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

GB/T 10069.1-2006

**Measurement of airborne noise emitted by rotating electrical machines
and the noise limits -- Part 1: Method for the measurement of airborne
noise emitted by rotating electrical machines**

(English Translation)

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Foreword

GB/T 10069 "Measurement of the airborne noise emitted by rotating electrical machines and the noise limits" is currently composed the following two parts.

- Part 1.Measurement of the airborne noise emitted by rotating electrical machines and the noise limits - Part 1.Method for the measurement of airborne noise emitted by rotating electrical machines;
- Part 2.Measurement of the airborne noise emitted by rotating electrical machines and the noise limits - Part 2.Noise limit.

This part is part 1, which replaces GB/T 10069.1-1988 "Engineering method for the measurement of airborne noise" AND GB/T 10069.2-1988 "Survey method for the measurement of airborne noise" from the date of implementation. This part, through modification, adopts the ISO 1680.1999 "Acoustics - Test code for the measurement of airborne noise emitted by rotating electrical machines".

The contents are basically consistent. BUT in this part, it adds only the appendix on the provisions for simplifying measuring points in the context of an approximate free field and the appendix of testing the load noise with vibration

speed method.

Appendix A ~ Appendix D are normative.

This part was proposed by AND shall be under the jurisdiction of the National Standardization Technical Committee on Rotary Motor (SAC/TC 26).

The drafting organizations of this part. Shanghai Electric Institute of Science and Technology, Guangzhou Electric Institute of Science and Technology, Harbin Institute of Electrical Motor, CCRI Shanghai Branch Test Center, Shanghai Institute of Aerospace Measurement and Control Technology, Beijing Bijie Motor Co., Ltd., Hebei Motor Co., Ltd., Chongqing Sailimeng Motor Co., Ltd., Anhui Wannan Motor Co., Ltd., Zhejiang Jinlong Motor Technology Co., Ltd.

The drafters of this part. Chen Ye shao, Shi Qingyuan, Zhong Zhigang, Zhang Jian, Luo Xueping, Mu Jingkun, Cai Jiagang, Bu Yunjie, Lin Longshou, Pan Xudong, Ye Jinwu, Zhang Zhenlan.

This Standard replaces the standard previously issued as follows.

- GB/T 2806-1981;
- GB/T 10069.1-1988, GB/T 10069.2-1988.

1 Scope

This part specifies all the information necessary to carry out efficiently and under standardized conditions the determination, declaration, and verification of the noise emission characteristics of rotating electrical machines.

2 Normative references

The provisions in following documents become the provisions of this part through reference in GB/T 10069. For the dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this part; however, parties who reach an agreement based on this part are encouraged to study if the latest versions of these documents are applicable.

3 Terms and definitions

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

4 Description of machinery family

This part is applicable to self-standing rotating electrical machines, i.e., motors and generators (DC and AC machines), without any limitation on the output or voltage, AND with any linear dimensions.

5 Sound power determination

The usable basic standards are mainly distinguished by the following.

6 Installation and mounting conditions

The highest natural frequency of the system consisting of the support device and the machine under test shall be lower than 1/3 of the frequency corresponding to the lowest rotational speed of the machine.

The mass of the support shall be at least twice that of the machine under test.

7 Operating conditions

The machine under test shall be monitored over the whole range of operating speeds to determine the speed generating the maximum noise level. To find this level, a low speed variation shall be applied. This condition shall be used for the noise test and the speed reported in the results.

8 Measurement uncertainty

The measurement uncertainty is dependent on the reproducibility standard deviation as given in Table 2 and the expected confidence level. For example, when the sound power level is in normal distribution AND the confidence level is 90%, then the true value of the sound power of this sound source will be within the range of the measured value $\pm 1.645\sigma_R$; when the confidence level is 95%, it will be within the range of the measured value $\pm 1.95\sigma_R$.

9 Determination of the emission sound pressure level

a The atmospheric conditions had been considered in the standard wherein the level 1 method is

specified.

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