ICS 19.060
CCS N73

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 13310-2007

Replacing GB/T 13310-1991

Electrodynamic vibration generator systems

电动振动台

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Foreword

This Standard is a revision to GB/T 13310-1991 Specification for electrodynamic vibration generator systems. This Standard non-equivalently adopts the requirements for test equipment in IEC 60068-2-6.1995 Environment test - Part

2.Test method - Test Fc. Vibration (sinusoidal). The electrodynamic vibration generator systems that are manufactured according to this Standard shall also meet the requirements for vibration test equipment in MIL-STD-810F Environmental engineering consideration and laboratory test. This Standard replaces GB/T 13310-1991 Specification for electrodynamic vibration generator systems. Compared with GB/T 13310-1991, the main differences of this Standard are as follows: - Change the Standard name to be electrodynamic vibration generator systems; - Compile the Standard according to the requirements of structure and format in GB/T1.1-2000 Directives for Standardization - Part

1.Rules for the structure and drafting of Standards; adjust the structure; - Add an foreword; - The applicable scope of this Standard is changed to be "apply to vibration generator systems for test with rated excitation force under sinusoidal conditions or random excitation force being not more than 200 kN." (Chapter 1 in version 1991; Chapter 2 in this version) from "apply to vibration generator systems for test with rated excitation force under sinusoidal conditions being 50 kN or less than 50 kN"; - Add terms and definitions (see Chapter 3); - Add rated random excitation forces in basic parameters [see

5.1 b)]; - Add parameter series for vibration generator systems in basic parameters [see

5.2)]; - Technical requirements are divided into sinusoidal vibration and random vibration for vibration generator systems; in sinusoidal vibration, the table-surface transverse movement ratio, acceleration distortion and table-surface acceleration amplitude uniformity are all increased with vibration generator system indicators being more than 50 kN. Add technical requirements to random vibration for vibration generator systems (see

6.2 and 6.3); - Add requirements to electrical safety, safety protection and auxiliary cooling devices of vibration generator systems (see 6.4); Electrodynamic vibration generator systems

1 Scope

GB/T 13310-2007 is the Chinese national standard on electrodynamic vibration generator systems, in the field of testing. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 11 October 2007 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 December 2007. Classification: ICS 19.060, CCS N73. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Standard specifies the general requirements, basic parameters, technical requirements, inspection methods, inspection rules and others of electrodynamic vibration generator systems (hereinafter referred to as vibration-generator-systems). This Standard applies to vibration-generator-systems for test with rated excitation force under sinusoidal conditions or random excitation force being not more than 200 kN. For vibration-generator-systems with excitation force being more than 200 kN, an agreement shall be made by the user and manufacturer or the supplier through negotiation according to this Standard.

2 Normative references

The articles contained in the following documents have become part of this document when they are quoted herein. For the dated documents so quoted, all subsequent modifications (including all corrections) or revisions made thereafter do not apply to this Standard. However, the parties who reach an agreement according to this Standard are encouraged to study whether the latest versions of these documents may be used. For the undated documents so quoted, the latest versions (including all modification sheets) apply to this document.

GB/T 2298 Mechanical vibration and shock - Terminology (GB/T 2298-1991, neq ISO 2041.1990)

GB/T 2611-2007 General requirements for testing machines

JB/T 6147-2007 Requirements for the packaging marking and handling of testing machine products

3 Terms and definitions

For the purpose of this document, the terms and definitions established in GB/T 2298 shall apply.

3.1 Rated mass The maximum test mass specified in relevant technical documents.

3.2 Rated excitation force under sinusoidal conditions The minimum value in all maximum excitation force under sinusoidal conditions under different test masses.

3.3 Rated sinusoidal acceleration The maximum acceleration allowed by the table-surface under normal work.

3.4 Limit characteristic The limit value of the displacement-speed-acceleration that changes along with different test masses; it is usually expressed by limit curve.

3.5 Rated frequency range Limit characteristic curve range from the minimum frequency to the maximum frequency.

3.6 Rated random excitation force The minimum value of random excitation force under any test mass. This force corresponds to the power spectral density of constant acceleration between the upper frequency limit and the lower frequency limit.

4 Vibration-generator-systems' composition One vibration-generator-systems is composed by the following parts.

a) vibration-generator-systems body;

b) Power amplifier;

c) Vibration control instrument (can be configured according to requirements of the user);

d) Cooling fan or heat exchanger and other auxiliary equipment.

c) The change of power supply voltage is within ±10% of the rated voltage.

5 Hz <=f<=

50 Hz, the maximum allowable value is ±

6.2 Sinusoidal vibration

6.2.1 Frequency indication error Within the specified frequency range, the frequency of the vibration-generator-systems can be adjusted continuously and the frequency indication error is. - When

6.3 Random vibration

6.3.1 Dynamic range of acceleration control spectrum for random vibration The dynamic range of random acceleration power spectrum control for vibration-generator-systems (set the spectrum dynamic range 40 dB) shall not be less than 35 dB.

6.3.2 Root mean square value of acceleration indication error The maximum allowable error of the root mean square value of random acceleration indication of vibration-generator-systems is ±10%.