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

GB/T 11-2013

Replacing GB/T 11-1988

Countersunk head nib bolts

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Foreword

This standard is one of the national standards of the "bolt series of standards", a series that includes GB/T 8, GB/T 10, GB/T 11, GB/T 12, GB/T 13, GB/T 14, GB/T 15, 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 35, GB/T 5780, GB/T 5781, GB/T 5782, GB/T 5783, GB/T 5784, GB/T 5785, GB/T 5786, GB/T 5789, GB/T 5790, GB/T 16674.1 and GB/T 16674.2.

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 11-1988 Countersunk head nib bolts.

The main changes with respect to GB/T 11-1988 are as follows: the English name of the standard has been modified; the provision that "commodity fastener varieties should be selected in preference" (Clause 1 of the 1988 edition) has been deleted; the normative references have been updated (Clause 2); the "general length specification range" has replaced the "commodity specification range" (see Table 1); general technical conditions have been added (see Table 2); and property class 3.6 has been deleted.

This standard was proposed by the China Machinery Industry Federation and is under the jurisdiction of the National Technical Committee on Fasteners of Standardization Administration of China (SAC/TC 85).

The organisation responsible for drafting this standard is the China Machinery Productivity Promotion Centre; the participating drafting organisations are Ningbo Zhongji Machinery Parts Testing Co. Ltd., Ningbo Economic and Technological Development Zone Yonggang Fastener Co. Ltd. and the Ningbo Fastener Industry Association.

The previous editions of the standard replaced by this one are GB 11-1958, GB 11-1976 and GB/T 11-1988.

1 Scope

China's national dimensional standard for countersunk head nib bolts, one member of the long-running GB bolt series. A nib bolt is a countersunk bolt with a small square tenon under the head: the head sinks flush into a countersunk hole and the nib bites into the material, so the bolt cannot turn while the nut is tightened from the other side. That matters wherever there is access to only one face of the joint - the shell of a machine, a plate on a structure, the wearing part of an agricultural implement - and it is why the type has survived unchanged for decades. What a purchaser needs from a standard like this is not performance but interchangeability: a bolt bought from any supplier must fit the countersink and the tapped hole that were designed for it. The standard therefore fixes the form of the bolt, the full table of dimensions across the thread sizes it covers, and the general length range available for each size, together with the technical conditions - the thread standards and tolerance class, the mechanical property classes, the product grade and its dimensional tolerances, the surface finish, and the acceptance and packaging rules - each referred to the standard that governs it. It also gives the designation method and a worked example. It covers thread sizes M6 to M24 in product grade C, and it replaced the 1988 edition, dropping the lowest property class and adding a table of general technical conditions.

This standard specifies countersunk head nib bolts with thread sizes M6 to M24 and product grade C.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 2 Fasteners - Ends of parts with external metric ISO thread.

GB/T 90.1 Fasteners - Acceptance inspection; GB/T 90.2 Fasteners - Marking and packaging.

GB/T 196 General purpose metric screw threads - Basic dimensions; GB/T 197 General purpose metric screw threads - Tolerances.

GB/T 1237 Designation method for fasteners.

GB/T 3098.1 Mechanical properties of fasteners - Bolts, screws and studs.

GB/T 3103.1 Tolerances for fasteners - Bolts, screws, studs and nuts.

GB/T 5267.1 Fasteners - Electroplated coatings.

GB/T 5276 Fasteners - Bolts, screws, studs and nuts - Symbols and descriptions of

dimensions.

GB/T 16938 Fasteners - General requirements for bolts, screws, studs and nuts.

3 Dimensions

The form and the dimensions are given in Figure 1 and Table 1.

The dimensional symbols and the method of marking them conform to GB/T 5276.

The diameter of the unthreaded part of the shank is approximately equal to the pitch diameter of the thread or to the major diameter of the thread. The end of the bolt is a rolled end according to GB/T 2, and the underside of the nib may be round or flat.

Table 1 gives, for each thread size, the pitch, the thread length for the two ranges of bolt length, the maximum and minimum head diameter, the maximum and minimum nib width, the maximum and minimum nib height, the approximate head height and the maximum transition length, and it sets out the nominal lengths with their limits together with the general length specification range available for each thread size.

4 Technical conditions and referenced standards

The technical conditions and the referenced standards are given in Table 2.

For the material steel, Table 2 refers the general technical conditions to GB/T 16938; the thread tolerance class to the value stated there and the thread standards to GB/T 196 and GB/T 197; the mechanical property classes to GB/T 3098.1; the product grade to grade C except where Clause 3 specifies otherwise, with the tolerance standard GB/T 3103.1; the surface finish to "as processed", with the technical requirements for electroplating according to GB/T 5267.1 and any other surface treatment to be agreed between supplier and purchaser; and the acceptance and packaging to GB/T 90.1 and GB/T 90.2.

5.1 Designation method

The designation method is as specified in GB/T 1237.

5.2 Designation example

A countersunk head nib bolt with thread size $d = M12$, nominal length $l = 80$ mm, the property class stated in the example, no surface treatment and product grade C is designated: Bolt GB/T 11 M12x80.