

DICTIONARY OF GEAR TERMS  
ARRANGED IN

英 ENGLISH  
德 GERMAN  
俄 RUSSIAN  
日 JAPANESE  
汉 CHINESE

齿轮用语辞典

钟涌泉 编著



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英·德·俄·日·汉

# 齿轮用语辞典

钟涌泉 编著

中国轻工业出版社

一九八七年

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英 德 俄 日 汉  
齿 轮 用 语 辞 典

A DICTIONARY OF GEAR TERMS ARRANGED  
IN ENGLISH, GERMAN, RUSSIAN, JAPANESE,  
AND CHINESE

编著: 钟涌泉

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# 序

齿轮是各种机械中一种重要的传动零件，它的种类很多，用途很广，发展极快。随着齿轮技术的不断发展，有关齿轮方面的专业词汇正在日益增多。因此，对于从事齿轮研究、设计、制造和教学的广大科技工作者，厂矿企业的工程技术人员和工科院校的师生，在阅读和翻译齿轮方面的专著及论文时，十分需要有一本合适的齿轮词汇方面的专业工具书。

安徽省机械科学研究所钟诵泉工程师从事齿轮技术工作二十余年，他在工作中注意收集、积累了大量齿轮词汇卡片，并汇编后摘录其一部分发表于《安徽机械》。在1980年安徽省机械工程学会年会上，我们了解到钟诵泉工程师的工作，对他二十多年来坚持不懈的勤奋精神，刻苦钻研认真考证的科学态度十分钦佩和赞赏，并表示大力支持他继续进行词汇的编写工作。

现在，经过多年的辛勤劳动，一本用五种文字汇编的，内容包括两千四百多条词汇的齿轮辞典，终于与读者见面了。我们愿意向齿轮界广大科技工作者和从事专业阅读译的读者推荐这本很有用处的工具书。我们相信，本书的出版，填补了我国这方面的一个空白，并将在国内外产生一定的影响。

合肥工业大学教授

丁诵泉

一九八六年四月

## 前 言

综合性辞书，多系鸿篇巨制，但也不可能包罗万象，应有尽有。对于广大科技人员来说，他们在阅译专业书刊时，总还需要辅之以有关专业性字典。即便如此，为求得某一词的准确含义，往往还需要翻阅多种中外文工具书。因此，案头倘置一两本得心应手的“专业性词汇”，对提高阅译效率，减少差错，肯定会大有帮助。

齿轮是各类机械中的主要传动元件之一，它的种类很多，用途极广。随着齿轮技术的不断发展，国内外文献中关于“齿轮用语”的词汇量正在不断扩大，许多专业读者在阅译文献时，迫切需要“齿轮用语”方面的工具书。

笔者从六十年代初期就着手收集有关齿轮设计、制造、测量和齿轮加工机床与工具等方面的词汇，1979年，曾在《安徽机械》刊物上摘录发表(日、英、德、俄、汉五种文字对照)齿轮用语词汇一百例，受到专家、教授及齿轮界同行们的重视并给予热情的鼓励，希望早日汇编成书。

本《辞典》具有以下特点：

1.力求收集面广。它包括齿轮设计、加工、测量、机床、刀具等方面用语并尽可能附上示意图。

2.力求兼收并蓄。书中，尽可能列出齿轮用语中的同义词和多义词，以便读者查阅和对照。

编著“齿轮用语辞典”，不同于制订“齿轮术语标准”。标准中，不允许存在多义词，也不能存在过多的同义词，以免误解，而本书则力求兼收并蓄，以供读者阅译对照。如：我国《GB3374-82 齿轮基本术语》中，用“基本齿廓”，不使用“基本齿形”、“原始齿廓”等词；用“当量齿数”，不使用“假想齿数”、“诱导齿

数”、“选刀齿数”、“相当齿数”“虚齿数”等词。又如：“蜗杆”一词，日本工业标准“歯車用語”(JIS B0102—1966)中，称为：ウォーム〔worm〕，但一般日文书刊及辞书中，也有用いもむし〔芋虫〕；えいてんら〔永転螺〕；まんねんねじ〔万年螺子〕；らしぼう〔螺歯棒〕；むたんら〔無端螺〕；わねじ〔輪螺子〕等同义词。苏联国家标准(ГОСТ16531—70)中，称“人字齿圆柱齿轮”为：“Шевронное цилиндрическое зубчатое колесо”(“Шевронное зубчатое колесо”)，但一般俄文资料中，也有用Шевроник；Шевронное Колесо；Шевронная шестерня；Шестерня с угловым зацеплением；Колесо с шевронными зубьями；Цилиндрическое шевронное колесо，……等同义词的。

