



面向“十二五”高等教育课程改革项目研究成果

模具技术专业英语

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English for Die Technology

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内 容 简 介

本书旨在帮助读者通过较短时间的学习较大幅度地提高专业英语阅读和英译中的能力,具有题材广泛,内容丰富,专业性、实用性强等特点。

本书立足于现代制造业,针对模具技术主题,用原汁原味的英语,全面、系统地描述了模具专业相关的各类信息。全书共10个单元,从模具和铸模简介谈起,介绍了模具基本结构形式、注塑模与加工技术、挤出成形、基本拉伸成形、模具设计、弯曲的基本知识、电火花加工和模具的分类等文章,最后以求职就业的内容结束。每个单元由对话、课文、阅读材料、练习和科技英语翻译技巧五个部分组成。书后附录部分,收录了模具专业术语、机械专业缩略语、世界著名企业中英文名称、按字母顺序排列的词汇表、练习答案和课文参考译文。

本书可作为高等院校模具专业的英语教材,也可以作为工程技术人员的自学参考书。

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前 言

《模具技术专业英语》是面向“十二五”高等教育课程改革项目研究成果之一。本教材从培养应用型人才出发,结合企业生产实际,力求向学生提供未来工作岗位必须掌握的模具专业知识,并着力培养学生在实际工作岗位上运用专业英语的能力。

模具设计与制造是一门交叉学科,内涵丰富,涉及面很广,包括金属材料成形、高分子材料成形、模具材料、模具制造工艺、先进制造方法等内容。在整个编写过程中,为使本教材体现先进性、科学性和实用性,本书从国外最新出版的教科书、专著、外文期刊中筛选资料,把国外较新的研究成果编写进教材中;并根据该课程教学大纲要求,从培养学生阅读能力方面着手,充分考虑了文章的阅读性与知识性,所选资料既考虑了当今模具行业的覆盖面,又反映了其发展趋势。在侧重阅读理解、掌握模具专业常用词汇基础上,突出模具专业特点。课文简单易读,适合不同层次的读者。

全书共设10个单元,本教材根据模具专业的特点,在编写过程中充分考虑到英语与专业、普通英语与专业英语的衔接,融会贯通。编选了模具和铸模简介、模具基本结构形式、注塑模与加工技术、挤出成形、基本拉伸成形、模具设计、弯曲的基本知识、电火花加工和模具的分类等文章,图文并茂,帮助读者进一步掌握模具专业术语和英语词汇,为提高阅读专业英语的能力,掌握英语翻译方法和技巧打下基础。在选材上注重语句的原汁原味,不仅表达简练、顺畅、纯正,而且有一定的趣味性,易于阅读和理解。同时注意点面结合,注重各专业、学科间知识的相关性,注意到高等应用型教育的实用特点。每个单元包括专业英语会话,阅读,练习,补充阅读,翻译技巧等模块。方便教师讲练结合,且能根据需要对教材内容进行取舍,从而更好地进行教学活动。

本书由马佐贤任主编,唐丽和殷莹任副主编,由朱芬芳主审。其中马佐贤负责全书的结构及第1单元、第2单元、第5单元和第10单元的编写;唐丽负责第6单元、第8单元和第9单元的编写;殷莹负责第3单元、第4单元和第7单元的编写。

本书在编写过程中，得到了学院领导和各位老师的大力支持，在此表示衷心的感谢！

由于时间仓促，水平有限，错误之处在所难免，敬请批评指正！

编 者

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Unit 1

Introduction to Dies and Molds



本单元知识点

1. 了解模具的定义
2. 了解模具的发展史
3. 掌握模具的原理

Dialogue

Millie: Good afternoon, Sandy. Where are you going?

Sandy: I am going to the library to borrow some books.

Millie: What kinds of books do you want to borrow?

Sandy: I would like to borrow some books of piercing die.

Millie: Why?

Sandy: I have been learning the course of mold design, but I have some trouble in learning the piercing die design. So I need some reference books.

Millie: What are the problems? May I help you?

Sandy: Yes, What is a complete press tool?

Millie: A complete press tool is a tool for cutting two holes in work material at one stroke of the press. It consists of a pair of mating members for producing stamped parts, including all supporting and actuating elements of the tool.

Sandy: Where is the correct place of the guide pins in a piercing die?

Millie: The guide pins, or posts, are mounted in the lower shoe. The upper shoe contains bushings which slide on the guide pins.

