



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

GB/T 40344.2-2021

**Vacuum technology - Standard methods for measuring
vacuum-pump performance - Part 2: Positive displacement
vacuum pumps**

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Foreword

GB/T 40344 "Vacuum Technology Vacuum Pump Performance Measurement Standard Method" plans to release the following parts.

---Part 1.General requirements;

---Part 2.Volumetric vacuum pump;

---Part 3.Specific parameters of mechanical booster pumps;

---Part 4.Turbo molecular pump.

This part is Part 2 of GB/T 40344.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

The translation method used in this part is equivalent to the ISO 21360-22:2020 ``Vacuum Technology Vacuum Pump Performance Measurement Standard Method Part 2

Sub. Volumetric Vacuum Pump.

This section has made the following editorial changes.

---Modified the volume flow rate unit in 5.1.3, changed from m³/s to L/s, and GB/T 40344.1-2021 3.1 for volume flow

The regulations of the rate unit are consistent;

---Chapter 4 adds the number and title of the table.

This part was proposed by China Machinery Industry Federation.

This part is under the jurisdiction of the National Vacuum Technology Standardization Technical Committee (SAC/TC18).

Drafting organizations of this section. Zhejiang Vacuum Equipment Group Co., Ltd., Zhejiang Hangzhen Energy Technology Co., Ltd., Hefei Zhihai Optoelectronics Technology Co., Ltd., Hunan Vigor Magnetic Fluid Co., Ltd., Zibo Vacuum Equipment Factory Co., Ltd., Taizhou Xingguang Vacuum Equipment Manufacturing Co., Ltd.

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Introduction

This section specifies the measurement method of volumetric vacuum pump performance data. GB/T 40344.1 gives the total measurement of vacuum pump performance data

Body requirements, this part is a supplement to it.

The method described here complies with the relevant regulations in current national standards and international standards. The purpose of compiling this section is to fit the measurement

The methods of volumetric vacuum pump performance data are summarized together. When there is a difference with GB/T 40344.1, this section shall prevail.

Standard method for measuring performance of vacuum pumps in vacuum technology

Part 2.Volumetric Vacuum Pump

1 Scope

This part of GB/T 40344 specifies the volume flow rate, base pressure, water vapor tolerance, power consumption and minimum starting temperature of volumetric vacuum pumps.

The measuring method of degree, the volumetric vacuum pump directly exhausts the atmosphere and its base pressure is usually lower than 10kPa.

In this section, it is necessary to use the method specified in GB/T 40344.1 to determine the volume flow rate and base pressure.

This section also applies to other pumps that directly exhaust the atmosphere, such as traction pumps.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 40344.1-2021 Vacuum technology vacuum pump performance measurement standard method Part 1.General requirements (ISO 21360-21.

2020, IDT)

3 Terms and definitions

The following terms and definitions defined in GB/T 40344.1 apply to this document.

The address of the terminology database maintained by ISO and IEC for standardization is as follows.

3.1

Gas town gasbalast

Introduce gas or air into the compression volume of the pump.

3.2

Water vapor tolerance

pH₂O

The maximum value of water vapor pressure that can be delivered by the pump without condensation in the pump.

Note 1.If there is no water vapor condensation problem, for example, the pump is equipped with an oil-water separation device, then the highest water vapor pressure is recognized.

Note 2.The test report should include environmental conditions.

3.3

Water vapour capacity

The mass of water that can be delivered by the pump without condensation in a unit of time.

Note 1.The test report should include environmental conditions.

3.4

Working volume sweptvolume

VSW

The volume of gas delivered by the pump in a cycle.