此外，同一语种的某些“多义词”，稍不留心，含义易弄错：英语的“Tooth flank”一词，既可指“齿面”(位于齿顶曲面与齿根曲面之间的轮齿侧表面)，又可指“下齿面”(位于分度曲面与齿根曲面之间的那一部分齿面)，即：“Tooth flank”=“(Tooth) Dedendum flank”。德语的“Innen(zahn)rad”一词，既可指“内齿轮”(“Internal gear”)，又可指“中心轮”、“太阳轮”(“Sun(tooth)gear”)。中文的“斜齿轮”，通常是指斜齿圆柱齿轮(Helical cylindrical gear)，而台湾省科技界则是指“锥齿轮”、“伞齿轮”(Bevel gear)，即源于日语的“斜歯車”。其实，即使各国标准中的用词，也有某些差异。例如，“公共锥顶”一词，美国齿轮制造者协会(AGMA)称为：Apex of pitch cone；英国标准(BS)称为：Common apex of gear；国际标准化组织(ISO)称为：Cone apex；德国工业标准(DIN)称为：Teilkegelspitze(f)，瑞士标准协会(VSM)则称为：Kegelspitze(f)。本书，对其异同之处，均注明出处，以资对比与查考。

本《辞典》在编写过程中，得到了丁爵曾教授，陶升元副教

授，郑钦霖工程师等热情鼓励和帮助，李元正高级工程师、陈祝同高级工程师、林庆元工程师、陈祖锐工程师、梁桂明高级工程师、蔡康洪副教授、张希康高级工程师、钟长琪高级工程师、雷权邦工程师、余国庆工程师、冯汉生馆员（翻译）及评审组同志均给了我很大支持和帮助。衷心感谢翻译家岳诚教授在百忙中为本辞典的英译前言执笔。

本书之所以能顺利出版，是由于得到了张善保工程师及其创办的研究所的无私支援和精神鼓励。正由于此，笔者二十多年的心血，才不至付之东流！——还有，几年来，来自全国各地的许多信件以及人民日报记者张振国同志和安徽日报通讯员赵如广同志对我的采访与报导，均对我是很大的鼓励和鞭策。谨在此一并表示衷心的感谢。

限于本人的专业知识和外语水平，管窥蠡测，挂一漏万的缺点错误在所难免，热忱希望专家、学者和广大读者批评指正，以便修订补充。

钟 诵 泉

一九八六年一月

英 · 德 · 俄 · 日 · 汉

# 齿 轮 用 语 辞 典

——英文“前言”及“说明”

A DICTIONARY OF GEAR TERMS ARRANGED IN  
ENGLISH, GERMAN, RUSSIAN, JAPANESE, AND  
CHINESE

——English translation of the “FOREWORD”  
and the “GUIDE TO THE DICTIONARY”



## Foreword

It is probably a universally accepted viewpoint that a general dictionary, no matter how comprehensive it would be, is in no sense all all-inclusive wordbook. As a matter of fact professional personnel are particularly in need of a technique lexicon whenever they take up publications of a specialized scientific area, either for a mere perusal or with an aim in delving for data or facts, or still in view of making a translation. Even so, a lot of reference books in Chinese or in foreign languages, are sometimes exceedingly necessary in order to make out the exact meaning of certain terms. Most of us, therefore, would indeed find it helpful and serviceable if one or two copies of good technological nomenclature could be at hand when studying as well as working.

A key component in the system of mechanical transmission, the gear, or toothed wheel, has a variety of forms and many ways of usage. In keeping with the obvious advancement of gear technology, new terms in relation to toothed wheel have been ever-increasing that almost makes a reader impossible to go through a piece of document freely without a handy dictionary. And it is on this account that a lexicon dealing with gear nomenclature, one being multilingually compiled in particular, is now in great demand.