Sandy: Oh, I see. Thank you!

Millie: You're welcome.

Text Introduction to Dies and Molds

What is a die or a mold? A die or a mold is a hollowed-out block that is filled with a liquid like plastic, glass, metal, or ceramic raw materials. The liquid hardens or sets inside the mold, adopting its shape. A mold is the opposite of a cast (see casting).

One half of a bronze mold for casting a socketed spear head, found at East Pennard, England. Dated to the period 1, 400 - 1, 000 BC, it is without parallels (Fig. 1 - 1) .



Fig. 1 - 1 a Socketed Spear Head

Molding is the process of manufacturing by shaping pliable raw material using a rigid frame or model called a pattern. The manufacturer who makes the molds is called moldmaker. A release agent is typically used to make removal of the hardened/set substance from the mold easier.

Moulds separate into at least two halves (called the core and the cavity) to permit the part to be extracted; in general the shape of a part must be such that it will not be locked into the mould. For example, sides of objects typically cannot be parallel with the direction of draw (the direction in which the core and cavity separate from each other). They are angled slightly; examination of most household objects made from plastic will show this aspect of design, known as draft. Parts that are "bucket-like" tend to shrink onto the core while cooling and, after the cavity is pulled away, are typically ejected using pins. Parts can be easily welded together after molding to allow for a hollow part (like a water jug or doll's head) that couldn't physically be designed as one mould.

More complex parts are formed using more complex moulds, which may require moveable sections, called slides, which are inserted into the mould to form particular features that cannot be formed using only a core and a cavity, but are then withdrawn to allow the part to be released. Some moulds even allow previously molded parts to be re-inserted to allow a new plastic layer to form around the first part.

Traditionally, molds have been very expensive to manufacture; therefore, they were usually only used in mass production where thousands of parts are being produced (Fig. 1 - 2) .

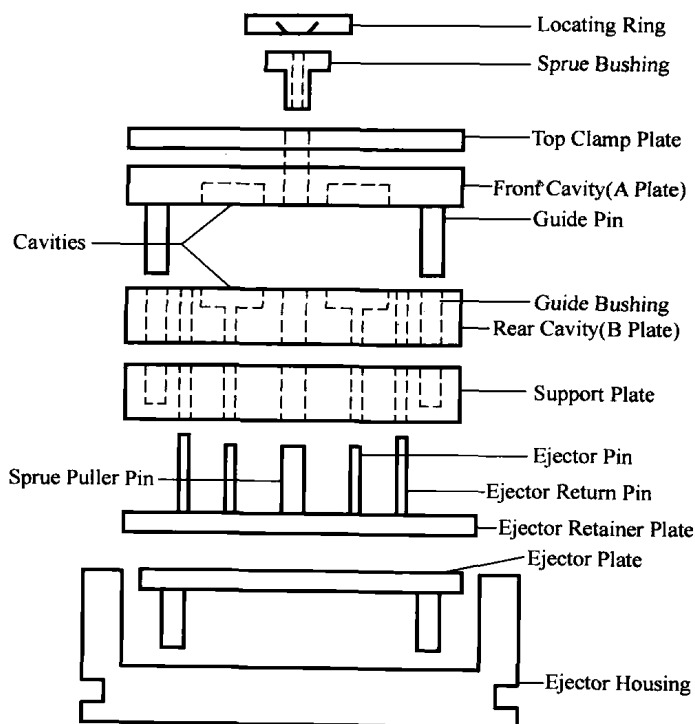


Fig. 1 - 2 Typical mold base showing the various components

New Words and Expressions

die/dai/n. (用于金属等材料加工的) 模具

mold/məʊld/n. 模子; 铸 *vt.* 浇铸; 用模子做

block/blɒk/n. 1. 街区 2. 模; 模型; 帽模, 帽楦

ceramic/si'remɪk/adj. 陶瓷的; 陶瓷的

harden/'hɑ: dn/vt. & vi. (使) 变硬; (使) 坚固

cast/kɑ: st/vt. & vi. 1. 垂钓, 放钓 2. 浇铸

socket/'sɒkɪt/n. 孔, 穴; 插孔 *vt.* 把……装入托座 (或插座)

