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

GB/T 43073-2023

**Pneumatic fluid power - Test methods for measuring acoustic
emission pressure levels of exhaust silencers**

气动 测量排气消声器声压级的试验方法

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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 is equivalent to ISO.20145.2019 "Test Method for Pneumatic Measurement of Sound Pressure Level of Exhaust Mufflers". This document has made the following minimal editorial changes.

---Corrected the error in ISO.20145.2019 and changed "ISO 4871" to "ISO 4871.1996";

---Corrected a few editorial errors in ISO.20145.2019, changed the formula "log" in the text to "lg"; changed the description of 5.4.2 "4 measuring point n°3" is changed to "4 measuring point 1", "5 measuring point n°2" is changed to "5 measuring point 2", "6 measuring point n°6" is changed to "6 measuring point Measure point 3";

---Corrected the unit error in ISO.20145.2019, changing "dB(A)" to "dB";

---Corrected the symbol error in ISO.20145.2019, changed "K2" to "K2A"; changed the symbol of "time average emission sound pressure level" "LAeq" is changed to "Lp,T";

---Change the pressure unit "bar" to "kPa". Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is proposed by China Machinery Industry Federation. This document is under the jurisdiction of the National Hydraulic and Pneumatic Standardization Technical Committee (SAC/TC3). This document was drafted by: Jiaying Mike Pneumatic Equipment Co., Ltd., National Pneumatic Product Quality Inspection and Testing Center, Hefei Huiling Automobile Parts Parts Co., Ltd., Ningbo Interling Pneumatic Technology Co., Ltd., Zhejiang Houde Pneumatic Components Co., Ltd., Ningbo Fenghua

District Pneumatic Industry Association Association, Tianjin University, Jiangsu University, Ningbo Sonuo Industrial Automation Equipment Co., Ltd., Shenzhen Partner Pneumatic Precision Machinery Co., Ltd., Beijing Aviation Aerospace University, China University of Mining and Technology, Beijing Institute of Machinery Industry Automation Co., Ltd. The main drafters of this document. Wang Jizhou, Mao Xinqiang, Ying Nan, Jiang Minghai, Lin Kaifeng, Huang Shunli, Mao Xubo, Zhao Ling, Qian Pengfei, He Jiansong, Yu Ruyang, Shi Yan, Meng Deyuan, Chen Xueqin, Cao Qiaohui.

This document is intended to provide a general framework for industrial companies to evaluate the sound pressure levels of pneumatic exhaust mufflers. This document defines two methods for measuring sound pressure levels in exhaust mufflers. Pneumatic equipment manufacturers can comply with ISO 6358-1 and These methods are applied on the test bench of ISO 6358-2. Test method for pneumatic measurement of exhaust muffler sound pressure levels

1 Scope

GB/T 43073-2023 gives the test method for measuring the sound pressure level emitted by pneumatic exhaust silencers, equivalent to ISO 20145. Compressed air exhaust is the dominant noise source in most assembly plants: every cylinder stroke ends with a blast of air to atmosphere, and with hundreds of valves firing continuously the result routinely exceeds the exposure limits. Silencers are sold on a decibel reduction that has been measured however the maker chose, which is what makes a common method worth having. The standard sets the terms, symbols and units, the test conditions, the test procedure, the expression of the results and the marking instructions, with an informative annex on the measurement uncertainty. It took effect on 7 September 2023.

This document describes two test methods for measuring the sound pressure level of exhaust mufflers.

---The first method is called the "steady-state mode method" and is designed to evaluate the noise level at steady-state flow when the upstream pressure is constant (ISO 6358-

1 Steady state test);

---The second method is called the "bleed mode method" and is designed to measure the noise level during the upstream pressure drop (emissions of ISO 6358-2 test). This document applies to pneumatic exhaust silencers and devices designed to reduce noise generated by compressed air emissions, in accordance with ISO 6358-1 and application scope specified by ISO 6358-2.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations For undated

referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 14574-2000 Labeling and verification of noise emission values of acoustic machines and equipment (eqv ISO 4871.1996)

GB/T 14513 (all parts) Determination of flow characteristics of compressible fluid components used in pneumatics [ISO 6358 (all parts)]

ISO 11202 Noise emitted by acoustic machines and equipment Determination of noise at work and other specified locations using approximate environmental corrections

GB/T 17248.3-2018 Noise emitted by acoustic machines and equipment uses approximate environmental correction to determine the emission at working positions and other designated positions. Radiated sound pressure level (ISO 11202.2010, IDT)

IEC 60942 Electroacoustics-Soundcalibrators

GB/T 15173-2010 Electroacoustic Sound Calibrator (IEC 60942.2003, IDT)

IEC 61260 Electroacoustics-Octave-bandandfractional-

GB/T 3241-2010 Electroacoustic octave and fractional octave filters (IEC 61260.1995, MOD) IEC 61672-