

ICS 53.020.30



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

GB/T 10051.2-2010

Replacing GB/T 10051.2-1988

Lifting hooks -- Part 2: Technical conditions for forged hooks

起重吊钩 第2部分：锻造吊钩技术条件

(English Translation)

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Foreword

GB/T 10051 Lifting hooks consists of following parts.

- Part 1. Mechanical properties, lifting capacities, stresses and materials;
- Part 2. Technical conditions for forged hooks;
- Part 3. Inspection of forged hooks in service;
- Part 4. Blanks of shank hook with point;
- Part 5. Shank hooks with point;
- Part 6. Blanks of ramshorn shank hooks;
- Part 7. Ramshorn shank hooks;
- Part 8. Blanks of cross pieces for hooks;
- Part 9. Cross pieces;
- Part 10. Hook nuts;
- Part 11. Securing plates for hook nuts;
- Part 12. Safety latch for lifting hook;
- Part 13. Technical conditions for laminated hooks;
- Part 14. Inspection of laminated hooks in service;

- Part 15. Laminated hooks with point.

This is part 2 of GB/T 10051.

Modification for this Part adopts DIN 15404-1. 1989 Lifting Hooks - Technical Conditions for Forged Hooks.

This Part is re-drafted in accordance with DIN 15404-1. 1989.

Taking into account the conditions of China, it has been modified when adopting DIN 15404-1. 1989, and these technical differences are marked at related page's margin with a vertical single line. All the technical differences and reasons are listed in Annex A for reference.

For the purpose of easy use, the following editorial amendments are made in this Part.

- "This Standard" is changed to "This Part";
- Decimal point "." is used to replace comma ",", " where it is used as decimal point;

This Part shall replace GB/T 10051.2-1988 Lifting hooks-Technical conditions of shank hook.

Compared with GB/T 10051.2-1988, main changes of this Part are as follows.

- Add the content of GB/T 10051.6 and GB/T 10051.7;
- Add 4.3 Impacting Energy Test;
- Delete Annex A in previous standard;
- Added Annex B.

Annex A and B of this Part are informative annex.

1 Scope

This Part of GB/T 10051 specifies technical requirements, test methods, inspection rules, marking, packaging, transportation and storage for forged hooks.

This Part applies to forged hooks used for lifting machinery specified in GB/T 10051.1 (hereinafter referred to as hooks).

2 Normative references

The provisions contained in the following documents become part of this Part of GB/T 10051 when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Part. For the undated documents so quoted, the latest editions shall be applicable to this Part.

GB/T 197 General purpose metric screw threads - Tolerances (GB/T 197-2003, ISO 965-1. 1998, MOD)

GB/T 223 Methods for chemical analysis of iron, steel and alloy

GB/T 228 Metallic materials - Tensile testing at ambient temperature (GB/T 228-2002, eqv ISO 6892. 1998)

GB/T 229 Metallic materials - Charpy pendulum impact test method (GB/T 229-2007, ISO 148-1. 2006, MOD)

GB/T 1804 General tolerances - Tolerances for linear and angular dimensions without individual tolerance indications (GB/T 1804-2000, eqv ISO 2768-1. 1989)

GB/T 2975 Steel and steel products - Location and preparation of test pieces for mechanical testing (GB/T 2975-1998, eqv ISO 377. 1997)

GB/T 10051.1-2010 Lifting hooks Mechanical properties, lifting capacities, stresses and materials

GB/T 10051.4 Lifting hooks - Part 4: Blanks of shank hook with point

GB/T 10051.5 Lifting hooks - Part 5: Shank hooks with point

GB/T 10051.6 Lifting hooks - Part 6: Blanks of ramshorn shank hooks

GB/T 10051.7 Lifting hooks - Part 7: Ramshorn shank hooks

GB/T 13384 General Specifications for Packing of Mechanical and Electrical Product

GB/T 20066 Steel and Iron - Sampling and Preparation of Samples for the Determination of Chemical Composition (GB/T 20066-2006, ISO 14284. 1996, IDT)

JB/T 5000.15-2007 Heavy mechanical general techniques and standards - Non-destructive inspection of forged steel

3.1 Materials

3.1.1

Material smelting shall use the method of electric stove (or converter) plus refining out of furnace.

3.1.2

Materials shall comply with provisions of Chapter 6 in GB/T 10051.1-2010.

3.2 Forging and heat treatment

3.2.1

Total forging ratio of hooks shall not be less than 3.

3.2.2

Dimension and tolerance of straight-shank single-hook workblank (hereinafter referred as single hook) shall comply with GB/T 10051.4, dimension and tolerance of straight-shank double-hook workblank (hereinafter referred as double hook) shall comply with GB/T 10051.6, and only positive deviation is allowed for limit deviation for unmarked tolerance dimension.

3.2.3

Hooks shall be heat-treated after forging, so as to achieve mechanical performance not inferior to that specified in Table 1 of GB/T 10051.1-2010, and the times of heat treatment shall not be more than 3 times. See Annex B for forging temperature and methods of heat treatment of hooks.

3.3 Machining

3.3.1

Single hook dimensions and tolerances shall comply with GB/T 10051.5; double hook dimensions and tolerances shall comply with the GB/T 10051 7; tolerance grades for position specified in GB/T 10051.5 and GB/T 10051.7.

6 Marking and packaging, transportation and storage

6.3

The packaging of the lifting hook shall comply with relevant provisions in JB/T 13384.

6.4

During the transportation process, the lifting hooks shall be free of bruising.

6.5

Lifting hooks shall be stored in ventilated and dry warehouse.

Annex B (Informative)

Forging temperature and heat treatment methods for lifting hooks

Forging temperature and heat treatment methods for lifting hooks made of 5 type materials are shown in Table B.1. It is for reference use.

Table B.1 Forging temperature and heat treatment methods for lifting hooks

Materials Q345qD and Q420qD - forging temperature 1200 °C - 850 °C - heat treatment: