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

GB/T 7936-2012

Replacing GB/T 7936-1987

**Hydraulic fluid power-positive displacement pumps and motors
-- Determination of derived capacity**

液压泵和马达 空载排量测定方法

(English Translation)

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Foreword

Rules of the criteria based on GB/T 1.1-2009 given draft.

This standard replaces GB/T 7936-1987 "hydraulic pumps, motors idling determination of displacement." the standards and GB/T 7936-1987 technological change compared to the following.

- Modify the definition of the no-load displacement;
- Redefined "Symbols and units";
- Redefined the steady state condition;
- Redefined the temperature of the test medium;
- Measured by the flow rate at different speeds to measure the flow at different pressures;
- Redefined the load displacement calculation methods and formulas.

This standard uses redrafted law revision adopted ISO 8426:2008 "Hydraulic displacement pumps and motor-load displacement measurement." this standard and ISO 8426:2008 and the technical differences for the following reasons.

--- On normative references, this standard has been adjusted technical differences, in order to adapt our technical conditions adjustments Focus reflected in Chapter 2, "Normative references", the specific adjustments are as follows.

- Use identical with international standards GB/T 786.1 instead ISO 1219-1 (see Chapter 4);
- Use identical with international standards GB/T 17446 instead of ISO 5598 (see Chapter 3);
- Use equivalent to international standards of GB/T 3141 instead of ISO 3448 (see 8.1);

- Use revise international standards of GB/T 17491 instead of ISO 4409 (see 7.1.3, 8.2.1);
- Use identical with international standards GB/T 7631.2 instead ISO 6743-4 (see 8.1).

--- Table 2 and Table A.1 in line 5 is amended as.

Pressure [psig $p \geq 0.15\text{MPa}$ (1.5bar)] /% $\pm 0.5 \pm 1.5 \pm 2.5$ Make more reasonable and consistent with the values of the relevant standards.

This standard made the following editorial changes.

--- Standard name changed to "pump and motor-load displacement measurement method";

"When the (inlet) port of import (export) of zero pressure" is defined --- load increased displacement modifiers;

--- Increase "Note 2" in Fig. 3;

--- Increase "Note 2" in 7.1.3;

--- In the formula (B.1) in the "qi" to "q0";

--- In the formula (B.2) increase "qi --- i-th in Δt when measured flow rate, expressed in L/min";

--- No-load displacement unit from the "L/r" to "mL/r".

The standard proposed by China Machinery Industry Federation.

This standard by the National Standardization Technical Committee of hydraulic and pneumatic (SAC/TC3) centralized.

Introduction

In the hydraulic drive system, the power is transmitted and controlled through a closed loop pressurized fluid to achieve.

Positive displacement pumps and motors are two components for the hydraulic drive system. No-load displacement is the basic performance parameters of displacement pumps and motors First, the volume of liquid per rotation axis that is discharged.

This standard aims to unify displacement pumps and motor-load displacement measurement method in order to enable the performance of different pump or motor Comparison.

Hydraulic pump and motor-load displacement measurement method

1 Scope

This standard specifies the method for measuring displacement hydraulic pump and motor load displacement at continuous speed steady conditions and regulations.

When subjects were tested as a pump element in the input shaft mechanical energy, hydraulic energy output port; and subjects tested as a motor element when hydraulic energy from the oil input port, an output shaft mechanical energy.

Note: The measurement accuracy is divided into A, B, C three levels, see Appendix A.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated edition applies to this article Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 786.1 fluid power systems and components - Graphic symbols and circuit diagram - Part 1. for general use and data processing of FIG.

Symbol (GB/T 786.1-2009, ISO 1219-1:2006, IDT) GB/T 3141 Industrial liquid lubricants - ISO viscosity classification (GB/T 3141-1994, eqvISO 3448.1992) GB/T 7631.2 Lubricants, industrial oils and related products (L class) classification - Part 2. H (Hydraulic systems) (GB/T 7631.2-2003, ISO 6743-4:1999, IDT) GB/T 17446 fluid power systems and components vocabulary (GB/T 17446-2012, ISO 5598:2008, IDT) GB/T 17491 pumps, test methods and the expression of motors and integral transmissions steady performance (GB/T 17491-2011, ISO 4409:2007, MOD)

3 Terms and Definitions

GB/T 17446 and define the following terms and definitions apply to this document.

The direction of rotation Observe the direction of the axis of rotation from the shaft end.

Note: When the case in question, it is appropriate diagram indicate.

Volume flow volumeflowrate it flows through the flow channel unit time cross-sectional volume of liquid.

No-load displacement derivedcapacity Pump or motor out (forward) and the intake port (a) the volume of the liquid is zero pressure port of discharge per revolution. This value is specified by the pump or motor test Under experimental conditions used in different outlet pressure (pump) or inlet pressure (motor) measurement data is calculated.

4 Symbols and units

Symbols and units used in this standard amount shown in Table 1.

Graphic symbols used in this standard in line with the provisions of GB/T 786.1 of.