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**NATIONAL STANDARD OF THE
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GB/T 11355-2025

Replacing GB/T 11355-2008

V-belt and V-ribbed belt drives - Calculation of power ratings

V带和多楔带传动 额定功率的计算

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB/T 11355-2008 "Calculation of Rated Power for V-Belt and Multi-Wedge Belt Drives" and is consistent with GB/T 11355-2008. Compared to previous versions, aside from structural adjustments and editorial changes, the main technical changes are as follows:

---Added terms and definitions (see Chapter 3). Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee on Standardization of Pulleys and Belts (SAC/TC428). This document was drafted by: Anhui Zhongliang Intelligent Transmission Technology Co., Ltd., Hubei University of Automotive Technology, and Jiamusi Huier Rubber & Plastics Co., Ltd. The company, Ningbo Jaguar Transmission Systems Co., Ltd., China Machinery Productivity Promotion Center Co., Ltd., Zhejiang Fengmao Technology Co., Ltd., Ningbo Kai Chi Adhesive Belt Co., Ltd., Sanlix Co., Ltd., Shaoxing Huafangyuan Transmission Technology Co., Ltd., Jinjiulong Industrial Co., Ltd., Zhejiang Dong Xing Automotive Parts Co., Ltd., Zhejiang Fulong Transmission Technology Co., Ltd., Zhejiang Baoli Rubber & Plastics Co., Ltd., Sichuan Deen Precision Machinery Co., Ltd. Technology Co., Ltd., Jilin University, Shenzhen Hefeng Gear Machinery Co., Ltd., Guangde Tianpeng Industrial Co., Ltd., Dongguan Juri Electric Co., Ltd. Technology Co., Ltd., China Coal Zhangjiakou Coal Mining Machinery Co., Ltd., Changchun University, Zhejiang Sihai New Materials Co., Ltd., Zhejiang Junbo Automotive Parts Co., Ltd., Jiangsu Baoxiang Intelligent Technology Co., Ltd., Qingdao Product Quality Inspection and Research Institute, China Machinery Research Institute of Standards and Technology (Beijing) Co., Ltd. The main drafters of this document are. Zhu Shusheng, Wu Yizhen, Ren Aihua, Wang Honggang, Lu Zhaoming, Qin Shuan, Dong Yongxiu, Ying Jianli, and Pan Wandong. Sun Jiahao, Zhang Liujie, Pan Zhaoxing, Xia Mingxiang, Xing Junjie, Xie Longde, Feng Zengming, Cao Xiaolin, Wu

Guomiao, Xiong Hongyuan, Xie Hongzhang, Shi Yaochen Huang Jun, Li Chao, Xie Guobao, He Ning, Zhou Peng. The release history of this document and the document it replaces is as follows:

---First published in 1989 as GB/T 11355-1989, and revised for the first time in 2008;

---This is the second revision. Calculation of rated power for V-belt and multi-ribbed belt drives

1 Scope

GB/T 11355-2025 is the Chinese national standard on v-belt and v-ribbed belt drives - calculation of power ratings, in the field of mechanical systems and components. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 October 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2026. Classification: ICS 21.220.10, CCS J18. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes the formulas for calculating the rated power of two-wheel industrial V-belt and multi-ribbed belt drive systems. This document applies to general industrial V-belt and multi-ribbed belt drives; it can be used as a reference for other applications.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 6931.1 Belt Drive Terminology Part

3 Terms and Definitions

The terms and definitions defined in GB/T 6931.1 and GB/T 6931.2, as well as the following terms and definitions, apply to this document.

3.1 Rated power Under the conditions of proper installation and maintenance of the transmission device, and according to the specified geometric dimensions and

environmental conditions, within the specified time period, a single root... The maximum power that each wedge of a V-belt and a multi-ribbed belt can transmit.

Note. Rated power is a function of the cross-section of the V-belt and multi-ribbed belt, the pitch diameter of the small pulley, and the angular velocity of the small pulley.

4. Calculation Formula The rated power P transmitted per wedge of a single V-belt or multi-wedge belt is calculated according to formula (1). $P = K(P_1 \Delta P_1 \Delta P_2)$ (1) $K = m - 1$ (1- m - π) $P_1 = d_p \omega C_1 - C_2 d_p \div -C_3(d_p \omega)^2 - C_1 \lg(d_p \omega)$ $\Delta P_1 = C_4 \omega d_p \lg(1 + 10 C_2 C_4 d_p (1S - 1))$ $\Delta P_2 = C_4 d_p \omega \lg L$

0 In the formula. m is 5 for V-belts and 4 or 5 for multi-ribbed belts; α

--- the wrap angle of the smaller pulley, in radians (rad); P_1

--- Basic rated power, in kilowatts (kW); ΔP_1

--- The additional power value caused by the transmission ratio, in kilowatts (kW);