit voltage at the output terminal, enclosure or shield protection, current of the protective conductor during normal operation, and normal operating conditions.

Contact current and other related requirements (see 6.3);

l) Added relevant requirements for protection against electric shock (indirect contact) in fault conditions (see 6.4);

m) Additional user requirements have been added (see 6.5);

n) Additional requirements regarding input voltage have been added (see 6.6);

o) Added relevant requirements for welded circuit conductors (see 6.7);

p) The test conditions for the temperature rise test have been changed (see 7.1.1, 7.1.1 in the 2008 version);

q) Added recording requirements for the resistance method (see 7.2.3);

r) The temperature rise limits for windings in Table 6 have been changed (see 7.3.1, 2008 version of 7.3.1);

s) Additional requirements for the outer surface have been added (see 7.3.2);

t) Added relevant requirements for preventing heat hazards (direct contact) during normal use (see 7.4);

u) Added requirements related to non-routine operations (see Chapter 8);

v) Increased protection requirements against mechanical hazards (see Chapter 9);

w) Some requirements for the instruction manual and labeling have been changed (see Chapter 10, Chapter 13 of the 2008 edition);

This document is modified to adopt IEC 62135-1:2015 "Welding resistance equipment - Part 1. Safety requirements for design, manufacture and installation".

Compared with IEC 62135-1:2015, this document has undergone the following structural adjustments.

---Chapter 11 has been added.

The technical differences between this document and IEC 62135-1:2015, and the reasons therefor, are as follows.

---Added "Safety Requirements for the Use of Weld Resistance Welding Equipment" and added normative references GB 9448-2025 and GB/T 40248.

(See Chapter 11) To ensure the safe use of welding equipment in densely populated areas;

---GB/T 5226.1-2019 has replaced the superseded IEC 60204-1:2005 (see 6.4.1.1) for ease of standard use;

---IEC 60364-4-41:2005 (see 6.4.1.2) has been replaced with GB/T 16895.21-2020 for ease of standard use;

---IEC 60417.2011DB, which had been superseded, has been replaced by IEC 60417.2011DB (see 7.4.2, 10.3) to facilitate standardization.

use;

---GB/T 16935.1-2023 has replaced the superseded IEC 60664-1.2007 (see 6.2.2 and 6.2.3) to facilitate standardization.

use;

---The obsolete ISO 8205-1 and ISO 8205-2 have been removed.

The following editorial changes have been made to this document.

---The standard name has been changed to "Safety Requirements for Resistance Welding Machines";

---The description of the scope of application of the standard has been revised, and the informative reference IEC 62135-2 has been replaced with GB/T 31251.2.

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 and is under the jurisdiction of the Ministry of Industry and Information Technology of the People's Republic of China.

The release history of this document and the document it replaces is as follows.

---This is the second revision.

Safety requirements for resistance welding machines

1 Scope

This document specifies the safety requirements for the design, manufacture, and installation of resist welding equipment. However, it does not include all non-electrical safety requirements (e.g.,

(Noise, vibration).

This document applies to stationary and mobile equipment used in solder resist and similar processes, including those loaded and/or started manually or automatically.

Single and multiple welding workstations.

This document does not include electromagnetic compatibility requirements for resist welding equipment, which are specified in GB/T 31251.2.

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 5226.1-2019 Electrical Safety of Machinery - Electrical Equipment of Machinery - Part 1.General Technical Conditions (IEC 60204-1.

2016, IDT)

GB 9448-2025 Safety of Welding and Cutting

GB/T 16895.21-2020 Low-voltage electrical installations - Part 4-41.Protection against electric shock (IEC 60364-4-41)

2017, IDT)

GB/T 16935.1-2023 Insulation Coordination of Equipment in Low-Voltage Power Supply Systems - Part 1.Principles, Requirements and Tests

(IEC 60664-1.2020, IDT)

ISO 669 Mechanical and electrical requirements for resistance welding equipment.

Note: GB/T 8366-2021 Mechanical and electrical requirements for resistance welding equipment (ISO 669.2016, IDT)

ISO 13849-1 Safety of machinery - Safety control systems - Part 1.General design principles

Note: GB/T 16855.1-2025 Safety of machinery - Safety control systems - Part 1.Design principles (ISO 13849-1.2023, IDT)

Note: GB/T 16895.21-2020 Low-voltage electrical installations - Part 4-41.Protection against electric shock (IEC 60364-4-41.2017, IDT)

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Note: GB/T 16895.23-2020 Low-voltage electrical installations - Part 6.Inspection (IEC 60364-6.2016, IDT)

Note: GB/T 5465.2-2023 Graphical symbols for electrical equipment - Part 2.Graphical symbols (IEC 60417 Database. 2023-03, IDT)

IEC 60445 Basic and safety rules for human-machine interface markings. marking of equipment terminals, conductor terminations and conductors.