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

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**Vacuum technology -- Turbomolecular pumps -- Measurement
of rapid shutdown torque**

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Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the translation method equivalent to ISO 27892..2010 "vacuum technology turbo molecular pump emergency stop torque test".

And the normative reference in this standard international documents are consistent with the relationship between China's documents are as follows.

Vacuum technology terminology (ISO 3529. 1981, MOD) GB/T

This standard is proposed by the China Machinery Industry Federation.

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

The drafting of this standard. Beijing Science and Technology Co., Ltd. in the Branch, Tianjin spin technology research and development Co., Ltd., Hefei Zhixian photoelectric technology

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Introduction

Turbine molecular pump or composite molecular pump in operation at high speed operation when the rotor stored a lot of kinetic energy. If the rotor is damaged, the kinetic energy will be

Very short time to release, and may damage the pump housing of the turbomolecular pump. The huge reverse torque will act on the pump housing, fixed the turbine

The bolts of the pump may break.

This standard collects studies that lead to these possibilities and prepares the drafting of a turbo molecular pump manufacturer's test method to improve

User's use of security.

The core content of this standard is the turbo molecular pump and composite molecular pump emergency stop torque test method.

The term "turbomolecular pump", as used in this standard, is generic and includes dragged molecular pumps and composite molecular pumps.

Vacuum technology - Turbine molecular pump test for emergency stop torque

1 Scope

This standard specifies a test method for turbo-molecular pump emergency stop torque (breaking torque). This torque is produced by axial flow blades or spiral passages

Health generated by the gas momentum. The main destructive force that causes the molecular pump to break is the torque centered on the rotor axis. Other may occur smaller

Force and torque are not covered by this standard.

There are two kinds of damage in the form. broken pump rapid drop and rotor scrape drop, this standard applies. Turbine molecular pumps and drag the molecular pump can be made

Use the same test method.

2 normative reference documents

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

Pieces. For undated references, the latest edition (including all modifications) applies to this document.

ISO 3529-2 Vacuum technology vocabulary - Part 2. Vacuum pumps and related terms (Vacuumtechnology - Vocabulary -

Part 2. Vacuumpumpsandrelatedterms)

3 terms and definitions

ISO 3529-2 and the following terms and definitions apply to this document.

3.1

Inlet flange inletflange

A turbine molecular pump inlet flange for connection and fixing to a vacuum vessel.

3.2

Rotor rotor

Rotating body

Rotary parts rotational parts

(Vacuum pump) assembly comprising a shaft, a rotor body and a rotor blade supported by a bearing and driven by a motor.

3.3

Rotor blade rotorblade

Turbine blade turbineblade

Rotating blade

(Vacuum pump) The rotating part of the pump has its peripheral speed close to the speed of sound, through the rotation to achieve vacuum exhaust, similar to axial flow turbine blades.

3.4

Rotor body rotorbody

Rotor cylinder part cylinderpartofrotor

Rotor spiral groove part rotorhub

(Vacuum pump) rotor part of the rotor blade in addition to the part.

3.5

Centrifugal destruction centrifugaldestruction

Centrifugal force produced by splitting splitcausedbycentrifugalforce