

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

JJG 746-2024

Ultrasonic Flaw Detectors (English Translation)

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7.6 Verification cycle (13)

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Introduction

JJF1001-2011 "General metrological terms and definitions", JJF1002-2010 "National metrological verification procedures the JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement" together constitute the basis for the formulation of this regulation.

Series specifications.

This regulation is revised with reference to EN12668-1:2010 "Non-destructive testing - Characterization and verification of ultrasonic inspection equipment - Part 1 Part 1: Instruments (English version), EN12668-3:2011 Non-destructive testing - Characterization and verification of ultrasonic examination equipment ENISO 22232.1:2020 Non-destructive testing - Ultrasonic testing Characterization and verification of equipment - Part 1: Instruments (English version), GB/T 27664.1-2011 Nondestructive testing of ultra-Performance and inspection of ultrasonic testing equipment Part 1: Instruments" and GB/T 27664.3-2011 "Non-destructive testing of ultrasonic Performance and verification of testing equipment Part 3: Combined equipment.

This regulation replaces JJG 746-2004 Ultrasonic Flaw Detector. Compared with JJG 746-2004, the main technical changes are as follows.

- a) Added terms and definitions;
- b) Deleted the horizontal linearity error, attenuator attenuation error, vertical linearity error, electrical noise level, maximum use Verification items such as sensitivity, flaw detection sensitivity margin, scanning range and resolution;
- c) Updated the metrological performance requirements and test methods for dynamic range verification items;
- d) Added amplifier frequency response, transmission energy leakage suppression, transmission pulse after blind area, equivalent input noise Acoustic, attenuator error, amplitude linearity error, time base linearity error, transmitting pulse voltage, pulse rise time, pulse Metrological performance requirements and test methods for calibration items such as duration and pulse repetition frequency.

The previous versions of this regulation are as follows.

---JJG 746-2004.

Ultrasonic flaw detector calibration procedures

1 Scope

This regulation applies to the initial verification of type A display pulse ultrasonic flaw detectors (including digital ultrasonic flaw detectors).

Subsequent verification and in-use inspection.

2 References

This specification refers to the following documents.

JJF1001-2011 General metrological terms and definitions JJF1034-2020 Acoustic Metrology Terms and Definitions JJF1059.1-2012 Evaluation and Expression of Measurement Uncertainty GB/T 3102.7 Acoustic quantities and units GB/T 27664.1-2011 Performance and inspection of ultrasonic testing equipment for non-destructive testing Part 1: Instrument GB/T 27664.3-2012 Performance and inspection of ultrasonic testing equipment for non-destructive testing Part 3: Combination equipment EN12668-1:2010 Characterization and verification of ultrasonic inspection equipment for non-destructive testing Part 1: Instrument equipment-Part 1: Instruments) EN12668-3:2010 Characterization and verification of ultrasonic inspection equipment for non-destructive testing Part 3: Combined equipment equipment-Part 3: Combined equipment) equipment-Part 1: Instruments) for any referenced document with a date, only the version with the date is applicable to this Regulation; for any referenced document without a date, the latest version (including all amendments) shall apply to this regulation.

3 Terminology and units of measurement

3.1 Terms and Definitions the following terms and definitions defined in JJF1001-2011, JJF1034-2020 and JJF1059.1-2012 apply to for use in this procedure.

3.1.1 Ascope

The display screen of ultrasonic testing instruments (including ultrasonic flaw detectors and ultrasonic diagnostic instruments) is based on the ultrasonic probe receiving the reflected pulse signal amplitude is the ordinate, and the ultrasonic wave propagation time is the abscissa, showing the image of the ultrasonic wave on the propagation path.

Line image display mode.

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