

ICS 29.160.30

CCS K 23



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

GB/T 6656-2025

Replacing GB/T 6656-2008

D.C. ferrite permanent magnet motors

铁氧体永磁直流电动机

Issued on: October 31, 2025

Implemented on: May 1, 2026

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

Table of Contents

1.Scope	1
2 Normative References	1
3.Terms and Definitions	1
4.Types, Basic Parameters and Dimensions	1
5 Technical Requirements	7
6.Test Methods	16
7.Inspection Rule	21
8.Marking, Packaging, Storage and Transport	22
23 Table A.1 Spark Rating Classification	24

Foreword

This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting is scheduled. This document replaces GB/T 6656-2008 "Ferrite Permanent Magnet DC Motors". Compared with GB/T 6656-2008, the only changes are structural adjustments. Aside from editorial changes, the main technical changes are as follows: --Added motor outer diameter designation (see 4.1); --Added specific requirements for short-time work and periodic work schedules in the quota system (see 4.4); -- The limit deviations of the key have been changed (see 4.8,

3.10 in the.2008 edition). --The power supply ripple factor has been changed, and a measurement method has been added (see 5.3, 6.2,

5.1.4 in the.2008 version). --Changed speed tolerance and efficiency tolerance requirements (see 5.10,

4.8 in the.2008 edition). --The temperature rise test requirements have been changed (see 5.11,

5.6 in the.2008 edition). --Insulation resistance requirements and test methods have been changed (see 5.12, 6.8, and 4.12,

5.8 in the.2008 edition). --The withstand voltage requirements and test methods have been changed (see 5.14, 6.10, 4.13,

5.9 in the.2008 edition). --The requirements for low-temperature testing have been changed (see 5.17,

4.16 in the.2008 edition). --High-temperature testing requirements have been added (see 5.18); --The noise limit requirements have been changed (see 5.19, 4.17 in the.2008 edition). --The vibration test requirements have been changed (see 5.20, 4.18 of the.2008 edition). --The axial clearance test method has been changed (see 6.21, 5.2.2 of the.2008 version). 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 Electrical Equipment Industry Association. This document is under the jurisdiction of the National Technical Committee on Standardization of Rotating Electrical Machines (SAC/TC 26). This document was drafted by: China Electric Power Research Institute Co., Ltd., Zhejiang Lianyi Electric Motor Co., Ltd., and Jingma Electric Motor Co., Ltd. Company, Midea Group Co., Ltd., New Thinking Motor Co., Ltd., Zhejiang Permanent Magnet Motor Co., Ltd., Taizhou Jinyu Electromechanical Co., Ltd. The company, Zhuhai Kaibang Motor Manufacturing Co., Ltd., Weikai Certification & Testing Co., Ltd., Guangdong Haotaitai Technology Group Co., Ltd., Guangdong Shangyan Electronic Technology Co., Ltd., Ningbo Hengshuai Co., Ltd., Changzhou Haosheng Electric Co., Ltd., and Yuyao Aosheng Electric Machinery Co., Ltd. Manufacturing Co., Ltd., Weikai Testing Technology Co., Ltd., Zhejiang Samsung Electro-Mechanics Co., Ltd., Changzhou Fulin Zhongdian Intelligent Technology Co., Ltd. Ningbo Jinchang Electromechanical Technology Co., Ltd., Zhuoerbo (Ningbo) Precision Electromechanical Co., Ltd., Harbin University of Science and Technology, General Machinery Key Core Core Components Innovation Center (Anhui) Co., Ltd., Hangzhou Nazhi Motor Co., Ltd., Zhejiang Shengyue Electronic Technology Co., Ltd., Zhejiang Electromechanical Vocational College Vocational and Technical University, Zhejiang Hongda Group Wenling Dafeng Electric Co., Ltd., Hunan Guomeng Technology Co., Ltd., Shenzhen Zhongqu Electric Co., Ltd. Limited Liability Company, Huaxing Transmission Technology Wuxi Co., Ltd., Huizhou Aimeijia Magnetolectric Technology Co., Ltd., Kleber Motor (Ningbo) Co., Ltd. The company, Yuyao Chili Motor Co., Ltd., Jiaxing Weikai Testing Technology Co., Ltd., Guangdong Bangze Chuangke Electric Co., Ltd., Shenzhen Shisheng High-Tech Power Co., Ltd., Huzhou Yueqiu Electric Co., Ltd., Ningbo Jingcheng Electric Co., Ltd., Guangdong Baoyuantong Testing Equipment Co., Ltd. The company, Kunshan Pindai Electronics Co., Ltd., Zhejiang Sanxing Electric Technology Co., Ltd., Shanghai Representative Office of the International Copper Professionals Association (USA), Zhejiang Jia Hong Tools Manufacturing Co., Ltd., and Dongguan Yuncheng Metal & Plastic Products Co., Ltd. The main drafters of this document are. Wei Zhonghua, Cheng Lei, Du Juan, Zhu Zhongjie, Ren Zhiwen, Xie Feng, He Sijian, Ding Wei, Luo Junbo, and Qi Lingjun. Zhou Liang, Zhang Chuanjia, Lu Gaofeng, Liu Peihai, Zhang Wei, Chen Chen, Li Xianzhang, Xiao Qianjin, Chen Siyu, Wang Chengyong, Han Jichao, Zhang Huaxin, Yang Xubin, Chen Feng, Zhao Ruyou, Liu Deguang, Zhong Pingxian, Mei Yuanpu, Lei Xiqiang, Luo Longqing, Zhou Manxin, Yin Zhichun, Zhou Jin, Shao Mingyuan, Huang Jiasheng, Chen Baiqing Wu Yinggui, Liang Dong, Song Xiaochen, Wu Xianquan, Liu Jing. The release

history of this document and the document it replaces is as follows: --First published in 1986 as GB/T 6656-1986, and revised for the first time in 2008; --This is the second revision. Ferrite permanent magnet DC motor

1 Scope

GB/T 6656-2025 is the Chinese national standard covering the brushed DC motor with ferrite magnets - the cheap, ubiquitous motor in car window lifts, fans and power tools - with its rating and characteristics, the commutation and brush life, the noise, and the demagnetisation limits. Issued on 31 October 2025, it has been in force since 1 May 2026, replacing GB/T 6656-2008.

This document specifies the types, basic parameters, dimensions, and technical requirements of ferrite permanent magnet DC motors, and describes the corresponding test methods. The law stipulates inspection rules, marking, packaging, storage, transportation, and quality guarantee period. This document applies to slotted and brushed ferrite permanent magnet excitation systems with a general-purpose housing outer diameter not exceeding 160 mm. Oxide permanent magnet DC motor (hereinafter referred to as motor). Motor housing with an outer diameter greater than 160 mm or various motors derived from this series. This method can also be applied to other types of permanent magnet DC motors.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below. 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 191 Pictorial Symbols for Packaging and Storage

GB/T 755-2025 Ratings and Performance of Rotating Electrical Machines

GB/T 1971 Markings on wire ends and direction of rotation for rotating electrical machines

GB/T 1993 Cooling methods for rotating electrical machines

GB/T 2423.5 Environmental testing - Part

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4 Types, Basic Parameters and Dimensions

4.1 Outer Diameter Number The outer diameter designation of the electric motor in this document is expressed by the outer diameter of the motor housing (mm). The following 13 outer diameter grades are preferred. 20, 24, 28,... 36, 45, 55, 63, 76, 80, 90, 110, 130, 160.

chinastandards.org · PREVIEW