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

GB/T 25753.2-2010

**Vacuum technology -- Roots vacuum pump -- Measurement of
performance characteristics -- Part 2: Measurement of
compression ratio of the zero throughput**

真空技术 罗茨真空泵性能测量方法 第2部分：零流量压缩比的测量

(English Translation)

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Foreword

GB/T 25753 "Roots vacuum pumps - Measurement of performance art" is divided into three parts.

- Part 1 maximum allowable differential pressure measurement;
- Part 2 compression ratio of zero flow measurement;
- PART 3 relief valve differential pressure measurement.

This is Part 2 GB/T 25753 of.

This part is proposed by China Machinery Industry Federation.

This part of the National Vacuum Technology Standardization Technical Committee.

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Introduction

With the development of basic industries and design innovation, design and performance Roots pump structure have made considerable Progress early Roots vacuum pumps must rely on pre-pump operation, and now the development of a direct atmospheric discharge run-cooled Roots Roots vacuum pumps and wet, the other a single series Roots vacuum

pump has become the single-stage, two-stage, multi-stage, rotor profile also Futaba become the double leaf, clover, leafy.

Existing Roots vacuum pump performance measure encompasses only a single-stage double-lobe Roots pump, other types of basic not involved, and not made on how to measure the differential pressure relief valve specifications, to effectively improve the Roots vacuum pump performance measurement standards compatibility and suitability for the practical Test measurements provide the necessary operating instructions, drawing in a wide range of domestic and foreign-related indicators, benchmarks, based on the actual situation, the development of the "vacuum Roots vacuum pump performance measurement technology "standards, and is divided into three parts. Extreme pressure and pumping rate of the Roots vacuum pump unit Energy measurements, not according to the standard content. In the future will make the necessary modifications and expansion basis of technological development.

Roots vacuum pumps - Measurement of performance art Part 2. Measurement of zero-flow compression ratio

1 Scope

GB/T 25753 provisions of this part of the Roots vacuum pump zero flow measurements compression ratio.

This section applies to a pumping speed 30L/s ~ 20000L/s Roots vacuum pump (hereinafter referred to as the pump).

2 Normative references

The following documents contain provisions which, through reference GB/T 25753 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 25753.1-2010 Roots vacuum pump performance measurement techniques - Part 1 maximum allowable differential pressure measurement

3 Terms and Definitions

The following terms and definitions apply GB/T 25753 in this section.

Zero flow compression ratio compressionratioofthezerthroughput Zero flow compression ratio K_0 is closed Roots vacuum pump inlet valve, the gas flow rate is zero, the pump discharge pressure and the inlet pressure ratio. The compression ratio of the maximum

value is called the zero flow the maximum compression ratio, with K_0 , max represents.

Test cover testdome

Special vacuum vessel having a predetermined precise shape and dimensions, through which the gas to be measured into the pump, on which pressure measurement Means.

4 Device

See GB/T 25753.1-2010 Chapter 3.

5.1 Principle

Close Roots vacuum pump inlet valve, and then the front side regulating different stage vacuum pressure with an appropriate manner (pneumatic).

Pumping speed when measuring method allows the use of pneumatic and supplemented adjusted before the pump outlet pressure is adjusted.

5.2 Program

First, according to GB/T 25753.1-2010 test cover connection in Figure 3, a pressure gauge, inlet valve, and the former foreline pump, closing the intake valve A and B intake valve, after the pump pressure and the temperature reached the limit equilibrium by adjusting the foreline cover intake valve B test introduced Dry gas, into a different amount of gas test hood B form different pressures. After pressure equilibrium is reached, respectively, with the pressure measuring A stress test the amount of cover and inside cover B test, you can get a series of zero-flow compression ratio K_0 value, the maximum compression ratio of the series is Zero flow maximum compression ratio.