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

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**Liquid pumps and pump units - Noise test code - Grades 2 and
3 of accuracy**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

The translation method used in this standard is equivalent to ISO 20361.2019 "Liquid Pumps and Pump Unit Noise Test Methods Level 2 and Level 3".

The Chinese documents that have a consistent correspondence relationship with the normatively cited international documents in this standard are as follows.

---GB/T 14574-2000 Labeling and verification of noise emission values of acoustic machinery and equipment (eqvISO 4871.1996)

For ease of use, this standard has made the following editorial changes.

--- Deleted the URL guide in Chapter 3 of ISO 20361.2019;

--- Change "h" in Figure 6 to "h1".

This standard was proposed by the China Machinery Industry Federation.

This standard is under the jurisdiction of the National Pump Standardization Technical

Committee (SAC/TC211).

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Introduction

The noise generated by the pump unit can pass through the pump body, drive system (e.g. motor, gearbox, coupling), piping system and all connecting parts.

Radiation around.

In the scene, due to the reverberation effect or external noise source radiation, the perceived noise may be significantly enhanced.

The noise of the pump depends on the type of pump. It is very useful to understand the following noise characteristics of the pump.

- a) The noise of the pumping system (including pipelines);
- b) The noise of the pump unit, including the prime mover and transmission components, but not the noise of the piping system;
- c) The noise of the pump does not include the noise generated by the prime mover, transmission components and pipelines;
- d) The noise of each component obtained with specific requirements or with noise isolation devices.

This standard specifies the measurement method for the noise emitted by the pump unit [b)] or pump [c)]. Use the sound power level of the machine and the emission of the relevant operating point

The sound pressure level represents the emitted noise (see 6.2).

This standard enables manufacturers to achieve the following goals.

- Demonstrate the effectiveness of equipment noise reduction;
- Mark the noise emission level of the equipment.

This standard belongs to Class C standard in ISO 12100.

This standard is particularly closely related to the following market participants involved in machinery safety.

- Equipment manufacturers (small, medium and large enterprises);
- Health and safety agencies (regulatory, accident prevention and market supervision agencies, etc.).

The safety level achieved by the equipment specified by the above-mentioned participants through document means may affect the following personnel.

- Equipment users/employers (small, medium and large enterprises);
- Equipment users/employees (e.g. labor unions, organizations representing special needs groups);
- Service providers, such as repairs (small, medium and large enterprises);
- Consumers (in the case of consumers using the device).

The above-mentioned participants may have participated in the drafting process of this standard, the equipment involved and the hazards, hazardous conditions or hazardous events generated

The degree is within the scope of this standard.

When the terms in the C-type standard are different from the terms in the A or B-type, the C-type standard terms can be used first.

The involved pumps and their noise limits are the contents of this standard.

Noise test methods for liquid pumps and pump units

Level 2 and Level 3

1 Scope

This standard specifies the relevant information for the effective implementation of the noise test of liquid pumps or pump units (see 4.1) and the air emitted by them under standard conditions.

Noise measurement, labeling and verification methods, as well as liquid pump or pump unit

noise measurement methods, test operation and equipment conditions.

Noise emission characteristics include sound power level and emission sound pressure level at a specified point. The determination of these quantities can be used to.

---Mark the noise emission value;

---Control of noise sources in the design stage.

The measurement of these quantities is also necessary to compare with the noise of liquid pumps on the market.

The application of this standard can ensure the reproducibility of the measurement of air noise emission characteristics within a certain limit, which is determined by the Air Noise Measurement Institute.

The accuracy level of the method is used to determine. The noise measurement methods covered by this standard include engineering method (level 2) and simplified method (level 3).

This standard does not apply to structural and liquid-conducted liquid pump noise.

Note. For the noise measurement of pumps or pump units specified in this standard, see EN809 A1.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 3767-2016 Acoustic sound pressure method to determine the sound power level and sound energy level of the noise source. Approximate free field above the reflective surface.

Process method (ISO 3744.2010, IDT)

GB/T 3768-2017 Acoustic sound pressure method is used to determine the sound power level and sound energy level of noise sources using the envelope measurement surface above the reflecting surface

The simple method (ISO 3746.2010, IDT)

GB/T 6881.2-2017 Acoustic sound pressure method to determine the sound power level and sound energy level of noise sources. Small movable sound sources in the reverberation field

Engineering method hard wall test room comparison method (ISO 3743-1.2010, IDT)