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

GB/T 6075.7-2015

**Mechanical vibration -- Evaluation of machine vibration by
measurements on non-rotating parts -- Part 7: Rotodynamic pumps for
industrial applications, including measurements on rotating shafts**

机械振动 在非旋转部件上测量评价机器的振动 第7部分：工业应用的旋转动力泵
(包括旋转轴测量)

(English Translation)

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Foreword

GB/T 6075 "Mechanical vibration Evaluation of machine vibration measurements on non-rotating member" is divided into seven sections.

--- Part 1. General;

--- Part 2. 50MW or more, rated speed 1500r/min, 1800r/min, 3000r/min, 3600r/min land security Installed turbine and generator;

--- Part 3. rated power above 15kW rated speed in 120r/min to 15000r/min between field measurements Industrial machinery;

--- Part 4. Gas turbine sets with a sliding bearing;

--- Part 5. hydroelectric and pumping plants;

--- Part 6. Reciprocating machines with power more than 100kW of;

--- Part 7. rotary power pumps for industrial applications (including measurements on rotating shafts).

This part of GB/T 76075 Part of.

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

2009 "Mechanical vibration measurement and evaluation of the machine vibration on non-rotating parts. This section uses the translation method using equivalent ISO 10816-7 Part 7. Rotating power pumps for industrial applications (including measurements on rotating shafts) "(in English).

Consistency correspondence between this part of international documents and normative references of our files are as follows.

--- GB/T 11348.1-1999 shafts of rotating machinery vibration measurement and assessment - Part 1. General (idt ISO 7919-1:1996)

--- GB/T 13824-2015 mechanical vibration and reciprocating rotary machine vibration intensity meter requirements (ISO 2954.

2012, IDT)

This part of the National mechanical vibration, shock and condition monitoring Standardization Technical Committee (SAC/TC53) and focal points.

This section drafted by. China Petroleum & Chemical Corporation Qilu branch, Nanyang Explosion Protection Group Co., Ltd., Shanghai Flag or Electric Co., the Department of the PLA 92 330 troops and equipment, Henan Electric Power Company State Grid Electric Power Research Institute, Shanghai East Hao measure Test Technology Limited.

Introduction

Rotary power pump vibration measurements has many uses, such as for operational monitoring, acceptance testing and diagnostic studies (condition monitoring) analysis. suitable Coupling theory for industrial machinery vibration measurement and assessment in GB/T 6075.1 (vibration on non-rotating parts) and ISO 7919-1 (Off the shaft vibration) to do the general explained.

This section is based on collecting a lot of data on the operation of the pump vibration, the survey covers a variety of on-site testing facilities and on about 1,500 different types of speed and power, running over a wide flow range of the pump. Despite the lack of vibration measurements and the average operating life on the pump Information life relationship, but due to the large amount of data, the data provided in this section can be considered well-pump representatives.

The statistical evaluation of these data and the corresponding flow and power as the optimum working range of 70% to 120% ie the best efficiency point.

Vibration survey shows whether the pump is a rigid support or flexible support, whether in horizontal or vertical direction of the pump, as long as this section Measuring a predetermined position on no significant differences. This section presents the measurement of vibration and other vibration measurement standards do exist are not involved Same place.

Statistical analysis showed that the value of the vibration of the pump power consumed by a certain degree of correlation, so this section will pump into 200kW or less, and 200kW more than two levels.

Measurement and evaluation of mechanical vibration on non-rotating member Machine vibration Part 7. Industrial Applications Rotary power pump (including measurements on rotating shafts)

1 Scope

GB/T 6075 This section describes the evaluation of rotational vibration in industrial applications rated power greater than 1kW power pump, provides non Specific requirements for measurement and evaluation of vibration on rotating parts (bearing) is provided on site or in the factory runtime and manufacturer test facility progress Measurement Evaluation Guide for specific rotary power pump bearing vibration intensity when the line of acceptance tests. This section also gives the evaluation of the axis of rotation relative to the shaft vibration Fixed general information and guidance.

This section provides vertical and horizontal pumps pump vibration area and limits regardless of their support rigidity. These both general evaluation criteria Operational monitoring applies rotational power pump, also suitable for acceptance testing on site or manufacturer test facility 1). For Manufacturing Acceptance tests performed on the facility's test, this section gives a special request.

For the whole vibration monitoring long-term operation of the machine, this section gives the two criteria to evaluate the vibration. Guidelines have taken a measured vibration Moving the magnitude of the other criteria into account changes in magnitude. These evaluation criteria applied to the vibration generated by the pump itself, does not involve the transfer by a pump outside Vibration. These guidelines ensure that the pump is mainly used for reliable, secure, long-term operation, while its harmful effects on the equipment connected to the minimum.

In addition, this section also gives a predetermined operational limits and setting alarm and shutdown value proposal.

For the integrated motor (impeller mounted on the motor shaft or impeller shaft rigidly connected with the motor shaft) of the pump, this section apply to the entire coupling Combined pump.

For flexible connection of the motor pump, this section applies only to the pump body. This section does not involve the driver installed separately, these driver Involved in the ISO 10816-3.

The following types of pumps do not belong to the scope of this section.

--- Reciprocating and rotary positive displacement pump;

--- Reciprocating engine driven pump;

Pump --- hydroelectric plants and pumping stations in a power greater than 1MW (reference standard ISO 7919-5 [4] and ISO 10816-5);

--- Solids handling pumps, mud pumps and submersible pumps.

This section does not involve torsional vibration.

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 6075.1-2012 mechanical vibration evaluation machine vibration measurement - Part 1 on a non-rotating parts. General (ISO 10816-1:1995, IDT) ISO 2954 Mechanical vibration of rotating and reciprocating machinery vibration severity meter requirements
(Mechanicalvibrationof
rotatingandreciprocatingmachinery-Requirementsforinstrumentsformeasuringvibrationseveri
ty)

1) This section refers to the acceptance test should note. All venues, dimensions and details of the test methods are optional and requires parties to the contract provisions and consent.

ISO 7919-1 Measurement and evaluation shafts of rotating machinery vibration - Part 1.
General
(Mechanicalvibrationofnon-re-ciprocatingmachines-Measurementsonrotatingshaftsandevalu
ationcriteria-Part 1. Generalguidelines)