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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 13930-2024

Replacing GB/T 13930-2010

Water ring vacuum pumps and comprssors - Method for measurement of volume flow of gas

水环真空泵和水环压缩机 气量测定方法

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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 for standardization documents" Drafting: This document replaces GB/T 13930-2010 "Method for determination of gas volume of water ring vacuum pumps and water ring compressors" and GB/T 13930- Compared with:2010, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

--- Changed the installation diagram of the orifice throttling device on the water ring vacuum pump test device (see Figure 3, Figure 3 of the:2010 edition);

--- Changed the installation diagram of the orifice throttling device on the water ring compressor test device (see Figure 4, Figure 4 of the:2010 edition);

---Changed the orifice throttling device series, clarified the relationship between the orifice thickness and the "maximum flow measurement value" and "maximum differential pressure value of the differential pressure gauge" (See Table 1, Table 1 of the:2010 edition);

--- Changed the measurement unit of the throttle orifice pressure difference from mm to hPa (see Table 1, Table 1 of the:2010 edition);

--- Changed the installation diagram of the metering nozzle on the water ring vacuum pump test device (see Figure A:2, Figure A:2 of the:2010 edition);

--- Deleted the metering nozzle dry air table flow rate (see Table A:2 of the:2010 edition): Please note that some of the contents of this document may involve patents: The issuing organization of this document does not assume the responsibility for identifying these patents: This document was proposed by the China Machinery Industry Federation: This document is under the jurisdiction of the National Pump Standardization Technical Committee (SAC/TC211): This document was drafted by: Zibo Vacuum Equipment Factory Co:, Ltd:, Luyang Precision Vacuum Technology (Zibo) Co:, Ltd:, Jiangsu University,

Guangdong Ken Fulai Pump Industry Co:, Ltd:, Zhejiang Yongqiu Technology Co:, Ltd:, Zibo Water Ring Vacuum Pump Factory Co:, Ltd:, Hubei Tongfang High-tech Pump Industry Co:, Ltd: Company, Shenzhen Huaxing Hengtai Pump Valve Co:, Ltd:, Shenzhen Deyuxin Technology Co:, Ltd:, and Shenyang Pump Research Institute Co:, Ltd: The main drafters of this document are: Xu Fajian, Huang Zhiting, Li Juan, Li Mingyi, Chen Shouting, Liu Jirui, Yang Musen, Jing Yanbo, Jiang Congxian, Huang Feng, Xiong Yingshen, Zhou Shouyuan, Dong Qinmin, and Kang Na: This document was first issued in:1992, revised for the first time in:2010, and this is the second revision: Water ring vacuum pump and water ring compressor Gas volume measurement method

1 Scope

GB/T 13930-2024 is the Chinese national standard on water ring vacuum pumps and comprssors - method for measurement of volume flow of gas, in the field of fluid systems and general-purpose components. 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 25 April 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 August 2024. Classification: ICS 23.080, CCS J 71. 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 document describes the determination and calculation of gas flow rates during factory testing of water ring vacuum pumps and water ring compressors (when not distinguished, they are collectively referred to as pumps): method: This document is applicable to the measurement of gas flow of pumps with orifice plates and metering nozzles, but metering nozzles are only applicable to the gas flow of water ring vacuum pumps: Measurement:

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document: For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document:

GB/T 2624:1-2006 Measurement of full pipe flow rate using differential pressure devices installed in circular cross-section pipes Part 1: General Principles and requirements

GB/T 2624:2-2006 Measurement of full pipe flow rate using differential pressure devices installed in circular cross-section pipes Part 2: Orifice plates

GB/T 2624:3-2006 Measurement of full pipe flow rate using differential pressure devices installed in circular cross-section pipes Part 3: Nozzles and Venturi nozzles

GB/T 3163 Vacuum Technical Terminology

GB/T 13929-2024 Test methods for water ring vacuum pumps and water ring compressors GB /Z 33875-2017

GB/T 2624-2006 User Guide

JB/T 7255-2020 Water ring vacuum pump and water ring compressor

JB/T 10770-2019 Vacuum Technology Liquid Ring Vacuum Pump Acceptance Specification

JB/T 11172-2011 Liquid Ring Compressor

3 Terms and definitions

GB/T 3163, GB/T 13929-2024, JB/T 7255-2020, JB/T 10770-2019 and JB/T 11172-2011 For the purposes of this document, the terms and definitions specified in this document apply:

4 Measurement methods

1 General requirements 4:1:

1 The gas volume measurement conditions should be:

---Environmental conditions: natural environment such as pressure, temperature, humidity, etc: that are not controlled by humans;

---Air medium temperature: 0°C~35°C: 4:1:

2 The specified air intake conditions are: