

ICS 17.040.40

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

GB/T 20308-2020

Replacing GB/Z 20308-2006

Geometrical product specifications (GPS) - Matrix model

Issued on: April 28, 2020

Implemented on: November 1, 2020

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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Foreword

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

This standard replaces GB /Z 20308-2006 "Product Geometry Technical Specification (GPS) Master Plan", which is the same as GB /Z 20308-2006

The main technical changes are as follows.

--- Changed the concept of "GPS" to "concept" and changed related content (see Chapter 2, Chapter 2 of the.2006 edition).

--- Change "terms and definitions" to "structure". Modified the GPS standard classification method, and canceled the "GPS synthesis" in the GPS standard type

"Standard", originally classified as a standard in the GPS comprehensive standard, is currently classified as a basic GPS standard or a general GPS standard

(See Chapter 3).

--- Added "benchmark" content (see Chapter 4).

--- Part of the content of "Establishment of Standard Chain and Its Content" was revised to "Chain Link" (see Chapter 5, Chapter 4 of the.2006 edition).

--- Modified the link in the GPS matrix model. Links in the original GPS matrix model "Product file representation, tolerance definition and its number

Values, definitions of characteristics or parameters of actual elements, work piece deviation evaluation, measuring instrument quantity and calibration of measuring equipment "are changed to

Note, element requirements, element characteristics, conformity and non-compliance, measurement, measuring equipment, calibration ". At the same time, the original link sequence is deleted

No., changed to A, B, C, D, E, F, G (see Chapter 5, Chapter 4 of the.2006 edition).

--- Part of the "Master Plan in the Field of GPS" was revised to "Formulation of GPS Standards" (see Chapter 6,.2006 edition)

Chapter 5).

--- Added the principles listed in the preparation of ISO GPS standards (see Chapter 6).

--- Deleted the "current GPS national standard position in the GPS matrix model" (see Appendix A of the.2006 edition).

The translation method used in this standard is equivalent to the use of ISO 14638..2015 "Geometric Product Specification (GPS) Matrix Model".

This standard has made the following editorial changes.

--- Deleted Note 2 of Appendix B.

This standard is proposed and managed by the National Product Geometry Technical Standardization Technical Committee (SAC/TC240).

This standard was drafted by. China Machine Productivity Promotion Center, Zhengzhou University, China Aviation Comprehensive Technology Research Institute, Beijing Times Zhifeng Technology Co., Ltd.

Limited company, Guanzhi Automobile Co., Ltd., Zhongyuan Institute of Technology, Xi'an Jiaotong University.

1 Scope

This standard is a basic GPS standard, which explains the basic concepts of product geometric technical specifications (GPS), and gives the overall

The system framework of GPS standards includes the distribution of a series of current and future GPS standards in the system.

The system framework aims to provide users of GPS standards by explaining the scope of different standards and their interrelationships

help.

2 Concept

GPS is a system used to describe the geometric characteristics of products at different stages of their life cycle (such as design, manufacturing, inspection, etc.).

The geometric features of GPS include size, shape, direction, position, surface structure, etc.

Nine geometric features are defined in the GPS standard system, and other geometric features may be added in the future. These geometric features are.

---size;
 ---distance;
 ---shape;
 ---direction;
 ---position;
 ---beat;
 --- Contour surface structure;
 --- Regional surface structure;
 ---Surface defects.

The GPS standards related to the above nine geometric features are organized in a series of nine standards (see 3.3). every kind

The geometric features may be subdivided into more specific elements, and each element definition corresponds to a standard chain.

For example, "size" is a geometric feature, and the size can be subdivided into "cylinder size", "cone size", "sphere size", etc., each

All correspond to a standard chain.

Angles are classified into size and distance geometric features, and radii are classified into distance and shape geometric features.

For each geometric feature, there should be a specification that can define the feature, be able to measure, and be able to compare the measurement results with the specification.

These requirements related GPS standards are defined in a set of seven chains consisting of each standard chain (see 3.3).

Some manufacturing processes, such as casting and welding, have special requirements that are different from the general manufacturing process.

Standards can be grouped into a further standard chain.

Typical mechanical parts, such as threads and gears, have special requirements that are different from general parts.

Standards can be grouped into a further standard chain.

In the future, other geometric feature classes and links may be added to reflect the development of manufacturing and inspection processes and other industry requirements.

These standards, standard categories, and standard chains are arranged in a matrix to clearly indicate the scope of application of each standard and

The relationship between standards.

3.1 Overview

GPS standards can be arranged in a matrix of rows and columns. Each row of the matrix consists of one of 9 geometric features, this

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