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

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Fastening screw thread gauging systems for acceptability

紧固螺纹检测体系

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4 Testing system

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed and managed by the National Thread Standardization Technical Committee (SAC/TC108). Please note that some of the contents of this document may involve patents. The issuing organization of this document is not responsible for identifying these patents. This standard was drafted. Shanghai Institute of Metrology and Testing Technology, China Machine Productivity Promotion Center, Suzhou Edmond Measurement and Control System Limited Company, Shenzhen Zhongtu Instrument Technology Co., Ltd., Shanghai Fasteners and Welding Materials Technology Research Institute Co., Ltd., Guangdong Metrology Science Research Institute, Nanjing Dott Tools Co., Ltd. The main drafters of this standard. Cai Minggang, Li Xiaobin, Zhang Xuzeng, Wang Jian, Cao Chengming, Ma Junjie, Xue Junyi, Liang Ping, Li Xuelin. Fastening thread inspection system

1 Scope

China's national standard for the gauging systems used to accept fastener screw threads. It specifies the test parameters, the test requirements and the test methods, and it applies to the acceptance of fastening threads. Gauging a thread is less obvious than it sounds, because a thread has several independent characteristics - the pitch diameter, the major and minor diameters, the pitch itself, the flank angle - and they compensate for one another. A thread with an error in its flank angle can still admit a gauge if its pitch diameter is undersized, which is why the classical system uses a GO gauge that checks the whole thread as an assembly and a NO-GO gauge that checks the pitch diameter alone. Which combination of gauges is applied, and to what tolerance, is what a gauging system defines. It matters commercially because a fastener that passes at the maker and fails at the customer is a dispute with no technical resolution unless both were using the same system.

This standard specifies the tightening thread detection system consisting of test parameters, test requirements and test methods. This standard applies to the thread acceptance of fastening thread products.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this article. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 14791 thread terminology

GB/T 28703-2012 cylindrical thread testing method

3 Terms and definitions

The following terms and definitions as defined in GB/T 14791 apply to this document.

3.1 Stop end diameter NOTGOfunctional diameter It just fits the imaginary thread diameter of the actual thread flank. The imaginary thread has the ideal tooth type and the most specified by the stop gauge standard Large twist length.

Note. The threaded end ring and plug gauge can only check the screw-in end of the workpiece thread.

3.2 Radial diameter difference variation of pitch diameter in different radial directions The maximum difference between each radial mid-range (taken a positive value) over a lead length.

Note. The radial section shape of the medium diameter cylinder is usually elliptical or triangular. Two-point contact (180° between two probes) and three-point contact (three measurements) The head spacing 120° gauge measures the median diameter in the elliptical and triangular cross sections, respectively.

3.3 Axial diameter difference variation of pitch diameter at different axial positions The maximum difference between the diameters in each axial position (taken a positive value) in the plane of the thread axis and the specified length of the screw.

Note. The axial intermediate diameter difference can only be measured at both ends of the complete thread with the agreement of the supplier and the buyer.

3.4 Tooth type comprehensive deviation cumulative form deviation Deviation from other thread parameters (pitch, flank angle, radial radial diameter difference, axial intermediate diameter difference, etc.) other than the middle diameter within the specified screw length The maximum change in the median diameter caused by the combined action.

4 Testing system

The three fastening thread detection systems consisting of test parameters, test requirements and test methods are. System A, System B and System C. tight The inspection systems for external and internal threads are shown in Tables 1 and 2,

respectively.

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