spear/spiə/n. 矛, 枪, 鱼叉

process/'prəʊses/n. 工序; 工艺流程 *vt.* 加工; 处理

manufacture/'mænju 'fæktʃə/vt. (大规模) 制造; 生

pliable/'plaɪəbəl/adj. 易弯的, 柔韧的, 易受

rigid/'rɪdʒɪd/adj. 刚硬的; 僵硬的

core/kɔ: /n. 型芯; 模芯; 核心

cavity/'kævɪti/n. 型腔; 模腔

ejected/i'dʒektɪd/adj. 萃取的

parallel/'pærəlel/adj. 平行的; 类似的; 相对应的
household/'haushəuld/n. 一家人; 户
draft/dra:ft/n. 草稿; 草案
eject/i'dʒekt/vt. & vi. 弹出; 喷出
pin/pin/n. 销; 钉; 插头
weld/weld/vt. & vi. 焊接; 熔接; 锻接
slide/slaid/vt. & vi. 滑动; 滑行
insert/in'sɜ:t/vt. 插入; 嵌入
withdraw/wið'drɔ:/vt. & vi. 取[收]回; (使)撤退[出]
layer/'leiə/n. 层; 层次

raw material 原料
release agent 脱模剂
hollowed-out 中空的
dated to 追溯到
be parallel with 与……平行
mass production 批量生产

Exercises

I. Mark the following statements with T (True) or F (False) according to the passage.

1. Dated to the period 1, 400—1, 000 BC, one half of bronze found at East Pennard, England is with parallels. ()
2. Moulds divide into not less than three parts to permit the part to be extracted. ()
3. Steel moulds cost more, but they have longer lifespan. ()

II. Translate the following phrases into Chinese or English.

1. 原材料
2. 批量生产
3. 追溯到
4. 脱模剂
5. dated to
6. hollowed-out
7. be parallel with

III. Translate the following sentences into Chinese.

1. A die or a mold is a hollowed-out block that is filled with a liquid like plastic, glass, metal, or ceramic raw materials.
2. The manufacturer who makes the molds is called moldmaker.
3. Some moulds even allow previously molded parts to be re-inserted to allow a new plastic layer to form around the first part.

Supplementary Reading

Glance at the Structure of the Die

The following is the Structure Diagram of the Die and Mold (Fig. 1 - 3)
Sample

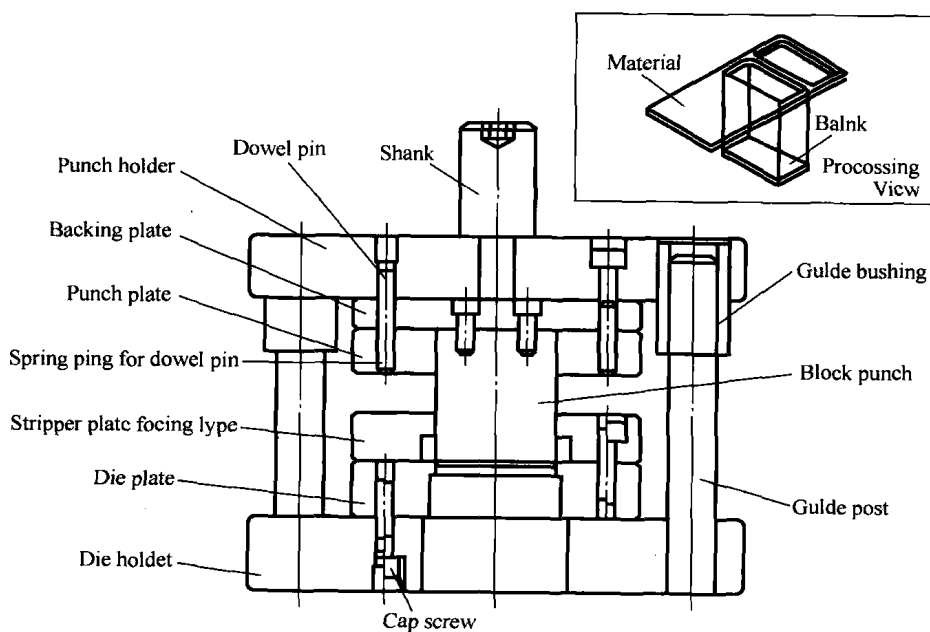


Fig. 1 - 3 the structure Diagram of the Die and Mold

1. Shank: A part used to connect the die components to the machine.
2. Dowel pin: A type of fastener that is inserted into holes in two adjacent work-pieces to hold them together.
3. Punch holder: Another term used for the upper die shoe.
4. Backing plate: A plate used to support the hardware for the die used in press.
5. Punch plate: A metal plate onto which the various punches are mounted.
6. Spring plug for dowel pin: A line of cast type in a single strip of metal

designed to compress and become smaller when presented with compressive load that fastens the dowel pin.

