

JB

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

JB/T 10888-2008

**Motors for electric bicycles and similar purposes - Technical
requirements**

电动自行车及类似用途用电动机 技术要求

(English Translation)

Issued on: June 4, 2008

Implemented on: November 1, 2008

**Issued by: Ministry of Industry and Information Technology of the
People's Republic of China**

Table of Contents

Foreword	i
1 Scope	
2 Normative References	
3 Terms and Definitions	
4 Product Model, Type and Parameter	
4.1 Motor Model	
4.2 Duty System	
4.3 Rated Voltage	
4.4 Rated Power	
5 Technical Requirements	
5.1 Operation Conditions	
5.2 Appearance	
5.3 Operation	
5.4 Assembly Quality	
5.5 Lead-out Wire and Connector	
5.6 Spark on Commutator	
5.7 Rotation Direction	
5.8 Rim Strength	
5.9 Shaft Extension Diameter	
5.10 Forks Distance	
5.11 Insulation Resistance	
5.12 Voltage Withstand	
5.13 Interturn Insulation	
5.14 Over-torque	
5.15 Supply Voltage	
5.16 Temperature Rise	
5.17 Torque, Speed and Efficiency	
5.18 Low Temperature	
5.19 High Temperature	
5.20 Damp Heat	
5.21 Vibration	
5.22 Noise	

- 5.23 Protection Grade
- 5.24 Insulation Treatment
- 5.25 Grounding
- 6 Test Methods
 - 6.1 Test Conditions
 - 6.2 Appearance Inspection
 - 6.3 Operation Inspection
 - 6.4 Assembly Quality Inspection
 - 6.5 Lead-out Wire and Connector Inspection
 - 6.6 Inspection of Spark on Commutator
 - 6.7 Rotation Direction Inspection
 - 6.8 Hub Strength Test
 - 6.9 Shaft Extension Diameter Measurement
 - 6.10 Forks Distance Measurement
 - 6.11 Insulation Resistance Measurement
 - 6.12 Voltage Withstand Test
 - 6.13 Interturn Insulation Test
 - 6.14 Over-torque Test
 - 6.15 Supply Voltage Change Test
 - 6.16 Temperature Rise Test
 - 6.17 Torque, Speed and Efficiency Determination
 - 6.18 Low-temperature Test
 - 6.19 High-temperature Test
 - 6.20 Damp Heat Test
 - 6.21 Vibration Test
 - 6.22 Noise Measurement
 - 6.23 Protection Grade Test
 - 6.24 Insulation Treatment Inspection
- 7 Inspection Rules
 - 7.1 Inspection Classification
 - 7.2 Delivery Inspection
 - 7.3 Type Inspection
- 8 Marking, Packaging, Transportation and Storage
 - 8.1 Marking
 - 8.2 Packaging

8.3 Transportation

8.4 Storage

9 Quality Warranty

Annex A (Normative) Technical Requirements for Controller

A.1 Product Model

A.2 Appearance Requirements

A.3 Strength of Controller Lead-out Wire

A.4 Short-time Overload Capacity

A.5 Speed Regulating Function

A.6 Under-voltage Protection Function

A.7 Over-current Protection Function

A.8 Brake Power-off Function and Galloping Prevention Function

A.9 Insulation Resistance

A.10 High-temperature Test

A.11 Low-temperature Test

A.12 Steady-state Damp Heat Test

A.13 Enclosure Protection Performance

A.14 Temperature Rise Test

A.15 Vibration-proof Performance

A.16 Resistance to Over-voltage

A.17 Locked-rotor Protection Function

A.18 Phase Angle 60°/120° Compatibility

Annex B (Normative) Regulations on Grade of Spark on Commutator

Annex C (Informative) Derived Code of Motor

Annex D (Informative) Installation Diagram for Motor Test

Annex E (Informative) Pairing Table of Motor and Storage Battery

Figure 1 Bullet-shape Connector with All or Half-sheath

Figure 2 Schematic Diagram for Motor Lead-out Wire

Figure 3 Schematic Diagram for Brush Motor Lead-out Wire

Figure 4 Curve Chart for Motor Efficiency

Figure A.1 Wiring Diagram for Controller

Figure D.1 Installation Diagram for Motor Test

Table 1 Limiting Value for Radial Circular Runout Tolerance of Inner-rotor Motor Shaft Extension

Table 2 Limiting Value for Radial and End Face Circular Runout Tolerance of Motor

Table 3 Nominal Sectional Area of Phase Line Lead-out Wire

Table 4 Rated Torque of Motor

Table 5 Motor Efficiency

Table 6 Vibration Test Conditions

Table 7 Motor Inspection Classification and Items

Table B.1 Grading of Spark

Table E.1 Pairing of Motor and Storage Battery

1 Scope

This standard specifies the classification, type, basic parameters and dimensions, technical requirements, test methods, inspection rules and requirements for marking, packaging, storage and transportation of motors for electric bicycle and similar purpose (with battery as power drive or auxiliary drive).

This standard is applicable to motors for electric bicycle and similar purpose (with battery as power drive or auxiliary drive) running on road or site (hereinafter referred to as motors) and may also apply to motors derived from this series for reference.

2 Normative References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this standard. For dated reference, subsequent amendments (excluding corrections), or revisions, of any of these publications do not apply to this standard. However, parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

GB 755 Rotating Electrical Machines - Rating and Performance (GB 755-2000, idt IEC 60034-1:1996)

GB/T 1311 Test Procedure for Direct Current Machines (GB/T 1311-1989, neq IEEE 113:1973)

GB/T 2423.1 Environmental Testing for Electric and Electronic Products - Part 1: Test Methods - Test A: Cold (GB/T 2423.1-2001, idt IEC 60068-2-1:1990)

GB/T 2423.2 Environmental Testing for Electric and Electronic Products - Part 2: Test Methods - Tests B: Dry Heat (GB/T 2423.2-2001, idt IEC 60068-2-2:1974)

GB/T 4942.1 Degrees of Protection Provided by the Integral Design of Rotating Electrical Machines (IP code) - Classification (GB/T 4942.1-2006, IEC 60034-5:2000, IDT)