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

GB/T 21271-2026

Replacing GB/T 21271-2007

Vacuum technology - Noise measurement for vacuum pumps

真空技术 真空泵噪声测量

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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/T 21271-2007 "Vacuum Technology - Measurement of Noise in Vacuum Pumps". Compared with GB/T 21271-2007, it includes the following improvements. Aside from structural adjustments and editorial changes, the main technical changes are as follows:

---The scope of the document has been changed (see Chapter 1, Chapter 1 of the.2007 edition);

---The term "noise emission indicator" and its definition have been removed (see 3.12 of the.2007 edition);

---A new chapter on "Symbols" has been added (see Chapter 4);

---The requirements for the testing environment have been changed (see 5.1, 4.1 in the.2007 version);

---The background noise standard has been changed (see 5.3, 4.3 in the.2007 version);

---Added requirements for microphones, hoods, and standard sound sources (see 6.1);

---The acoustic requirements in the test report have been changed (see Chapter 10,

Chapter 9 of the.2007 edition);

---The appendix nature of "Methods for Acoustic Environment Assessment" has been changed (see Appendix A, Appendix D of the.2007 edition);

---The nature of the appendix for "Sound Power Level Measurement of Vacuum Pumps" has been changed (see Appendix B, Appendix C of the.2007 edition);

1 Scope

GB/T 21271-2026 is the Chinese national standard covering measuring the noise of a vacuum pump - the microphone positions and the room, the operating conditions at which the pump is measured, and the sound power level that lets a laboratory or a fab compare one machine with another. It replaces GB/T 21271-2007 and has been in force since 1 May 2026. It was issued on 28 January 2026 and has been in force since 1 May 2026, replacing GB/T 21271-2007. The document is under the responsibility of the China Machinery Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document describes the measurement methods for the emission noise of vacuum pumps and their components, mainly including the following two items.

---Sound power level under load conditions;

---The sound pressure level emitted at the working position under load conditions. This document specifies the acoustic environment, measuring instruments, installation, load, and operation of vacuum pumps and their components when measuring noise. Requirements for operating conditions, test reports, and the labeling and verification of noise emission values. This document applies to noise measurement of mechanical vacuum pumps and their components (hereinafter referred to as pumps). This document does not describe the division of octave bands. However, this document also applies when it is related to analysis.

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 3241 Electroacoustic octave and fractional octave filters

GB/T 3785.1-2023 Electroacoustic sound level meters - Part

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 vacuum pump Devices for generating, improving and/or maintaining a vacuum.

Note. A vacuum pump consists of a pump, a drive unit, and auxiliary components supplied with the vacuum pump.

3.2 launch Airborne sound radiated by a specific noise source (such as the pump under test) under specific operating and installation conditions.