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

GB/T 1786-2008

Replacing GB/T 1786-1990

Forging tortillas ultrasonic testing method

锻制圆饼超声波检验方法

(English Translation)

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Foreword

This standard and American Standard AMS-STD-2154-05 "deformation of the metal ultrasonic inspection procedures," the non-equivalent.

This standard replaces GB/T 1786-1990 "Forged round cake ultrasonic inspection." this standard compared with GB/T 1786-1990, the main changes are as follows.

- Allows for increased contact method test;
- Canceled the rotary speed of the provisions;
- Added workpiece machined surface roughness requirements;
- Increasing the B-scan and C-scan display method display method;
- Increase the quality level of the division;
- Increasing the quality assurance requirements.

Appendix A of this standard is a normative appendix.

The standard proposed by China Iron and Steel Association.

This standard is under the jurisdiction of the National Steel Standardization Technical Committee.

This standard is mainly drafted by. Maanshan Iron & Steel Co., Ltd., Metallurgical Industry Information Standards Institute.

1 Scope

This standard specifies the reference block with a flat bottom hole, immersion or ultrasonic inspection contact method Wrought tortillas (hereinafter referred to as pie) method the

scope of testing personnel, testing equipment and facilities, reference block, test conditions and procedures, defect evaluation, quality assurance and testing regulations report.

This standard applies to the cross-sectional thickness not less than 8mm rotation (such as turbine disc, pressure plate filter machine, etc.) and high-temperature alloy forged steel round cake Ultrasonic flaw testing. Other uses ultrasonic examination of pie can be negotiated by both sides with reference to use.

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 undated reference documents, the latest versions apply to this standard.

GB/T 9445 NDT personnel qualification and certification GB/T 11259 Ultrasonic testing of a test block for steel production and Calibration JB/T 10061 A-mode pulse reflection type ultrasonic flaw detector General technical requirements

3 Inspectors

Inspection by authorized personnel to obtain relevant qualification certificates and ultrasonic technology in the operation. Detection qualified person should be consistent GB/T 9445 standards and requirements, personnel with technical qualifications II II grade level or above certificate issued by the supervision and report.

4.1 Instrument

4.1.1

The frequency ultrasonic flaw detector and the probe should be selected according to the inspection requirements. Instruments equipped with an appropriate probe obtained when using ultrasound Operating frequency should generally be within the range of 2.0MHz ~ 10.0MHz.

4.1.2

ultrasonic flaw detector and the probe combination performance should be consistent with JB/T 10061 requirements.

4.1.3

The equipment should be regularly calibrated period is generally one year. When the instrument is made may affect the characteristics of the repaired, it should be calibrated, and obtain the relevant department issued the instrument calibration certificate.

4.2 Device

4.2.1

Testing and sink should be suitable for the subject pie requirements, the water tank should be clean and free of dust impact testing, bubbles and suspended solids, Water temperature should be maintained at between 10 °C ~ 35 °C. When required, select suitable corrosion inhibitors and wetting agents.

4.2.2

Place pie tank turret should enable pie axis aligned with the axis of the turntable, error $\pm 2\text{mm}$. Adjustable speed turntable, the turntable can be hand Dynamic manipulation.

4.2.3

move the probe along the radial pie, for spiral (or circular, rectangular and other equivalent scanning mode) test. Each rotation of a Weeks, the radial movement of the probe spacing of no more than one-half of the effective beam diameter of the probe without shaking, and the up and down movement of the distance from the water should meet Requirements.

4.2.4

probe angle manipulation device should be able to ensure that the probe in a plane perpendicular to the surface of the pie, in two directions perpendicular to each other even as Continuous manual adjustment, range of not less than 9 °, error is less than $\pm 0.5^\circ$.

4.2.5

the scanning device should be able to accurately measure the position of the defect, and can smoothly and accurately positioning the probe in the proper position, the scanning accuracy to Least $\pm 1\text{mm}$. Mark mode pie defect position shown in Figure 1, the first to identify the character as a reference point.