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

GB/T 27664.2-2026

Replacing GB/T 27664.2-2011

**Non-destructive testing instruments - Characterization and
verification of ultrasonic test equipment - Part 2: Probes**

无损检测仪器 超声检测设备的性能与检验 第2部分：探头

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 2 of GB/T 27664, "Performance and Inspection of Ultrasonic Testing Equipment for Nondestructive Testing".

The following sections have been released.

---Part 1: Instruments;

---Part 2: Probe;

---Part 3: Combined Equipment.

This document replaces GB/T 27664.2-2011 "Performance and Inspection of Ultrasonic Testing Equipment for Nondestructive Testing - Part 2: Probes" and is consistent with...

Compared with GB/T 27664.2-2011, apart from structural adjustments and editorial changes, the main technical changes are as follows.

a) The terms "blind zone," "focal length and near-field length," "operating frequency," "pulse width," "angle of the angle probe," and "transducer" have been removed (see...).

(2011 editions 3.1, 3.2, 3.4, 3.7, 3.10.2, 3.11)

b) The terms "probe test report" and "wear tolerance" have been added (see 3.4 and 3.8);

c) A chapter on "Symbols and Meanings" has been added (see Chapter 4), and the terminology translations in GB/T 12604.1 have been adopted;

d) An "Ultrasonic Probe Test Checklist" has been added (see Table 1);

e) Added "Example of a semi-cylindrical stepped test block" and "Example of a test block with a transverse hole (SDH)" (see Figures 3 and 5);

f) Added "amplitude and duration" (see 8.2);

g) The "acceptance criteria" for pulse shape, amplitude, and duration have been changed (see 8.2.2, 7.2.2 in the 2011 version).

This document is equivalent to ISO 22232-2:2020 "Nondestructive testing - Performance and inspection of ultrasonic testing equipment - Part 2: Probes".

The following minimal editorial changes have been made to this document.

---To align with existing standards, the standard name has been changed to "Performance and Inspection of Ultrasonic Testing Equipment for Non-destructive Testing" (Standard No. 2).

Part. Probe.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Testing Machines (SAC/TC122).

Introduction

GB/T 27664.2 "Performance and Inspection of Ultrasonic Testing Equipment for Nondestructive Testing - Part 2: Probes" specifies the requirements for ultrasonic probes in...

Performance testing after completion includes measurement methods and acceptance criteria. This testing method is suitable for users in both production and operational environments.

The purpose of this is to inspect whether the probe is working properly and whether its performance meets the requirements after production or before use.

GB/T 27664 "Performance and Inspection of Ultrasonic Testing Equipment for Nondestructive Testing" is divided into the following three parts.

---Part 1: Instrumentation. The purpose is to clarify the performance characteristics of the A-type pulse ultrasonic testing instrument, its measurement methods, and acceptance procedures.

standard.

---Part 2: Probes. The purpose is to clarify the performance testing of ultrasonic probes after fabrication, including measurement methods and acceptance procedures.

standard.

---Part 3: Combined Equipment. The purpose is to illustrate the determination of the combination of an ultrasonic testing instrument and an ultrasonic probe using appropriate standard calibration blocks.

Measurement methods and acceptance criteria for working characteristics.

GB/T 27664, "Performance and Inspection of Ultrasonic Testing Equipment for Nondestructive Testing," consists of three independent parts that also complement each other, forming a comprehensive standard.

A complete standard system describes the measurement and verification methods for the performance of A-pulse ultrasonic testing instruments, probes, and combined systems.

Performance and Inspection of Nondestructive Testing Instruments and Ultrasonic Testing Equipment Part 2: Probe

1 Scope

This document specifies ultrasonic nondestructive testing probes with a center frequency range of 0.5MHz to 15MHz, including both focused and unfocused types.

Characteristics of the head.

- a) Single-crystal or dual-crystal contact probes that generate longitudinal or transverse waves.
- b) Single-crystal liquid immersion probe.

The ultrasonic velocity of the materials in this document is based on the longitudinal wave velocity of steel (5920 ± 50) m/s and the transverse wave velocity (3255 ± 30) m/s.

This document does not include periodic test methods for the probe. Periodic test methods for field calibration of the probe are described in ISO 22232-3.

Provided.

If you need to test probe performance parameters not included in ISO 22232-3 during probe use, refer to the corresponding test methods in this document.

This document does not include phased array ultrasonic probes; please refer to ISO 18563-2 for other phased array ultrasonic probes.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

ISO 5577 Non-destructive testing - Ultrasonic testing - Vocabulary
ISO 12604.1-2020 Nondestructive Testing Terminology - Ultrasonic Testing (ISO 5577:2017,