

ICS 77.040.20; 77.140.80

J 31



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

中华人民共和国国家标准

GB/T 7233.1-2009

Replace GB/T 7233-1987

**Steel castings—Ultrasonic examination—Part 1: Steel
castings for general purposes**

铸钢件 超声检测

第 1 部分：一般用途铸钢件

(ISO 4992-1: 2006, MOD)

Issued on Oct 30, 2009

Implemented on Feb 01, 2010

Issued by General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China

Standardization Administration of the People's Republic of China

Contents

Foreword	1
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Requirements	3
5 Examination	5
Annex A (Informative) Sound-beam diameters	19
Annex B (Informative) Types of indications	21
Annex C (Informative) Transfer correction	33
Annex D (Informative) Determination of coupling transfer correction	36

Foreword

GB/T 7233 *Steel castings—Ultrasonic examination* is divided into two parts:

- Part 1: Steel castings for general purposes;
- Part 2: Steel castings for highly stressed components.

This is Part 1 of GB/T 7233.

This Standard is revision of ISO 4992-1: 2006, standard structure and technical contents are identical to ISO 4992-1: 2006. Comparison with ISO 4992-1: 2006, there are great changes on normative references, reserve ISO 5577 only, the rest 9 items are adjusted based on national standards.

For ease of use, some modification of this Part are as follows:

- Changed the formatting according to Chinese habit;
- Changed the formulation of International standards to national standards to be applied;
- Replaced the comma “,” by decimal point “.”.

This Part will replace corresponding parts of GB/T 7233-1987 *Methods for ultrasonic testing and for specifying quality levels of steel castings*.

Comparison with GB/T 7233-1987, main changes of this Part are as follows:

- Changed the scope of application of standard (see Clause 1);
- Added the order information (see 4.1);
- Changed the quality level requirements (see 4.3);
- Changed the examination methods;
- Added the new annex A, B, C and D, deleted annex A, B and C in original standard.

Annex A, B, C and D of this Part is informative.

This Part is proposed by National Standardization Committee.

This Part is under the jurisdiction of National Technical Committee 54 on Casting of Standardization Administration of China

Draft units of this Part: Shenyang Casting Research Institute, Shenyang Fan Cooperation and Shenyang North Heavy Industries.

Chief drafters of this Part: Sun Chungui, Zhang Zhaoqian, Qi Xing, Li Lengxi, Wang Lihua and Li Xingjie.

This standard replaces the following historical editions issued:

— GB/T 7233-1987

Steel castings—Ultrasonic examination—Part 1: Steel castings for general purposes

1 Scope

This part of GB/T 7233 specifies the requirements for the ultrasonic examination of steel castings (with non-Austenite structure) for general purposes, and the methods for determining internal discontinuities by the pulse-echo technique.

This part of GB/T 7233 applies to the ultrasonic examination of steel castings which have usually received a grain-refining heat treatment and which have wall thicknesses up to and including 600 mm. For greater wall thicknesses, special agreements apply with respect to the test procedure and recording levels.

This part of GB/T 7233 does not apply to austenitic steels and joint welds.

2 Normative references

The provisions contained in the following document have become the provisions of this Part of GB/T 7233 when they are cited herein. The dated reference documents, including their list of modifications made thereafter (excluding corrections) or modified versions, shall not be applicable to this Specification. But, all parties who have concluded agreements based on this Specification are encouraged to study on the possibility to implement the latest version of these documents. Of the undated reference documents, their latest version shall be applicable to this standard.

GB/T 5616 Non-destructive testing - Guidelines for application

GB/T 9445 Non-destructive testing - Qualification and certification of personnel (GB/T 9445-2008, ISO 9712: 2005, IDT)

GB/T 12604.1 Non-destructive testing-Terminology-Terms used in ultrasonic testing (GB/T 12604.1-2005, ISO 5577: 2000, Non-destructive testing—Ultrasonic inspection—Vocabulary, IDT)

GB/T 15056 Evaluation method on cast surface roughness

GB/T 18694 Non-destructive testing--Ultrasonic inspection--Characterization of search unit and sound field (GB/T 18694-2002, eqv ISO 10375: 1997 (E))

GB/T 19799.1 Non-destructive testing—Ultrasonic testing—Calibration block No.1 (GB/T 19799.1-2005, ISO 2400: 1972 Welds in steel—Reference block for the calibration of equipment for ultrasonic examination, IDT)

GB/T 19799.2 Non-destructive testing—Ultrasonic testing—Calibration block No.2 (GB/T 19799.2-2005, ISO 7963: 1985 Welds in steel—Calibration block No.2 for ultrasonic examination of welds, IDT)

JB/T 9214 Practice for evaluating performance characteristics of A scope ultrasonic pulse - Echo testing systems

JB/T 10061 Practice for evaluating performance characteristics of A scope ultrasonic pulse - Echo testing systems

3 Terms and definitions

For the purposes of this Part, the terms and definitions given in GB/T 12604.1, and the following, apply.

3.1

reference discontinuity echo size

smallest indication to be recorded during the assessment phase of an ultrasonic examination, usually expressed as an equivalent flat-bottomed hole diameter

3.2

point discontinuity

discontinuity, the dimensions of which are smaller than or equal to the sound-beam width

NOTE Dimensions in this part relate to length, width and/or dimension in the through-wall direction.

3.3

complex discontinuity

完整版本请在线下单

或咨询：

TEL: 400-678-1309

QQ: 19315219

Email: info@lancarver.com

<http://www.lancarver.com>

线下付款方式：

1. 对公账户：

单位名称：北京文心雕语翻译有限公司

开户行：中国工商银行北京清河镇支行

账 号：0200 1486 0900 0006 131

2. 支付宝账户：info@lancarver.com

注：付款成功后，请预留电邮，完整版本将在一个工作日内通过电子 PDF 或 Word 形式发送至您的预留邮箱，如需索取发票，下单成功后的三个工作日内安排开具并寄出，预祝合作愉快！



银联特约商户