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**Mechanical vibration -- Criteria and safeguards for the in-situ
balancing of medium and large rotors
(English Translation)**

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Foreword

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

This section uses the translation method identical with ISO 20806:2009 "Mechanical vibration and medium-sized rotor field balancing guidelines and protection." Consistency correspondence between this part of international documents and normative references of our files are as follows.

--- GB/T 2298-2010 Mechanical vibration, shock and condition monitoring vocabulary (ISO 2041:2009, IDT)

--- GB/T 6075 (all parts), mechanical vibration measurement and evaluation of the machine on the non-rotating member of mechanical vibrations (ISO 10816, IDT)

--- GB/T 6444-2008 Mechanical vibration - Balancing Vocabulary (ISO 1925:2001, IDT)

--- GB/T 9239.1-2006 mechanical vibration steady state (rigid) rotor balance quality requirements - Part 1. Specification and balance allow Poor test (ISO 1940-1:2003, IDT)

--- GB/T 11348 (all parts), mechanical vibration on the rotating shaft measurement and evaluation of the machine vibration (ISO 7919, IDT)

--- GB/T 21487.1-2008 shaft vibration measuring systems - Part 1. Relative and absolute measurement of radial vibration (ISO 10817-1:1998, IDT)

--- GB/T 13824-1992 vibration intensity meter requirements (equiv ISO 2954, 1987) this standard by the national mechanical vibration, shock and condition monitoring Standardization Technical Committee (SAC/TC53) and focal points.

This standard was drafted. Zhengzhou Institute of Mechanical Vibration Engineering Research Center, Southeast University thermal power units, Shaanxi Electric Power Research Institute, river Southern Electric Power Research Institute, Beijing Beizhong Steam Turbine Company, Nanyang Explosion Protection Group Co., Ltd., China Testing Technology Research Institute.

Introduction

Balance is a test rotor mass distribution, to correct it if necessary so that the remaining unbalance bearing/supported or vibration and/or Bearing on the process within the limits prescribed. Many of the rotor to the machine before installing the bit is already bearing site in specially designated balancing equipment Carried on the balance. However, if the repair work in the field or balancing machines can not be used, then the rotor field balancing is getting common.

And performed on the balancing machine balancing different advantages of scene balanced rotor mounted in their work environment carried out. Therefore, field balancing when neither damage the bearing and the dynamic performance of the rotor support mechanism, but also from other factors of the rotor shaft. The disadvantage is that field balancing Convenient access to machines and need to start the entire machine. Convenient access to machines inconvenience corrected mass plus the correction planes, starting the whole machine is there will be downtime and operating costs of the economic losses. When there is a big unbalance in a rotor surface and the balance due to the convenient proximity Limit the size of the correction quality, on-site balance is likely to finish.

ISO 19499 [4] shows the standard mechanical rotor balance related to general guidelines, ISO 1940-1 covering the steady state (rigid) rotor Characteristics, ISO 11342 [3] covers the flexible shaft (Flexible Rotor) features.

Mechanical vibration Medium-sized rotor field balancing and protection guidelines

1 Scope

This standard specifies the medium-sized rotor bearings in its own field balancing procedures. It describes conditions suitable for field balancing required Instruments, content

security measures and the maintenance of records and reporting requirements.

This standard can be used as the basis of the provisions of the contract field balancing.

This standard does not provide guidance on the calculation method of the correction mass vibration data measured from.

Note: This standard specifies the procedure for medium-sized machines. But a lot of the same principles apply to smaller machines, such as keeping a good record and vibration state Corrected mass configuration.

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.

ISO 1925 Mechanical vibration - Balancing vocabulary

(Mechanicalvibration-Balancing-Vocabulary) ISO 1940-1 Mechanical vibration steady state (rigid) rotor balance quality requirements - Part 1. Specification and balance tolerance test (Mechanicalvibration-Balancequalityrequirementsforrotorsinaconstant (rigid) state-Part 1.

Specificationandverificationofbalancetolerances) ISO 2041 Mechanical vibration, shock and condition monitoring vocabulary (Mechanicalvibration,

shockandconditionmonito-ring-Vocabulary) ISO 2954 rotary vibration and reciprocating machinery vibration intensity meter requirements (Mechanicalvibrationofrotating andreciprocatingmachinery-Requirementsforinstrumentsformeasuringvibrationseverity) ISO 7919 Mechanical vibration in rotating shaft vibration measurement and evaluation of the machine

(Mechanicalvibration-Evaluationofma-chinevibrationbymeasurementsonrotatingshafts) ISO

10816 Mechanical vibration measurement and evaluation of machine vibration on non-rotating parts (Mechanicalvibration-Evaluation

ofmachinevibrationbymeasurementsnon-rotatingparts) ISO 10817-1 shaft vibration measuring systems - Part 1. Relative and absolute detecting radial vibration (Rotatingshaft vibrationmeasuringsystems-Part 1. Relativeandabsolutesensingofradialvibration)

3 Terms and Definitions

ISO 1925 and ISO 2041 and defined in the following terms and definitions apply to this document.

Field balancing In-situbalancing on the rotor bearings and their support structure rather than the process of balancing the balancing machine.

4.1 General

Field balancing, the rotor is in a limited number of positions to facilitate the implementation and accessible quality correction is applied. By balancing test, the shaft and/or