

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS B 8310 : 2021

(TSJ/JSA)

**Methods of noise measurement for
pumps**

ICS 17.140.20 ; 23.080

Reference number : JIS B 8310 : 2021 (E)

B 8310 : 2021

Date of Establishment: 1977-12-01

Date of Revision: 2021-01-20

Date of Public Notice in Official Gazette: 2021-01-20

Investigated by: Japanese Industrial Standards Committee
Standards Board for ISO area

JIS B 8310 : 2021, First English edition published in 2022-07

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2022

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

AH/HN

PROTECTED BY COPYRIGHT

Contents

	Page
Introduction	1
1 Scope	1
2 Normative references	1
3 Terms and definitions	3
4 Pumps covered and pump configuration	3
5 Sound power level determination	3
5.1 Selection of determination method	3
5.2 Reference box, measurement surface, position of microphone, and intensity probe	6
6 Emission sound pressure level determination	12
6.1 Basic standard to be used	12
6.2 Relevant work station	12
7 Uncertainty	12
8 Installation and mounting conditions	13
8.1 General	13
8.2 Noise test situation	13
9 Operating conditions during noise measurement	15
9.1 General	15
9.2 Pumped liquid	15
9.3 NPSHA value	15
10 Information to be recorded and to be reported	15
10.1 General	15
10.2 Test report	16
11 Declaration and verification of noise emission values	16
Annex A (normative) Pump — measurement surface	18
Annex B (normative) Pump units — Microphone positions for sound pressure level measurement	19
Annex C (informative) Example of declaration of noise emission values	26
Annex JA (informative) Overview of ISO 3746	27
Annex JB (informative) Comparison table between JIS and corresponding International Standard	33

Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Turbomachinery Society of Japan (TSJ)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS B 8310** : 1985), which has been technically revised.

This **JIS** document is protected by the Copyright Act.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, published patent application or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, published patent application or utility model rights.

Methods of noise measurement for pumps

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 20361** : 2019, Edition 3, with some modifications of the technical contents to ensure the consistency with relevant **JISs**.

Annex JA is unique to **JIS** and not given in the corresponding International Standard. The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JB.

1 Scope

This Standard specifies all the information necessary to carry out efficiently and under standardized conditions the determination, declaration, and verification of the airborne noise emission of pumps or pump units. It specifies the noise measurement methods and the operating and mounting conditions that shall be used for the test.

Noise emission characteristics include emission sound pressure levels at specified positions and/or the sound power level. The determination of these quantities is necessary for declaring the noise emission value, and purpose of noise control at source at the design stage. The determination of these quantities is also necessary for comparing the noise emitted by pumps on the market.

The use of this Standard ensures the reproducibility of the determination of the airborne noise emission characteristics within specified limits determined by the grade of accuracy of the basic airborne noise measurement method used. Noise measurement methods according to this Standard are engineering methods (Grade 2 of accuracy) and survey methods (Grade 3 of accuracy).

This Standard does not deal with the characterization of the structure-borne sound and liquid-borne noise generated by pumps.

NOTE The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 20361 : 2019 *Liquid pumps and pumps units — Noise test code — Grades 2 and 3 of accuracy* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

Part or all of the provisions of the following standards, through reference in this text,