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

GB/T 29714-2013

**Mechanical vibration -- Balancing -- Guidance on the use and
application of balancing standards**

机械振动 平衡 平衡标准的用法和应用指南

(English Translation)

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Foreword

This standard was drafted in accordance with the rules of GB/T 1.1-2009 and GB/T 20000.2-2009 given.

This standard uses the translation method identical with ISO 19499:2007 "Mechanical vibration Balance standard usage and Application Guide" (English Chinese Version).

Consistency correspondence between this international document standards and the references of the following documents.

--- GB/T 2298-2010 Mechanical vibration, shock and condition monitoring of vocabulary (ISO 2041:2009, IDT) this standard by the national mechanical vibration, shock and condition monitoring Standardization Technical Committee (SAC/TC53) and focal points.

This standard was drafted. Zhengzhou Machinery Research Institute, Changchun Institute of Machinery Co., Ltd., Beijing Beizhong Steam Turbine Co., Ltd. Company Division Xiaogan pine International Measurement Ltd., Nanyang Explosion Protection Group Co., Ltd., China Testing Technology Research Institute.

Introduction

Vibration caused by the rotor unbalance is one of the most critical issues in the design and maintenance of the machine. It produces dynamic forces of the state machine and adversely affect human health. This standard is intended to provide a common framework for rotor balancing, in order to choose the appropriate method. The standard Associate principal balance as other relevant standard usage guidelines, it is unbalanced machine classification. Thus, it can be regarded as SAC/TC53 release A series of standards on balance a guiding standard.

In general explanation, balance and rotor imbalance is the same. This imbalance represents a specific recommendation is to make it easier to understand Required to correct the imbalance.

Mechanical vibration - Balancing Balanced standard usage and application guide

1 Scope

This standard introduces balance and guide the user navigate through the available standards and the balance of the rotor. It provides for the use of these standards guide. This standard does not include specific methods, these methods can consult the appropriate standards.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 6444-2008 Mechanical vibration - Balancing Vocabulary (ISO 1925:2001, IDT) ISO 2041 Mechanical vibration, shock and condition monitoring of vocabulary (Mechanicalvibration, shockandconditionmonito-ring-Vocabulary)

3 Terms and Definitions

Terms and definitions ISO 2041 and GB/T 6444-2008, as defined in applicable to this document.

4.1 General

Balance is a check of the rotor (part or assembly) mass distribution, and make adjustments when necessary, to ensure that the process of balancing tolerance.

Rotor imbalance may be caused by a number of factors that include materials, manufacturing and assembly, running wear, debris or operating events. important it is to understand that even in mass production, each rotor has its own distribution imbalance.

The new rotor usually prior to installation to their operating environment, balanced by a manufacturer on a specially designed balancing machine. Modify or repair Later, the rotor can be re-balanced on a balancing machine, or if there is no adequate facilities, the rotor can be balanced in the field (see GB/T 28785).

In the latter case, the rotor is supported on bearings and support structure for its normal use and connect it to run the drive chain.

When the rotor is in the balance or imbalance of the rotor rotary field on the centrifugal

force generated. These forces can be installed in the support bearing structure Load on the meter measured directly, or indirectly measured by measuring the vibration or bearing shaft. By these measurements, unbalance can be calculated, and through by adding, removing, moving the rotor corrected mass balance. Depending on the task of balancing, in a correction, two or more positive school get on.

4.2 Unbalanced distribution

In fact, the imbalance is an infinite number of vectors by the unbalanced composition distribution along the rotor axis. If lumped mass model to represent the rotor, Imbalance can be limited by sizes, different directions of imbalance vector representation, as shown in FIG.

If all unbalance vectors are corrected on their respective planes, the rotor will be perfectly balanced. In fact, these measurements the respective imbalance is impossible, and also unnecessary. Guidance actual balancing process, the need for a more simplified representation.