



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

GB/T 3098.9-2020

**Mechanical properties of fasteners - Prevailing torque type steel
nuts**

Issued on: March 31, 2020

Implemented on: October 1, 2020

Issued by: SAMR; SAC

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Foreword

GB/T 3098 "Mechanical properties of fasteners" includes the following parts.

- GB/T 3098.1 Mechanical properties of fasteners - Bolts, screws and studs;
- GB/T 3098.2 Mechanical properties of fasteners - Nuts;
- GB/T 3098.3 Mechanical properties of fasteners - Set screws;
- GB/T 3098.5 Mechanical properties of fasteners - Tapping screws;
- GB/T 3098.6 Mechanical properties of fasteners - Stainless steel bolts, screws and studs;
- GB/T 3098.7 Mechanical properties of fasteners - Thread rolling screws;
- GB/T 3098.8 Mechanical properties of fasteners - Parts for bolted connections for use at temperatures from -200 Celsius~+700 Celsius;
- GB/T 3098.9 Mechanical properties of fasteners - Prevailing torque type steel nuts;
- GB/T 3098.10 Mechanical properties of fasteners - Bolts, screws, studs and nuts made of non-ferrous metals;
- GB/T 3098.11 Mechanical properties of fasteners - Drilling screws with tapping screw thread;

- GB/T 3098.12 Mechanical properties of fasteners - Cone proof load test on nuts;
- GB/T 3098.13 Mechanical properties of fasteners - Torsional test and minimum torques for bolts and screws with nominal diameters from 1 mm to 10 mm;
- GB/T 3098.14 Mechanical properties of fasteners - Widening test on nuts;
- GB/T 3098.15 Mechanical properties of fasteners - Nuts made of stainless-steel;
- GB/T 3098.16 Mechanical properties of fasteners - Stainless steel set screws;
- GB/T 3098.17 Mechanical properties of fasteners - Preloading test for the detection of hydrogen embrittlement - Parallel bearing surface method;
- GB/T 3098.18 Mechanical properties of fasteners - Blind rivets testing;
- GB/T 3098.19 Mechanical properties of fasteners - Blind rivets with break pull mandrel;
- GB/T 3098.20 Mechanical properties of fasteners - Wing nuts with specified proof torque;
- GB/T 3098.21 Mechanical properties of fasteners - Stainless steel tapping screws;
- GB/T 3098.22 Mechanical properties of fasteners made of the fine grain non-heat treatment steel - Bolts, screws and studs;
- GB/T 3098.23 Mechanical properties of fasteners - M42~M72 bolts, screws and studs;
- GB/T 3098.24 Mechanical properties of fasteners - Stainless steel and nickel alloy bolts, screws, studs and nuts for high temperature;
- GB/T 3098.25 Mechanical properties of fasteners - Guide for selection of stainless steel and nickel alloy fasteners.

This Part is Part 9 of GB/T 3098.

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

This Part replaces GB/T 3098.9-2010 "Mechanical properties of fasteners - Prevailing torque type steel nuts". Compared with GB/T 3098.9-2010, the main technical changes of this Part are as follows.

- Delete nuts of class 9 (see Table 6 and Table 9 of the 2010 edition);
- GIVE the data of thread specifications M3 and M4 as an annex (see Annex C);
- Surface condition of the test bolt/screw shall be in accordance with GB/T

16823.3 (see 9.3.2);

- In the test procedure, change the thread length of the test bolt/screw end protruding through the nut from "4 to 7 pitches" to "3 to 5 pitches" (see Figure 1 and 9.3.4);
- CHANGE the method for determination of the prevailing-off torque value (see point 5 of Figure 2).

This Part uses the redraft law to modify and adopt ISO 2320.2015 "Fasteners - Prevailing torque steel nuts - Functional properties".

The technical differences between this Part and ISO 2320.2015 and their reasons are as follows.

- In the normative references, replace the international standards with Chinese standards (see Clause 2), to comply with China's basic fastener standards;
- In footnote a, add "When $D > 24$ mm, it is equal to 80 % of the proof load of class 4.8 for bolts", to meet the actual production (see Table 3).

This Part also makes the following editorial change.

- Modify the standard name.

This Part was proposed by China Machinery Industry Federation.

This Part shall be under the jurisdiction of National Technical Committee 85 on Fasteners of Standardization Administration of China (SAC/TC 85).

Drafting organizations of this Part. China Productivity Center for Machinery, Haiyan Yuxing Nuts Co., Ltd., Gem-Year Industrial Co., Ltd., Shandong Gaoqiang Fastener Co., Ltd., Zhoushan 7412 Factory, Wenling Luogang Machinery Co., Ltd., Bossard Fastening Solutions (Shanghai) Co., Ltd., Hunan Shenyi Machinery Application Research Institute Co., Ltd., Beijing Automotive Technology Center Co., Ltd., Geely Automobile Research Institute (Ningbo) Co., Ltd., Meishan CRRC Fastening System Co., Ltd., Zhejiang New Oriental Auto-parts Co., Ltd., Shanghai High Strength Bolts Plant Co., Ltd., Mechanical Industry General Parts Product Quality Supervision and Testing Center.

This Part is explained by National Technical Committee 85 on Fasteners of Standardization Administration of China.

The previous editions of the standard replaced by this Part were released as follows.

- GB/T 3098.9-1993, GB/T 3098.9-2002, GB/T 3098.9-2010;
- GB/T 928-1980.

Mechanical properties of fasteners - Prevailing torque
type steel nuts

1 Scope

This Part of GB/T 3098 specifies the functional properties for prevailing torque steel nuts when tested at an ambient temperature of 10 °C to 35 °C. It includes a combined test method to determine the prevailing torque properties and the torque/clamp force properties at the same time.

2 Normative references

The following documents are indispensable for the application of this document. For the dated references, only the editions with the dates indicated are applicable to this document. For the undated references, the latest edition (including all the amendments) are applicable to this document.