

ICS 27.010
CCS F01



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

GB/T 16666-2012

Replacing GB/T 16666-1996

**Monitoring and testing for energy saving of motor-pump liquid
transport system**

泵类液体输送系统节能监测

Issued on: December 31, 2012

Implemented on: October 1, 2013

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

This standard rule according to GB/T 1.1-2009 given draft. This standard replaces GB/T 16666-1996 "pump and fluid delivery system energy monitoring method," this standard and GB/T 16666- Compared to 1996, in addition to editorial changes outside the main technical changes are as follows:

- Change the standard name;
- Added thermodynamics monitoring methods;
- Added the indirect method of monitoring traffic;
- Added "t * one hundred meters power" terms and definitions;
- Project Monitoring and evaluation of projects to pump efficiency, motor efficiency and power consumption ton per one hundred meters;
- Added curve inquiry method of monitoring the operating efficiency of the motor;
- According to different process requirements were given delivery pressure determination system, conveying height and distance to determine the transmission pipeline system and circulatory system Method for determining the efficiency of delivery. This standard by the National Energy Foundation and Management Standardization Technical Committee (SAS/TC20) and focal points. This standard drafting units. China National Institute of Standardization, Harbin four far-Control Technology Co., Ltd., Heilongjiang Coal Mine Safety production Products Inspection Center, Tangshan Jidong Mining Safety Check and Inspection Co., Ltd. Huabei Mining Technology Center, China National Petroleum Group monitoring and evaluation center energy-saving technologies, energy-Yvette Harbin Sirui Technology Development Co., Ltd. The main drafters of this standard. Wei Yaping, Zhao Yuejin, Wei Siyuan, Suya Guang, Liu Baodong, Sun Jingming and Amendment Li Jinghai, rock star, Liang Shijun, MA Yu-Ping, Lian defenders, Hu Mengting. The previous versions of GB/T 16666-1996 release case.
- GB/T 16666-1986, GB/T 16666-1996. Pump liquid delivery system energy monitoring

1 Scope

GB/T 16666-2012 is the Chinese national standard on monitoring and testing for energy saving of motor-pump liquid transport system, in the field of energy and heat transfer engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 December 2012 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 October 2013. Classification: ICS 27.010, CCS F01. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the pump liquid delivery system energy use monitoring contents, monitoring methods and decision rules. This standard applies to 5kW and above the motor drag pump liquid delivery system.

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 1032 Test Methods for Three-phase asynchronous motor Determination of GB/T 3214 pump flow

GB/T 12497 three-phase asynchronous motor economy

GB/T 13469 centrifugal, mixed flow pumps, axial flow and vortex pump systems Economic Operation

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Ton per one hundred meters power consumption $\text{ton} \cdot \text{hctometerpowerconsumption}$
Pump liquid delivery system to complete the 100m lift 1t liquid consumed electricity.

3.2 Hydraulics monitoring methods $\text{hydraulicmonitoringmethod}$ According to the principles of hydraulics power input shaft pump efficiency ratio calculation method of monitoring the output power of the pump and the pump.

3.3 Thermodynamic monitoring methods $\text{thermodynamicmonitoringmethod}$ According to the principles of thermodynamics with the temperature difference between the pump

pressure and the difference between exports and imports is estimated that monitoring methods pump efficiency and flow.

3.4 efficiency of transmission transport efficiency Process requires a ratio of the pump head and the ratio of head or pressure needed to process and pump output pressure.

4 Energy monitoring inspection

4.1 pump and motor should not be obsolete product testing system should be running in a normal state.

4.2 pump inlet pressure gauge, pump outlet pressure gauges and pumps and motor nameplate should be complete and intact; the rated power of the motor should be single $\geq 45\text{kW}$ Alone configuration ammeter, voltmeter, power meter and so on.

4.3 pump operating point should meet the requirements GB/T 13469 in.

4.4 Runtime pump shaft seal properly.