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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 5782-2000
eqv ISO 4014:1999

Hexagon Head Bolts

六角头螺栓

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Foreword

This Standard is equivalent to ISO 4014: 1999 *Hexagon Head Bolt—Product Grade A and B*.

This Standard integral part of the national standard for “Fasteners tightened by hexagonal wrench” series products. These series products shall include:

- a) Hexagon head bolt: GB/T 27, GB/T 28, GB/T 29.1, GB/T 29.2, GB/T 31.1, GB/T 31.2, GB/T 31.3, GB/T 32.1, GB/T 32.2, GB/T 32.3, GB/T 5780, GB/T 5781, GB/T 5782, GB/T 5783, GB/T 5784, GB/T 5785 and GB/T 5786 ;
- b) Hexagon nuts : GB/T 41, GB/T 56, GB/T 802, GB/T 804, GB/T 805, GB/T 808, GB/T 889.1, GB/T 889.2, GB/T 923, GB/T 6170, GB/T 6171, GB/T 6172.1, GB/T 6172.2, GB/T 6173, GB/T 6174, GB/T 6175, GB/T 6176, GB/T 6178, GB/T 6179, GB/T 6180, GB/T 6181, GB/T 6182, GB/T 6184, GB/T 6185.1, GB/T 6185.2, GB/T 6186, GB/T 9457, GB/T 9458, GB/T 9459 and GB/T18195 ;
- c) Hexagon flange bolts : GB/T 5789, GB/T 5790 and GB/T 16674 ;
- d) Hexagon flange nuts : GB/T 6177.1, GB/T 6177.2, GB/T 6183.1, GB/T 6183.2, GB/T 6187.1 and GB/T 6187.2 ;
- e) Bolt connection pairs for bolt connected structures : GB/T 1228, GB/T 1229, GB/T 1230, GB/T 3632, GB/T 16939, GB/T 18230.1, GB/T 18230.2, GB/T 18230.3, GB/T 18230.4, GB/T 18230.5, GB/T 18230.6 and GB/T 18230.7 ;
- f) Hexagon head screw, wood screw, tapping screw and assy: GB/T 838, GB/T 102, GB/T 5285, GB/T 6563, GB/T 9456, GB/T 15856, GB/T 16824.1, GB/T 16824.2, GB/T 9074.11, GB/T 9074.12, GB/T 9074.13, GB/T 9074.14, GB/T 9074.15, GB/T 9074.16, GB/T 9074.17, GB/T 9074.20, GB/T 9074.21, GB/T 9074.22 and GB/T 9074.23.

As ISO 4014 does not stipulate packaging technical requirements, this Standard shall set forth the stipulations (Table 3)

As ISO 4014 does not stipulate simplified markings, this Standard has given the examples for simplified markings by the simplifying principles set forth in GB/T 1237 (Article 5.2).

This Standard does not adopt the table of contents attached to ISO 4014, the contents of which have been contained in the preface of this Standard.

This Standard is the revised version of GB/T 5782–1986; the major modifications are given as the

follows:

- a) It has added thread specification of M1.6, M2 and M2.5;
- b) Length range is increased to 500mm;
- c) The threads are divided by degree of optimization into: Table 1, Optimized thread specification (equivalent to the Table 1 and Table 2 in old standard); Table 2, non-optimized thread specification (equivalent to the Table 3 in old standard);
- d) Those above solid lines of ladder which should be determined as per GB/T 5783 *Hexagon Head Bolts—Full Thread* (Table 1 and Table 2)
- e) It has added Grade 5.6, 9.8, A4-70 and A4-50 (Table 3)
- f) It has added non-ferrous metal bolts, the performance grade of which shall be selected by the Supplier and Buyer through agreement subject to GB/T 3098.10 (Table 3);
- g) It has added non-electrolytic zinc powder coating layer (Table 3);

This Standard will replace GB/T 5781 – 1986 since the implementation date.

This Standard is proposed by State Bureau of Machine-Building Industry.

This Standard is under the jurisdiction of National Technical Committee of Fastener Standardization.

