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Test Code for the Determination of Airborne Noise Level of Hydraulic Pumps

液压泵空气传声噪声级测定规范

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Foreword

This Standard equivalently adopts international standard ISO 4412-1:1991 *Hydraulic Fluid Power; Test Code for Determination of Airborne Noise Levels - Part 1: Pumps*. This Standard's technical content remains unchanged with ISO 4412-1:1991, while its narration is different from ISO 4412-1:1991. Since the referenced standard describes the acoustic test methods and instruments in details, thus some guidance appendix in ISO 4412-1:1991 shall not be used in this Standard. For ease of use, the calculation of A-weighted average sound pressure level and sound power level are additionally described in details. The terminology, quantity, quantifier name, and symbols adopted by this Standard are consistent with GB/T 3947-1996 *Acoustical terminology,* GB/T 3102.7-1993 *Quantities and Units-Acoustics*, and other relevant national acoustic provisions.

This Standard's Appendixes A, B, C, D are standard appendixes.

This Standard was proposed by the Ministry of Machine-Building Industry.

This Standard shall be under the jurisdiction of National Hydraulic Pneumatic Standardization Technical Committee.

Drafting organizations of this Standard: Ministry of Machine-Building Industry of Guangzhou Machine Tools Institute.

Chief drafting staff of this Standard: Min Xinhe.

This Standard shall be responsibly interpreted by Guangzhou Machine Tools Institute of Ministry of Machine-Building Industry.

Test Code for the Determination of Airborne Noise Level of Hydraulic Pumps

1 Scope

This Standard specifies, under the steady state conditions, the test code for the determination of airborne noise level of hydraulic pumps (hereinafter refers to pumps).

This Standard is applicable to measurement pump's A-weighted sound power level, pump octave band (center frequency is 125~8000Hz) sound power level.

2 Normative References

The following standards contain the provisions which, through reference in this Standard, constitute the provisions of this Standard. At the time of publication, the editions indicated are valid. All standards are subject to revision. The parties who are using this Standard shall explore the possibility of using the latest version of the following standards.

GB/T 3767-1996 Acoustics - Determination of Sound Power Levels of Noise Sources Using Sound Pressure - Engineering Method in an Essentially Free Field over a Reflecting Plane

GB 3785-83 Electric, Sonic Properties and Measuring Methods for Sound Level Meters

GB/T 3947-1996 Acoustical Terminology

GB 6882-86 Acoustics-Determination of Sound Power Levels of Noise Sources-Precision Methods for Anechoic and Semi-Anechoic Rooms

JB/T 7861-1995 1/1 and 1/3 Octave Band Filters for the Analysis of Sounds and Vibrations

3 Definitions

This Standard adopts the following definitions and the ones stipulated in GB/T 3927.

3.1 Free filed over a reflecting plane

Appendix D

(Standard Appendix)

Correction Value of Background Noise's Sound Pressure Level

K_1 value in Table D1 indicates the correction value that shall be deducted from the sound pressure level measured when the pump under test is running.

Table D1 Correction value K_1 of Background Noise's Sound Pressure Level dB

Determination	Difference between sound pressure level and background noise sound pressure level measured during he running period of the pump under test						
	<6	6	7	8	9	10	>10
Semi-anechoic room determination, K_1	Invalid measurement	1.30	1.00	0.80	0.60	0.40	0
Free field over reflecting plane determination, K_1	Invalid measurement	1.00	1.00	1.00	0.50	0.50	0

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