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

GB/T 41980.2-2022

**Hydraulic fluid power - Determination method of pressure
ripple levels generated in systems and components - Part 2:
Hydraulic pumps(simplified method)**

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Standardization Administration**

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4.1 The symbols given in Table 1 apply to this document.

foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents" drafted.

This document is part 2 of GB/T 41980 "Methods for the determination of pressure fluctuations in hydraulic transmission systems and components". GB/T 41980

The following sections have been published.

--- Part 1. Hydraulic pumps (precision method);

--- Part 2. Hydraulic pumps (simplified method).

This document is modified using ISO 10767-2.1999 "Determination of pressure fluctuations in hydraulic transmission systems and components - Part 2. For pumps simplification method".

The technical differences between this document and ISO 10767-2.1999 and their reasons are as follows.

--- Replaced ISO 5598.1985 with the normatively cited GB/T 17446 and replaced with the normatively cited GB/T 41980.1

ISO 10767-1 (see Chapter 3) to adapt to our country's technical conditions and increase operability;

--- Added the symbol c to indicate the speed of sound in the corrected fluid (see Table 1 in 4.1) to adapt to the technical conditions of our country;

--- Replaced ISO 1000.1992 (see 4.2, 11.3) with the normatively quoted GB 3100 to adapt

to the technical conditions of our country, adding

Operability;

--- Replaced ISO 1219-1:1991 (see 4.3) with the normatively cited GB/T 786.1 to adapt to the technical conditions of our country, adding

Operability;

--- Changed the way of citing the date of ISO 9110-1 (see Chapter 5, 6.1) to adapt to the technical conditions of our country and increase the operability

action;

--- Change the piezoelectric pressure sensor required for pressure fluctuation measurement to a pressure sensor, without limiting the pressure sensor principle (see

5.2), in order to adapt to the technical conditions of our country.

The following editorial changes have been made to this document.

--- In order to harmonize with existing standards, the name of the standard is changed to "Determination of Pressure Fluctuations in Hydraulic Transmission Systems and Components Part 1"

Part. Hydraulic Pump (Simplified Method)";

--- Replaced ISO 10767-1:1996 with GB/T 41980.1 cited for information (see 7.1, 9.2);

--- Adjusted the appendix number and order;

--- Added the word "(uncorrected)" after the fluid reference sound velocity c_0 in Table B.2.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

GB/T 41980 "Determination of pressure fluctuations in hydraulic transmission systems and components" aims to standardize pressure waves in hydraulic systems and components

The dynamic measurement method consists of three parts.

--- Part 1. Hydraulic pumps (precision method). A test designed to determine source flow pulsation and source impedance for measuring positive displacement hydraulic pumps program.

--- Part 2. Hydraulic pumps (simplified method). The purpose is to determine the test procedure for measuring the accuracy of a positive displacement hydraulic pump without high requirements.

--- Part 3. Hydraulic motors. The purpose is to determine the test procedure for the hydraulic motor under steady state conditions.

If you need to measure pressure fluctuations at lower pressure levels, lower frequencies or higher accuracy levels, GB/T 41980.1 can be used. Book

The test program of the file can obtain pressure fluctuation data with minimal calculation and processing of the measured data. This document establishes a unified

A program to measure and report the pressure fluctuation characteristics of hydraulic pumps to assist in the design of low-noise hydraulic systems. Appendix A gives the test

The relevant technical requirements of the test program.

in hydraulic transmission systems and components

Determination of pressure fluctuations

Part 2. Hydraulic pumps (simplified method)

1 Scope

This document specifies the test procedure for the fluid pressure fluctuation characteristic value of hydraulic pumps (maximum error is 1dB~-3dB).

This document applies to the measurement and data processing of the pressure fluctuation characteristics of hydraulic pumps.

2 Normative references

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

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

GB/T 786.1 Graphical symbols and circuit diagrams of fluid transmission systems and components - Part 1. Graphical symbols (GB/T 786.1-

2021, ISO 1219-1.2012, IDT)

GB 3100 International System of Units and Its Application (GB 3100-1993, eqvISO 1000.1992)

GB/T 17446 Vocabulary of Fluid Transmission Systems and Components (GB/T 17446-2012, ISO 5598.2008, IDT)

GB/T 41980.1 Determination of pressure fluctuations in hydraulic transmission systems and

components - Part 1. Hydraulic pumps (precision method)

(GB/T 41980.1-2022, ISO 10767-1.2015, MOD)

3 Terms and Definitions

The terms and definitions defined in GB/T 17446 and GB/T 41980.1 and the following terms and definitions apply to this document.

3.1

LS

The equivalent length of the outlet chamber (from the high pressure chamber of the pump to the inlet of the test line) during normal operation under the specified test conditions.

3.2

DS

The equivalent diameter of the outlet chamber (from the pump high pressure chamber to the test line inlet) under normal operation under the specified test conditions.