

Determination of hydraulic fluid power motor characteristics —

Part 3: Method at constant flow and at constant torque

UDC 621.8.032:621.225.4

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee MCE/18, Fluid power systems and components, upon which the following bodies were represented:

- Association of British Mining Equipment Companies
- British Compressed Air Society
- British Fluid Power Association
- British Hydromechanics Research Association
- British Steel Industry
- Department of Trade and Industry (National Engineering Laboratory)
- Ministry of Defence
- University of Bath

This British Standard, having been prepared under the direction of the Engineering Sector Board (E/-), was published under the authority of the Standards Board and comes into effect on 15 March 1995

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The following BSI references relate to the work on this standard:
Committee reference MCE/18
Draft for comment 92/78189 DC

ISBN 0 580 23859 8

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
Introduction	1
1 Scope	1
2 Normative references	1
3 Definitions	1
4 Symbols	1
5 Test installation	2
6 Pretest data	4
7 Test conditions	4
8 Test procedure	5
9 Expression of results	5
10 Test report	7
Annex A (normative) Classes of measurement accuracy	8
Annex B (normative) Use of practical units	8
Figure 1 — Typical hydraulic test circuit	3
Table 1 — Symbols and units	2
Table A.1 — Permissible systematic errors of measuring instruments as determined during calibration	8
Table B.1 — Practical units	8
List of references	Inside back cover

National foreword

This Part of BS 7275 has been prepared by Technical Committee MCE/18. It is identical with ISO 4392-3:1993 *Hydraulic fluid power — Determination of characteristics of motors — Part 3: At constant flow and at constant torque*, published by the International Organization for Standardization (ISO).

Cross-references

International Standard	Corresponding British Standard
ISO 1219-1:1991	BS 2917 <i>Graphic symbols and circuit diagrams for fluid power systems and components</i> Part 1:1993 <i>Specification for graphic symbols</i> (Identical)
ISO 3448:1992	BS 4231:1992 <i>Classification for viscosity grades of industrial liquid lubricants</i> (Identical)
ISO 4409:1986	BS 4617:1983 <i>Methods for determining the performance of pumps and motors for hydraulic fluid power transmission</i> (Technically equivalent)
ISO 8426:1988	BS 7250:1989 <i>Methods for determining the derived capacity of hydraulic fluid power positive displacement pumps and motors</i> (Identical)

The Technical Committee has reviewed the provisions of ISO 4391:1983 and ISO 5598:1985 to which normative reference is made in the text, and has decided that they are acceptable for use.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a fluid under pressure within an enclosed circuit.

Hydraulic motors are units which transform hydraulic energy into mechanical energy, usually with a rotary output.

1 Scope

This part of ISO 4392 describes a method of determining the low-speed characteristics of positive-displacement rotary fluid power motors under constant flow and constant torque conditions. Motors may be of either the fixed or variable-displacement type.

The method involves testing at slow speeds, which may generate frequencies having a significant influence upon the steady continuous torque output of the motor and affect the system to which the motor would be connected.

The accuracy of measurement is divided into three classes, A, B and C, which are explained in Annex A.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 4392. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 4392 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1219-1:1991, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 1: Graphic symbols*.

ISO 3448:1992, *Industrial liquid lubricants — ISO viscosity classification*.

ISO 4391:1983, *Hydraulic fluid power — Pumps, motors and integral transmissions — Parameter definitions and letter symbols*.

ISO 4409:1986, *Hydraulic fluid power — Positive displacement pumps, motors and integral transmissions — Determination of steady-state performance*.

ISO 5598:1985, *Fluid power systems and components — Vocabulary*.

ISO 8426:1988, *Hydraulic fluid power — Positive displacement pumps and motors — Determination of derived capacity*.

3 Definitions

For the purposes of this part of ISO 4392, the definitions given in ISO 4391 and ISO 5598 and the following definition apply.

3.1

complete motor cycle

the total angular movement of the motor output shaft needed to achieve a repetitive leakage and/or torque recording. In most motors this will be 360°; however, in some, such as gear motors, it may be several shaft revolutions

4 Symbols

4.1 The physical quantity letter symbols and their suffixes used in this part of ISO 4392 are in accordance with ISO 4391. Units are given in Table 1.

4.2 The graphical symbols used in Figure 1 are in accordance with ISO 1219-1.