

First edition
2003-05-01

Hydraulic fluid power — Test code for the determination of sound power levels using sound intensity techniques: Engineering method —

Part 1: Pumps

*Transmissions hydrauliques — Code d'essai pour la détermination des
niveaux de puissance acoustique à l'aide des techniques
d'intensimétrie: Méthode d'expertise —*

Partie 1: Pompes



Reference number
ISO 16902-1:2003(E)

© ISO 2003

This is a preview of "ISO 16902-1:2003". [Click here to purchase the full version from the ANSI store.](#)

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2003

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 either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

This is a preview of "ISO 16902-1:2003". Click here to purchase the full version from the ANSI store.

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Sound power level determination	2
5 Installation and mounting conditions	2
5.1 General	2
5.2 Pump mounting	2
5.3 Drive coupling	2
5.4 Hydraulic circuit	2
6 Measurement surfaces	3
6.1 General	3
6.2 Piping	3
6.3 Pump mounting	3
6.4 Reflecting plane	8
6.5 Drive motor and drive couplings	9
7 Operating conditions	9
8 Measurement uncertainty	9
9 Information to be recorded	9
9.1 General	9
9.2 Pump under test	10
10 Test report	11
Bibliography	12

This is a preview of "ISO 16902-1:2003". [Click here to purchase the full version from the ANSI store.](#)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16902-1 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 8, *Product testing*.

ISO 16902 consists of the following parts, under the general title *Hydraulic fluid power — Test code for the determination of sound power levels using sound intensity techniques: Engineering method*:

- *Part 1: Pumps*
- *Part 2: Motors*¹⁾

1) In preparation.

This is a preview of "ISO 16902-1:2003". [Click here to purchase the full version from the ANSI store.](#)

Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure in a closed circuit. Pumps are components that convert rotary mechanical power into fluid power. During the process of converting mechanical power into fluid power, airborne noise, fluid-borne noise and structure-borne noise are radiated from the pump.

The airborne noise level of a hydraulic fluid power pump is an important consideration in component selection. ISO 4412-1 ^[1] describes a method of taking noise level measurements but requires a very specialized and costly test environment. The procedures described in this part of ISO 16902 do not require specialized and expensive test conditions but can be expected to achieve "engineering" or "survey" levels of accuracy. The results should be sufficiently accurate so that comparisons can be made between pumps. It should be noted that sound power is physically a function of the test environment, and may in some cases differ from the sound power of the same source determined under other conditions.