

ICS 17.040.01
CCS J04



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

GB/T 4096.2-2022

**Geometrical product specifications (GPS) - Wedges - Part 2:
Dimensioning and tolerancing**

产品几何技术规范（GPS）楔体 第2部分：尺寸与公差标注

Issued on: October 12, 2022

Implemented on: October 12, 2022

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 Dimensioning of wedges	1
5 Tolerances for wedges	3
Appendix A (Informative) Relationship with GPS Matrix Model	8

Foreword

This document was issued on 12 October 2022 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 12 October 2022.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

It is classified under ICS 17.040.01, Chinese classification J04.

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules for Standardization Documents" drafting.

This document is part 2 of GB/T 4096 "Technical Specification for Product Geometry (GPS) Wedge". GB/T 4096 has issued the following part.

--- Part 1. Angle and slope series;

--- Part 2. Dimensions and tolerances.

This document is equivalent to ISO 2538-2:2014 "Geometric Product Specification (GPS) Wedge Part 2. Dimensions and Tolerance Standards

Note".

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

This document is proposed and managed by the National Product Geometric Technical Specification Standardization Technical Committee (SAC/TC240).

This document was drafted by. Zhejiang University, Shandong Industrial Technology Research Institute of Zhejiang University, China Machine Productivity Promotion Center Co., Ltd., Chengdu Xinxin

Information Engineering University, Dongguan Zhongwang Precision Instrument Co., Ltd., Zhengzhou University, Shanghai Weilai Automobile Co., Ltd., China Machine Research Institute of Standard Technology

(Beijing) Co., Ltd.

The main drafters of this document. Yang Jiangxin, Li Tukun, Cao Yanlong, Xu Yuanping, Zhang Zongzheng, Ming Cuixin, Zheng Peng, Zhu Yue, Luo Junding, Zhao Peng, Cao Yanpeng, Zheng Chunping, Yu Minming, Tang Dan, Fu Hongsheng, Song Shuyang.

Introduction

Wedge is a type of angular dimension element other than cone, which is widely used in machine structure. With the new generation of product geometric specifications

The relevant definitions and provisions in the original standards are no longer applicable. For example, in GB/T 38762.3-2020, the angle dimension elements are

Redefine and classify, cancel the concept of "prism", collectively referred to as "wedge". The standard of wedge dimensioning method has been lacking, and the traditional tolerance standard

Note that it is impossible to give clear instructions on the surface shape requirements of the wedge, which can easily cause uncertainty and affect product functions.

At the same time, ISO 2538-1.2014 and ISO 2538-2.2014, which have been technically revised internationally, replaced ISO 2538.1998 "Product Specifications".

Geotechnical Specification (GPS) Prism Angle and Slope Series". GB/T 4096-2001 is equivalent to ISO 2538.1998.in order to

The technical content is consistent with the international standard, and GB/T 4096 is now divided into two parts for publication.

The formulation and revision of GB/T 4096 not only helps to unify the concept of product geometric technical specification (GPS), but also provides the dimensions and geometry of wedges.

The labeling method can effectively reduce the uncertainty caused by the application of size specification control, which is helpful for effectively improving processing efficiency and process quality, and promoting

It is of great significance to optimize the full-cycle management of product quality.

GB/T 4096 "Product Geometric Specifications (GPS) Wedge" consists of two parts.

--- Part 1.Angle and slope series. A series of angles and slopes are specified for general purpose wedges designed to reduce the

The number of tools, gauges and measuring instruments required for the production of a workpiece.

--- Part 2.Dimensions and tolerances. The specified features and dimensions of the wedge, as well as the dimension and tolerance labeling method, aim to meet the

Functional requirements, reducing uncertainty.

Product Geometry Specification (GPS) Wedge

Part 2.Dimensioning and Tolerancing

1 Scope

GB/T 4096.2-2022 gives the drawing rules for wedges, the angular size elements that are not cones and that appear all over machine structures as sloping and tapering features. Dimensioning comes first: the characteristics of a wedge, and the combinations of features and dimensions a designer may select to define one, so that the marking matches the function of the part instead of over-defining it. Tolerancing follows, covering how tolerances are attached to those dimensions. An informative annex places the document within the GPS matrix model, showing which links of the specification and verification chain it affects. Truncated wedges are the form described, for brevity, but the rules apply to the other forms as well. Part 2 of the GB/T 4096 series. The need for the document comes from a change in the vocabulary itself: the newer generation of GPS standards redefined and reclassified angular size elements, dropped the term prism and gathered them all under wedge, which left the older dimensioning and tolerancing practice pointing at concepts that no longer exist. A drawing made on the old habits can be read two ways, and an angular feature measured differently from the way it was specified is an argument waiting to happen. For designers, drawing offices, and inspection and metrology staff working to GPS.

This document specifies the method of dimensioning and tolerance marking of wedges.

NOTE. For brevity, this document only describes truncated wedges, but is applicable to other types of wedges as well.

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is

applicable to
this document.

ISO 2538-1 Geometric Product Specification (GPS) Wedge Part 1 Angle and Slope Series
[Geometrical]product

Note. GB/T 4096.1-2022 Product Geometric Specifications (GPS) Wedge Part 1.Angle and Slope Series (ISO 2538-1.2014, IDT)

3 Terms and Definitions

The terms and definitions defined in ISO 2538-1 apply to this document.

4 Dimensioning of wedges

4.1 Characteristics of the wedge

In order to define the wedge, the features and dimensions in Table 1 can be selected for labeling in combination to meet the functional requirements of the wedge.

Table 1 Features and dimensions of wedges

Characteristic and Dimension Alphabet Symbols

Annotation example

Preferred method Optional method

feature

Wedge Ratio C 1.2.835641 -

Wedge angle beta 20° -

Wedge slope S 1.2.747477 36.4%

size

Height of large end of wedge body H - -

Height of small end of wedge h - -

Height Hx at a given cross section - -

Wedge big end thickness T - -

Wedge small end thickness t - -

Thickness Tx at a given cross section - -

Wedge length L - -