This Standard is jointly drafted by Machinery Scientific Research Institute as unit in charge, Beijing Standard Parts Industry Group Corporation, Shanghai Screw Factory, Shenyang Standard Parts Manufacturing Works and Zhejiang Shaoxing High Strength Fasteners Works as participants.

This Standard is construed by National Technical Committee of Fastener Standardization.

ISO Forward

ISO (International Standardization Organization) is a worldwide united organization jointed by national standard communities of all countries (ISO membership group). The formulation work of international standards is done through each ISO technical committee. If a membership group is interested in the project conducted by certain technical committee, he may joint this committee. It is also possible for the governmental or non-governmental organizations in connection with ISO to participate in this work. ISO is closely connected with International Electrotechnical Commission (IEC) as to electrotechnical standardization.

International standards are drafted according to the rules given in Part III of ISO/IEC Guidance.

The drafts of international standards adopted by technical committee shall be distributed to all membership groups for vote by ballot. The formal publication of international standards shall be agreed by at least 75% of membership groups by ballot.

International standard ISO 4014 is formulated by ISO/TC 2 Fasteners Technical Committee.

The second edition has done some cancellations and supplementations to the first edition (ISO 4014: 1988), belonging to technical modifications.

ISO Introduction

This international standard is one integral part of “Fasteners tightened by outer hexagonal wrench”

ISO series products. These series products shall include:

- a) Hexagon head bolts (ISO 4014 ~ 4016 and ISO 8675);
- b) Hexagon head screw (ISO 4017, ISO 4018 and ISO 8676);
- c) Hexagon head nuts (ISO 4032 ~ 4036 and ISO 8673 ~ 8675);
- d) Hexagon flange bolts (ISO 4162 and ISO 15071);
- e) Hexagon flange nuts (ISO 4161 and ISO 10663);
- f) Bolts and nuts for bolt connected structures (ISO 4775, ISO 7411 ~ 7414 and ISO 4717).

Hexagon Head Bolts

1. Scope

This Standard is applicable to the hexagon head bolts that the thread specification is M1.6 ~ M64 with full thread, the performance grades are of Grade 5.6, 8.8, 9.8, 10.9, A2-70, A4-70, A2-50, A4-50, CU2, CU3 and AL4 and product grades are of Grade A and Grade B. Grade A is used for the bolts with $d = 1.6 \sim 24\text{mm}$ and $l \leq 10d$ or $l \leq 150\text{mm}$ (subject to small value); Grade B is used for the bolts with $d > 24\text{mm}$ or $l > 10d$ or $l > 150\text{mm}$ (subject to small value).

If other technical requirements are needed, they should be selected from applicable standards (such as GB/T 196, GB/T 3106, GB/T 3098.1, GB/T 3098.6 and GB/T 3103.1).

2. Normative References

The articles contained in the following standards shall become the article of this Standard when they are cited therein. When this Standard is published, all the indicated editions are effective. As all standards shall be modified, all parties applying this Standard shall study the possibilities to use the latest version of the following standards.

GB/T 2-1985 Fasteners—Ends of parts with external thread (eqv ISO 4753:1983)

GB/T 90 – 1985 Fasteners – Acceptance inspection, marking and packing (eqv ISO 3269: 1984)

GB/T 196–1981 General purpose metric screw threads—Basic dimensions (for diameter from 1 ~ 600mm)

GB/T 197–1981 General purpose metric screw threads—Tolerances and fits (for diameter from 1 to 355mm)

GB/T 1237–2000 Fasteners – Marking methods (eqv ISO 8991: 1986)

GB/T 3089.1 – 2000 Mechanical properties of fasteners – Bolts, screws and studs (idt ISO 898-1: 1999)

GB/T 3089.6 – 2000 Mechanical properties of fasteners – Stainless steel bolts, screws and studs (idt ISO 3506-1: 1997)

GB/T 3089.10 – 1993 Mechanical properties of fasteners – Bolts, screws, studs and nuts made of non-ferrous metals (eqv ISO 8839: 1986)

GB/T 3103.1–1982 (approved in 1988) Fasteners tolerances – Bolts, screws and nuts (eqv ISO



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