Since the 1960s, the author has set about to collect techni-

que terms concerning the process of gear-production such as designing, casting, checking and testing, as well as tools and machine tools that are used for gear-making. A part of this amassment, either from textbooks, monographs or from periodicals, was published in 1979 in the quarterly *Machinery Of Anhui (Proving)* under the title "A Japanese-English-German-Russian-Chinese Vocabulary of Technical Terms in the Study of Gear" with one hundred examples for their usage, which has been considered to be of great worth by experts, teachers, and engineers and technicians whose cordial encouragement has become a major impetus for the author to put out this dictionary in due time.

The dictionary, based on the above-mentioned article and entitled *A Dictionary of Gear Terms Arranged in English, German, Russian, Japanese and Chinese*, is centered on the following distinctive features:

1. Comprehensiveness; Nearly everything concerning the technology of toothed wheel making such as designing, processing, and measuring as well as tools and machine, tools will be found in this dictionary as an entry with an illustration to make the definition more lucid and accurate.
2. Inclusiveness; Synonyms and polysemants, if any, are included as many as possible so that it may provide the readers with a good stock of vocabulary and enable them to choose and contrast in a freer and more comprehensive scope as well, A dictionary per se is quite different from a book of standard terminology in which no polysement shall be included while synonyms are usually reduced to the least

amount, so as to avoid any possible ambiguity. On the contrary, this dictionary is prepared to be exhaustive in behalf of the readers who would likely to draw a comparison or to determine a choice. Take the Chinese Gb 3374-82 Basic Terminology of Gears for example, it prefers the term “基本齿廓” rather than either “基本齿形” or “原始齿廓”; the term “当量齿数” rather than “假想齿数”、“诱导齿数”、“选刀齿数”, “相当齿数” or “虚齿数”, etc. In Japan, the industrial standard terminology, the JIS B0102-1966, chooses the name ウォーム [worm] in preference to such synonyms as いもむし [芋虫], えいてんら [永転螺]、まんねんねじ [万年螺子], らしばう [螺齿棒]、むたんら [無端螺]、れねじ [輪螺子], and the like, which are frequently found in Japanese magazines and lexical works. The Soviet national standard terminology, that is, the ГОСТ 16531-70, has the “Cylindrical herringbone gear” termed as “Шевронное цилиндрическое зубчатое колесо”(шевронное зубчатое колесо), but general Russian technical documents also refer to the same device as Шевроник, шевронное колесо, Шевронная шестерня, Шестерня с угловым зацеплением, Колесо с шевронными зубьями, Цилиндрическое шевронное колесо, and so forth.

Polysemants of the same language, on the other hand, are apt to confuse in their meaning if little attention is paid to. The English term “tooth flank”, for instance, denotes simultaneously “(the whole) tooth surface”, i. e., the lateral Surface that overlaps the curved surface from the top to the root on a tooth, and “the lower tooth surface”,

which signifies the section between the indexing curved surface and the tooth root, that is to say, the "tooth flank" = "(tooth) dedendum flank". The German appellation "Innen-(zahn)rad" may stand for either the "internal gear", the "centre wheel", or the "sun (tooth) gear". On the mainland the Chinese technical term "斜齒輪" designates as a whole the "斜齒圓柱齒輪" while in Taiwan Province it represents the "斜齒輪" (傘齒輪) which may be traced back to the Japanese origin ななめはぐるま [斜齒車]. In practice, similar terms may vary in their verbal construction in different standard systems. For example, "apex of pitch cone" is an American choice by the AGMA while its equivalents are respectively styled "common apex of gear" by BS in the United Kingdom, "Cone apex" by the ISO, "Teilkegelspitze(f)" by the DIN in German, and "Kegelspitze(f)" by the VSM in Switzerland. All of these sources, however, are included in the present dictionary.

In the making of this dictionary the author has enjoyed heart-felt encouragement and great help from many celebrated scholars among whom special indebtedness should be extended to Prof. Ding Jūzeng, Prof. Tao Shengyūan, and Mr. Zheng Qinlin, the engineer. Gratitude should also go to the following personages or personnel for their selfless support and friendly comments, Mr. Li Yūanzheng, the senior engineer, Mr. Chen Zhutong, the senior engineer, Lin Qingyūan, the engineer, Chen Zurui, the engineer, Liang Guiming, the senior engineer, Prof. Cai Kanghong, Mr.

Zhong Changqi, the senior engineer, Mr. Lei Qūabang, the engineer, Mr. Yū Guoqing, the engineer, and Mr. Feng Hansheng, the librarian and translator, and well as shaft members of the editorial team. The author would express his gratefulness to Prof. Yūe Cheng who, as a linguist and translator, had done the English translation of the foreword.