7. Stripper plate fixing type: The metal plate that contacts the sheet to strip it from the punch.

8. Die plate: A metal plate onto which the various die set components are mounted.

9. Die holder: Another term used for the lower die shoe.

10. Cap screw: A screw that appears in the form of hexagon.

11. Guide post: A hardened rod positioned in the lower die shoe that fits into a bushing in the upper die shoe to guide the punch during operation.

12. Block punch: A punch used to cut a falling part of metal sheet out of the raw material.

13. Guide bushing: A hardened steel tube that slides over the guide post and directs the upper die shoe during operation.

14. Material: The substance or substances out of which a thing is or can be made.

15. Blank: The original material after which the product of the die can be made in various operating ways.

For Reference:

Explanations of the Die Terms

No.	Name	Explanations
1	Shank	模柄
2	Dowel pin	定位销
3	Puncher holder	上模座
4	Backing plate	垫板
5	Punch plate	凸模固定板
6	Spring plug for dowel pin	松脱防止弹簧塞
7	Stripper plate fixing type	固定式卸料板
8	Die plate	凹模板
9	Die holder	下模座
10	Cap screw	内六角螺栓
11	Guide post	导柱
12	Block punch	方形凸模
13	Guide bushing	导套
14	Material	材料
15	Blank	坯料

New Words and Expressions

- diagram/'daɪəgræm/*n.* 图解; 简图; 图表
 sample/'sɑ: mpl/*n.* 样品; 标本
 shank/'ʃæŋk/*n.* 长柄; 杆
 component/kəm'pəʊnənt/*n.* 组成部分; 部件; 元件
 adjacent/ə'dʒeɪsənt/*adj.* 与……毗连的; 邻近的
 punch/pʌntʃ/*n.* 压印器; 凸模冲头
 shoe/'ʃu: /*n.* 煞车; 金属箍
 screw/skru: /*n.* 螺丝钉
 tube/tju: b/*n.* 管; 软管
 substance/'sʌbstəns/*n.* 物质; 物品; 物体
 work-piece *n.* 工件

Exercises

I. Translate the following phrases into Chinese or English.

1. Shank
2. Dowel pin
3. Punch holder
4. 下模座
5. 凹模板
6. 垫板

II. Translate the following sentences into Chinese.

1. Punch holder: Another term used for the upper die shoe.
2. Material: The substance or substances out of which a thing is or can be made.
3. Cap screw: A screw that appears in the form of hexagon.

Translating Skill (1): 科技英语翻译概述

I. 科技英语概述

科技英语 (English for Science and Technology, EST) 诞生于 20 世纪 50 年代, 20 世纪 70 年代以来。科技英语在国际上引起了广泛的注意和研究, 目前已

经发展成一种重要的英语语体,在词汇、语法、修辞等方面具有自己的特色。从事科技英语翻译时较少运用修辞手段,而是注重事实与逻辑,要求技术概念明确清楚,逻辑关系清晰突出,内容准确无误,资料准确精密,文字见解明了,符合技术术语表达习惯,体现科技英语的科学、准确、严谨的特征。

提高翻译水平的有效途径是进行大量的翻译实践,应该在实践中学习翻译理论和常用技巧,遵循“实践——认识——再实践——再认识”的规律,不断练习,不断总结,才能有效地提高翻译的能力。

II. 翻译的标准

翻译的标准是衡量译文质量的尺度,又是指导翻译实践的准则。可以把翻译标准概括为“忠实、通顺”四个字。所谓忠实,指译文必须忠实、正确地传达原文的内容,对原文的意思既不歪曲,也不能任意增减。所谓“通顺”,指的是译文的语言必须通顺易懂,符合汉语规范。要按照汉语的语法和习惯来选词造句,没有文理不通,结构混乱或逻辑不清的现象。

试比较下列各句的不同译文:

In certain cases friction is an absolute necessity.

(1) 在一定场合下,摩擦是一种绝对的必需品。

(2) 在某些情况下,摩擦是绝对必需品。

The tendency of evolving organisms to follow a trend is widespread.

(1) 进化着的有机体遵循着一种趋向,这种趋向是普遍的。

(2) 不断进化的各种生物,基本上都有共同的进化趋向。

另一方面,也要防止片面理解“通顺”的要求,过分强调译文的流畅而不受原文意思的束缚,添枝加叶,造成翻译上的自由主义。

例如: He wanted to learn, to know, to teach.

