



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

GB/T 197-2018

General purpose metric screw threads -- Tolerances

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Foreword

"General purpose metric screw threads" has issued the following standards.

- GB/T 192-2003 General purpose metric screw threads - Basic profile;
- GB/T 193-2003 General purpose metric screw threads - General plan;
- GB/T 196-2003 General purpose metric screw threads - Basic dimensions;
- GB/T 197-2018 General purpose metric screw threads - Tolerances;
- GB/T 2516-2003 General purpose metric screw threads - Limit deviations;
- GB/T 9144-2003 General purpose metric screw threads - Preferable plan;
- GB/T 9145-2003 General purpose metric screw threads - Limits of sizes for the screw threads of medium quality and preferable plan;
- GB/T 15756-2008 General purpose metric screw threads - Limits of sizes.

This Standard is the tolerance standard of "General purpose metric screw threads".

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

This Standard replaces GB/T 197-2003 "General purpose metric screw threads - Tolerances".

Compared with GB/T 197-2003, the main technical changes of this Standard are as follows.

- ADD four kinds of external thread tolerance positions (a, b, c and d) (see Clause 5);
- ADD tolerances of multiple-start threads (see Clause 9);
- ADD the designation of coated threads (see 12.5 and Annex A);
- ADD the content of tolerance system (see Clause 4).

This Standard uses the redraft law to modify and adopt ISO 965-1:2013 "ISO general purpose metric screw threads - Tolerances - Part 1: Principles and basic data". The main technical differences between this Standard and ISO 965-

1.2013 and their reasons are as follows.

- As for the normative references, this Standard has made adjustments with technical differences, to adapt to the technical conditions of China. The adjustments are mainly reflected in Clause 2 "Normative references". The specific adjustments are as follows.

? Replace ISO 68-1 with GB/T 192, which modifies and adopts the international standard;

? Replace ISO 261 with GB/T 193, which modifies and adopts the international standard;

? Replace ISO 1502 with GB/T 3934, which modifies and adopts the international standard;

? Replace ISO 5048 with GB/T 14791, which is identical to the international standard.

- This Standard adds the designation of coated threads; expands the applicable types of coated threads in the ISO standard; and avoids misunderstandings about coated thread designation (see 12.5 and Annex

A).

- Delete Figure 1 of the ISO standard. The knowledge of limit deviation and tolerance class has been popularized; there is no need to explain.

This Standard also makes the following editorial changes.

- Modify the standard name;

- ADD an informative Annex A.

This Standard was proposed by and shall be under the jurisdiction of National Technical Committee 108 on Thread of Standardization Administration of China (SAC/TC 108).

Drafting organizations of this Standard. Qifeng Precision Industry Sci-Tech Corp., China Productivity Center for Machinery, Beijing Automotive Technology Center Co., Ltd., Zhejiang Mekol Tools Co., Ltd., Zhejiang Changhua Auto Parts Co., Ltd.

Main drafters of this Standard. Chen Yuezhong, Li Xiaobin, Luan Jianxin, Chen Pengyu, Zhang Yiwei.

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

- GB/T 197-1963, GB/T 197-1981, GB/T 197-2003.

General purpose metric screw threads - Tolerances

1 Scope

This Standard specifies the tolerances and designations of general purpose metric screw threads. The basic profile and general plan of general purpose metric screw threads shall meet the requirements of GB/T 192 and GB/T 193, respectively.

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.

GB/T 192 General purpose metric screw threads - Basic profile (GB/T 192-2003, ISO 68-1:1998, MOD)

3 Terms, definitions and symbols

For the purposes of this document, the terms and definitions given in GB/T

4 Tolerance system

The tolerance system consists of tolerance grades and tolerance positions. The tolerance grades are expressed by number, such as 4, 6 and 8. The tolerance positions are expressed by letter, such as H, G, h and g.

5 Tolerance positions

The following tolerance positions for internal and external threads are standardized.

6 Tolerance grades

The tolerance grades for the following screw thread pitch and crest diameters are standardized.

7 Lengths of engagement

The lengths of thread engagement are classified into three groups: short (S),

8 Recommended tolerance classes

In order to reduce the number of gauges and tools, the tolerance classes should preferably be chosen from Tables 7 and 8.

9 Tolerances of multiple-start threads

With the same pitch, the crest diameter tolerances for multiple-start threads are the same as for single-start threads.

10 Tolerance formulae

In order to give a uniform series of tolerance values, the above-mentioned