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

GB 12977-2008

Replacing GB 12977-1991

**Balancing machines -- Enclosures and other protective
measures for the measuring station**

平衡机 防护罩和测量工位的其他保护措施

(English Translation)

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Foreword

The standard Chapter 1, Chapters 2 and 3 are recommended, the rest are mandatory.

This revised standard adopts the International Standard ISO 7475:2002 "Mechanical vibration - Balancing machine guards and other protective measures for the measuring station" (English second edition).

This standard is equivalent translation ISO 7475:2002, the standard structure and technical content with their full agreement. For ease of use, this standard ISO 7475:2002 made the following editorial changes.

--- According to our habit modified standard name;

--- Remove the ISO 7475:2002 foreword, preface rewritten this standard;

- The "this International Standard" be replaced by "this standard";
- Use the decimal symbol instead of English as a decimal comma "., .";
- International standards referenced in Chapter 2, the country has been transformed into a standard, this standard direct reference Correspondingly our country Family standard;
- Added "in China manufacturing and the use of balancing machines and balancing machines imported into China, its instruction manual 7.2 shall be printed in Chinese "clause; deleted A.4 does not belong to the formula number of the formula" (A.8) "; the provision A.5.1 Central Plains formula no. "(A.10)" modify "(A.9)", and the corresponding provisions of these changes in the body position of the margin to be a single vertical line Identification;
- Standard profile "References" listed, has been converted to our standards, this standard direct reference Correspondingly me National Standards.

This standard replaces GB 12977-1991 "balancing machine guards and other security measures." this standard compared with GB 12977-1991 main changes are as follows.

- Modify the standard name;
- According to ISO 7475:2002 standard structure and content has been adjusted;
- Increasing the foreword;
- Increased Chapter 3, "Terms and definitions" (see Chapter 3 edition), Chapter 4, "a significant risk list" (see Chapter 4 of this edition);
- Expanding debris allowed speed range;
- Debris energy per unit area as a barrier out of the performance of the rotor of debris shield material;
- Absolute energy use debris shield as a whole, or a member firm strength index;
- Study the debris impact when in the free state shield debris momentum;
- Added other safety instructions balancing machines and other intrinsically safe combination of views, including the operator complete consideration;
- Added Appendix A, Appendix B and Appendix C.

Appendix A of this standard is a normative appendix; Appendices B and C are informative appendices.

Please note that some of the content of this standard may involve patents. The standard release mechanism should not bear the responsibility to identify these patents.

The standard proposed by China Machinery Industry Federation.

This standard by the National Standardization Technical Committee tester (SAC/TC122) centralized.

Introduction

While balancing machine design manufacturers and users from their own endeavor to balance the use of dangerous machines minimized, however, need more to enhance the safety of the work site, especially for the rotor to be balanced request for additional protection. Balancing machine operator or shop work area Around potential hazards may exist, such as. human contact or rotor balancing machine parts, components or rotor imbalance corrected mass fly off, turn Child support frame from when jumping or chipping. These potential hazards are theoretically possible as the rotor speed increases the size and balance, however, Usually through appropriate procedures and balanced rotor design reduces these dangers.

Special balancing machines, balancing machines such as those used in mass production in the automotive industry, usually contain all the necessary protection measures Shi, because the working conditions and the work balancing machine is known, it can be considered balancing machine maker. However, the general balance Machine, balancing machine manufacturer for the work to be balanced generally unknown, and therefore difficult to control its basic protective measures are limited to the Ming Obvious danger, such as. shaft drive coupling guard and (or) drive belt cover. Therefore, the user should describe its balancing machine rotor potential hazards Insurance sources, in order to provide the same amount of protection in balancing machine manufacturer or the user should customize equipment to meet the protection requirements.

For previously unknown rotor, for example. the use of the rotor and the rotor being repaired, it needs to be well evaluated. Table A. 2 Corresponding to different specifications of the balancing machine marked typ. But for each individual rotor to be balanced, the user should check whether the protective measures it includes all hazards.

Comply with the standards recommended by these measures generally give operators and shop floor staff balancing machine provides adequate protection.

However, some applications, the recommended protective cover or other protective measures may be very expensive or time-consuming it is to apply it, then sit Consider other protective measures, such as. a sufficient distance to empty no one region to balance the remote control device, or unconventional work time, and so on.

If you need to balance the rotor or speed test in its operating speed or speeds above its work (in this case just as the low-speed balancing process the same certainly can not be considered a larger rotor accident occurs), the probability of an accident may be important to consider. Maximum operating speed and overspeed test speed is generally much lower than can be expected to occur more accidents rotor speed.

On the other hand, at low speed balancing of the rotor can be assembled from several components, such as a turbine wheel. At this point it is important to test are considered for low-speed balancing shield can withstand the turbine blades to penetrate, or whether it can be sufficient to guard balance process may fly Imbalance correction quality. If the probability is almost non-existent from the blade, use only a correction can protect the quality of the lightweight shield Will suffice.

This standard outlines the balancing machine and protective measures, fails to indicate details risk types and for the provision of rotor balancing equipment. Great future Almost every need in the case of provisions, according to the actual rotor parameters for specialized research. In this connection, the risks that may occur Accidents it should include balancing machine itself features. As for the extent of damage and then, understanding by the support frame and bearing balancing machine able to withstand much solely by Accident rotor (rotor components from running) due to unbalance may be decisive.

The major hazard criteria mentioned are those listed in chapter 4 of the danger. Chapter 5 gives the order to prevent or reduce identified in Table 1 those dangerous and required safety requirements and (or) protection measures, as well as the program verifies these requirements or protective measures.

Balancing machine guard and the measuring station Other protective measures

1 Scope

This standard specifies requirements for guards and other protective measures. Shield and protective measures are used to reduce the centrifugal (rotation) flat Balancing machine rotor unbalance measuring mechanical hazards on the station produced. These risks are balanced by the various types of rotors operate at different balance when the balancing machine generated. The standard shield and other protective measures to define different levels of protection, and defining each level of protection Scope.

This standard does not include adjustment means rotor mass distribution and transport rotor means, although they are assembled in some measurement tools Position.

This standard does not include the performance of special protective cover, for example. you may be required to balance the decrease in equilibrium with the rotational speed of the rotor blades Noise, reduce the drag or vacuum properties.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For