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**National Standard of the People's Republic of China**

**中华人民共和国国家标准**

**GB/T 6402-2008**

**Replacing GB/T 6402-1991**

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**Steel Forgings—Method for Ultrasonic Testing**

**钢锻件超声检测方法**

**Issue on: May 13, 2008**

**Implemented on: November 1, 2008**

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

## Foreword

This standard is modified in relation to EN 10228-3: 1998 “Non-Destructive Testing of Steel Forgings-Part 3: Ultrasonic Testing of Ferritic or Martensitic Steel Forgings” and EN 10228-4 “Non-Destructive Testing of Steel Forgings-Ultrasonic Testing of Austenitic and Austenitic-Ferritic Stainless Steel Forgings” (English edition).

This standard was redrafted according to EN 10228-3: 1998 and EN 10228-4: 1999. In order to be convenient for comparison, it lists out reference schedule of this standard and EN standard clauses in appendix A (informative).

When this standard adopting EN standard, it makes some revisions, these technical differences are marked in page margin of clauses it concerned to with vertical margin line. It presents schedule for technical difference and reasons in appendix B.

In order to be convenient for usage, this standard also makes the following editing and technical revisions:

——It deletes two forewords of EN standard;

——It merges scopes of item 1 in EN 10228-3 and item 4 in EN 10228-4 and adds: forgings in other organizations may also be used referring to this;

——Staff qualification and verification are changed to be: it shall make qualification training according to GB/T 9445 or corresponding standards and obtain certificate of competency;

——It adds concrete content required by EN 583-2 probe shoe cited in EN 10228 in 7.2.2 of this standard;

——It merges recording level and acceptance standard in part 3 and part 4 of EN 10228 and simplifies to form quality level table of recording level and acceptance standard in this standard;

——This standard deletes DGS method and all the content related to DGS in 11.2.2 of the two parts of EN10228. It is replaced with bottom echo reflection method and adds corresponding appendix E;

——It deletes appendix Z in EN 10228-4;

——EU standards in normative documents of EN 10228 are all replaced by corresponding national standards in this standard.

This standard replaces GB/T 6402-1991 “Steel Forgings-Method for Ultrasonic Examination”.

Comparing with former GB/T 6402-1991, this standard has the following characteristics:

——Test method is same with former standard, but it adopts EU standard mode in structural arrangement.

——Classification and quality levels of the forgings are more detailed.

Appendix A, appendix B, appendix C, appendix D and appendix E of this standard are informative.

This standard was proposed by China Iron and Steel Association.

This standard is under the jurisdiction of Steel Technical Committee for Standardization of P.R.C.

Major drafting units of this standard are: Baoshan Iron & Steel Co. Ltd. Special Steel Branch and China Metallurgical Information and Standardization Research Institution.

Chief drafting staffs of this standard are: Ni Xiumei, Wang Yongling, Zhou Weidong, Zhao Chun, and Huang Ying.

Issuing condition of all previous editions replaced by this standard are:

——GB/T 6402—1986 and GB/T 6402—1991

**Steel Forgings-Method for Ultrasonic Testing**

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**1 Scope**

This standard specifies term of an agreement for steel forgings-ultrasonic testing, editing of operation specifications, staff qualification, equipment, and appendix, calibration and checking, testing time, surface condition, sensitivity, scanning, classification, recording level and acceptance standard.

This standard is applicable to ultrasonic pulse-echo handiwork test method for Ferritic-Martensitic steel forgings, Austenitic and Austenitic-Ferritic stainless steel forgings. By the negotiation between the parties, it may also use mechanization scanning method with immersion method testing. Other organizational forgings may also be used by referring to.

This standard divides forgings into 4 types according to shapes and manufacturing methods. Types 1, 2 and 3 are forgings with simple shape and type 4 is forgings with complicated shape.

This standard is not applicable to compact stamp work, turbine rotor and engine forgings.

**2 Normative references**

The following normative documents contain provision which, through reference in this text, constitute provisions of this national standard. For dated reference, subsequent amendments to, or revision (excluding error content) of, any of these publications do not apply. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. For undated references, the latest edition of the normative document referred to applies.

GB/T 9445	Non-destructive Testing--Qualification and Certification of Personnel (GB/T 9445-2005, ISO 9712: 1999, IDT)
GB 11343	Ultrasonic Angle Beam Examinations by the Contact Method
GB/T 12604.1	Non-destructive Testing—Terminology—Terms used in Ultrasonic Testing

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