Special thanks also go to Mr. Zhang Shanbao, the engineer, and personnel of the institute under his lead, without their liberal suport this dictionary would not have been set in print so smoothly in time, and the author's effort devoted to the preparation for the whole work in the course of more than 20 years would have come to nothing. The author should like to give thanks to Mr. Zhang Zhenguo, reporter of the People's Daily, and Mr. Zhao Ruguang, correspondent of the Anhui Daily, whose coverage of the author's story has been a great encouragement to him as are a good many letters from acquaintances all over the country, to whom the author is much indebted.

Further suggestions concerning revisions of the dictionary should be greatly valued in case any mistakes have to be put right and improvements have to be made.

Hefei, Anhui  
January 31, 1987

Zhong Songchuan

## GUIDE TO THE DICTIONARY

1. Entries in this Dictionary are arranged alphabetically according to the English letter sequence while those in German, or Russian, will be found in the indexes where, likewise, they are put alphabetically in accordance with their respective literal order. The Chinese index, on the other hand, is presented by way of a. the number, and b. the form of the strokes, and, in order to simplify the process of looking up any term in the Dictionary, the characters “飞”, “习” and “马” are counted as three strokes and “引” and “双” as four strokes, with regard to the Japanese index there are three patterns to follow; a. according to the Japanese syllabary if the initial part of the word is a kana; b. according to the English alphabet if the initial part of a term is in the form of a foreign word; c. according to the “stroke” method if the first part of a term is in kanji, i.e. a japanized Chinese character.
2. Abbreviations and symbols used in the Dictionary,
  - Ⓐ = AGMA (American Gear Manufacturer's Association);
  - Ⓑ = BS (British Standards Institution);
  - Ⓘ = ISO (International Organization for Standardization);
  - Ⓓ = DIN (Deutsche Industrie-Normen);
  - Ⓢ = VSM (Verein Schweizerischer Maschinenindustrieller);

- 
- ⑦ = JIS (Japanese Industrial Standard);  
Ⓖ = ГОСТ (Государственный Общесоюзный Стандарт);  
© = CIRP (Cellège International des Recherches de la  
Production); and  
Ⓔ = Chinese Standards (GB 3374-82 "Basic Terminology  
of Gears" ).

f = feminine;

m = masculine; and

n = neuter

(indicating the genders of German words).

■ — German entries;

□ — Russian entries;

○ — Japanese entries; and

△ — Chinese entries.

## 说 明

(一)本《辞典》是按英文字母顺序编号的。查阅德、俄、日、汉“词条”时，迳查各自索引即可。其中，德、俄索引，按其字母顺序排列；中文索引按“画数笔形查字法”，即画数确定后，再按“点”、“横”、“直”、“撇”分开排列，为简化起见，“飞”、“习”、“马”均列入三画“横”栏，“引”、“双”均列入四画“横”栏，……。日文索引，分三种情况检索：

- (1)词头部分迳用假名者，按五十音图顺序排列；
- (2)词头部分迳用外来语者，按英文字母顺序排列；
- (3)词头部分迳用日文汉字者，按“·”、“一”、“丨”、“J”画数多少排列，即按“画数笔形查字法”检索。

(二)“词条”中所用的略语与符号，含义如下：

- ④——AGMA (American Gear Manufacturer's Association) (美国齿轮制造者协会)之略，
- ⑤——BS (British Standards Institution) (英国工业标准)之略，
- ①——ISO (International Organization for Standardization) (国际标准化组织)之略，
- ⑩——DIN (Deutsche Industrie-Normen) (德国工业标准)之略，
- ⑤——VSM (Verein Schweizerischer Maschinenindustrieller) (瑞士机械工业协会)之略，
- ④——JIS (Japanese Industrial Standard) (日本工业标



准)之略,

①——ГОСТ (Государственный Общесоюзный Стандарт) (苏联国家标准)之略,

②——C. I. R. P. (Collège International des Rechenes de la Production) (国际生产工程研究协会)之略,

③——中华人民共和国国家标准 (GB3374—82 “齿轮基本术语”)之略,

f—(feminine)—(德语名词)阴性,

m—(masculine)—(德语名词)阳性,

n—(neuter)—(德语名词)中性,

“词条”中的符号:

■——德文词条,

□——俄文词条,

○——日文词条,

△——中文词条,