(1) 他渴望博学广闻,喜欢追根穷源,并且好为人师。

(2) 他想学习,增长知识,也愿意把知识教给别人。

III. 理解与表达

翻译的过程主要包括理解和表达两个阶段。在通常情况下,理解是第一位的,表达是第二位的。正确地理解原作是翻译的基础,没有正确的理解就不可能有正确的翻译。当然,虽然理解了原文,但不能用确切的汉语表达出来,致使词不达意,文理不通,晦涩难懂,也无法达到忠实表达原文思想内容的目的。

1. 理解阶段

翻译的关键在于理解。就科技英语的翻译而论,关键在于透彻地理解和把握住原文的内容和实质。为了透彻理解原文,应该注意以下几点:

(1) 结合上下文，推敲词义。理解必须通过原文的上下文来进行。英语里一词一义的情况很少的，只有结合上下文才能理解单词在某一特定的语言环境中的确切意义，否则翻译时往往容易出错。例如：

Various speeds may be obtained by the use of large and small pulleys.

[误] 利用大小滑轮可以获得不同的转速。

[正] 利用大小皮带轮可以获得不同的转速。

Pulley 一般做“滑轮”“辘轳”解，但影响机器转速的应为“皮带轮”而不是“滑轮”。

(2) 辨明语法，弄清关系。科技英语的特点之一是句子长，语法结构复杂，因此，根据原文的句子结构，弄清每句话里的语法关系对正确理解具有重要意义。例如：

There are no problems in the production of such domestic robot to which we do not have already the glimmering of a solution.

[误] 要生产这样的家用机器人已经毫无问题，我们对于一系列技术问题的解决现在已经不是只有一线希望了。

[正] 要生产这样的家用机器人存在着各种问题，然而这些问题的解决均已略显端倪。

这个句子误译的原因，可能主要是没有看清 no problems 与定语从句中 to which we do not have... 构成双重否定，因而造成理解上的错误。to have a glimmering of solution 意为“模模糊糊的知道解决（这些问题的）办法”，即要解决这些问题现已略有眉目。

(3) 理解原文所涉及的事物。有些句子的翻译，不能单靠语法关系来理解，还必须从逻辑意义或专业内容上来判断，应该特别注意某些特有的事物，典故和专门术语所表达的概念。例如：

Do you know that the bee navigates by polarized light and the fly controls its flight by its back wings?

[误] 你知道蜜蜂借助极光飞行，而苍蝇用后翅控制飞行吗？

[正] 你知道蜜蜂借助偏振光飞行，而苍蝇用后翅控制飞行吗？

例句中的 polarized light 是偏（振）光，指不同方向显示不同特点的光线，误译为极光是由于不懂专业望文生义造成的。

2. 表达阶段

表达阶段的任务是把已经理解的原作的内容用汉语恰如其分地重述出来。表达涉及的问题很多，这里只介绍两种最基本的方法：直译和意译。

(1) 直译。直译是指译文采取原作的表现法，既忠于原文内容，又考虑原文形式。但直译不是死译或硬译。下面是一个直译的例子：

What sort of force does the sun exert on the planets which causes the plants

to move according to the laws which Kepler has discovered?

太阳以什么力于行星，使之遵循开普勒发现的定律运行呢？

(2) 意译。意译 (free translation) 是指通过对原文深层意蕴的理解，将原文的表层结构转化为译文的表层结构，并且打破原文的语言形式，用译文的习惯表达形式把原文的意蕴再现出来。如：

In fact, it may be said that anything that is not an animal or vegetable is a mineral.

直译：事实上，可以说不是动物或植物的任何东西便是矿物。

意译：事实上，可以说任何东西只要既不是动物又不是植物便是矿物。

IV. 校对和修改

理解和表达都不是一次完成的，而是逐步深入，最后才能达到完全理解和准确表达原作反映的客观现实的目的。因此，表达阶段还包括校对和修改译文这一环节。校改译文是使译文符合翻译标准所必不可少的一步。校改译文时，不仅要作进一步的推敲，使之符合汉语规范，而且要特别注意译文的准确性，科技译文尤其重要。因此，译文只有经过再三校改，直到符合原文时，才能最后定稿。

阿迪达斯

Impossible is nothing.

没有什么不可能。