



普通高等教育“十二五”规划教材·卓越汽车工程师系列

实用

刘璇 于秀敏 主编

汽车英语 (第2版)



北京理工大学出版社

BEIJING INSTITUTE OF TECHNOLOGY PRESS

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实用汽车英语

(第2版)

PRACTICAL AUTOMOBILE ENGLISH

(2nd Edition)

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内 容 简 介

本书共 13 个单元, 每单元由以下 3 个部分构成:

Section A: 介绍汽车各主要系统的构造及工作原理。附有课后练习, 旨在帮助学生巩固所学内容, 主要包括词汇、短语、专业术语练习, 以及英汉互译练习。

Section B: 涉及汽车主要系统或部件的维修保养、故障检测。附有课后练习, 旨在帮助学生掌握一些常用汽车缩略语及熟悉一些外国汽车品牌。

Section C: 单课: 口语练习——汽车职场对话。双课: 阅读练习——汽车文化。

本书既可作为高等院校汽车、交通类专业的英语教材, 也可用做高等教育自学考试、成人教育、职业培训等汽车相关专业的本、专科生的英语教材, 还可供从业人员自学使用。

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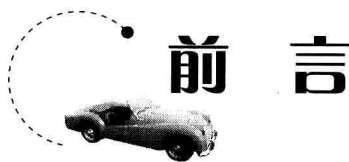
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△ 实用汽车英语（第2版）

随着我国汽车业的迅猛发展及大量的汽车新技术的引进，对汽车人才英语水平的要求越来越高，因此全面提高汽车专业学生及汽车行业人员的实用英语水平已成为当务之急。本书是在新形势下注重应用型学科的实用性而编写的。在课文内容的编写上注重从传统知识向新技术的过渡，以使学生对汽车各主要系统有全面了解。

本书共 13 个单元，每单元由以下 3 个部分构成：

Section A：介绍汽车各主要系统的构造及工作原理。本部分附有课后练习，旨在帮助学生巩固所学内容，主要包括词汇、短语、专业术语练习，以及英汉互译练习。

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Section C：单课：口语练习——汽车职场对话。涉及汽车买卖、询价、付款方式、汽车美容、汽车维修、汽车保险及电话回访等七大职场话题。口语话题的引入，旨在打破专业英语传统教学中的英汉互译法，提高学生的口语表达能力，以满足未来职业岗位的需求。双课：阅读练习——汽车文化。涉及世界汽车发展史上著名人物及著名汽车厂家的发展历程，使学生在提高英语阅读能力的同时，受到汽车文化的熏陶。

使用者可以根据培养目标、学习兴趣等对本书内容进行取舍。例如：汽车营销专业可选学 Section A 和 Section C，而汽车售后技术服务专业可选学 Section A 和 Section B。

书末附录提供课后练习答案、常用汽车缩略语及外国汽车车名，以方便使用者查阅。

本书既可作为高等院校汽车、交通类专业的英语教材，也可用做高等教育自学考试、成人教育、职业培训等汽车相关专业的本、专科生的英语教材，还可供从业人员自学使用。

本书由吉林大学刘璇、于秀敏主编。吉林大学郭建华、樊华、刘艳莉以及西安工程大学程鸣参与了编写工作。

在编写本书的过程中，得到了吉林大学汽车学院的大力支持，编者在此对其表示衷心的感谢！

在编写本书的过程中，参考了大量的国内外书籍和资料，以及一些相关网站，有些内容引自其中，在此对原作者表示诚挚的谢意！

由于编者水平有限，书中难免存在一些缺点和错误，恳请广大师生、读者及各位专家不吝指教，以使教材不断完善。

编 者

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Section A Basic Structure of an Automobile

Automobiles are basically the same in structure although they are quite different in style and design. In other words, any automobile is composed of four sections, such as the engine, chassis, body and electrical system(See Fig. 1 -1).

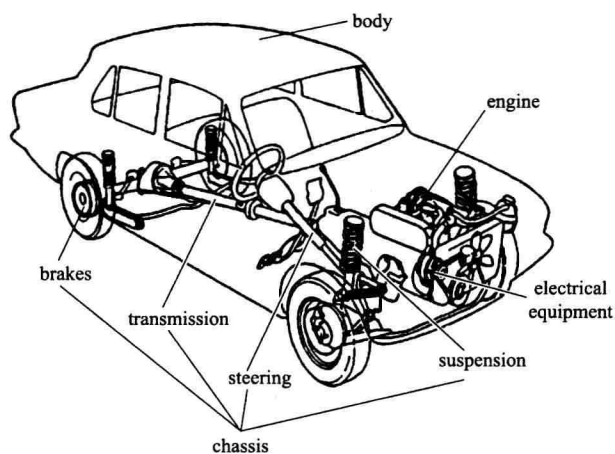


Fig. 1 -1 Layout of an automobile

Engines

The engine is the power source of an automobile. The most common type is the internal combustion engine, which burns fuel within the cylinders and converts the expanding force of the combustion or “explosion” into rotary force used to propel the vehicle.

All engines have fuel, exhaust, cooling, and lubrication systems. Gasoline engines also have ignition systems.

The fuel system plays a vital part in the power-producing process since it supplies the gasoline to the cylinders of the engine.

The exhaust system is used to conduct the burned gases to the rear of a vehicle and into the air, quiet the exhaust noise, and, in most cases, reduce the pollutants in the exhaust.

The cooling system removes excessive heat from the engine components.

The lubrication system is important in keeping the engine running smoothly. Motor oil is the lubricant used in the system.

The ignition system supplies the electric spark needed to ignite the air-fuel mixture in the cylinders, which initiates the power stroke.

Chassis

The chassis is a framework used to assemble auto components on it. The chassis includes the power train, suspension, steering, and brake system.

The power train system consists of mechanisms and units which transmit torque from the engine to the drive wheels and change torque and rpm in magnitude and direction. Among these mechanisms and units are the transmission (gearbox), clutch, propeller shaft, rear axle, differential and the wheels.

The primary purpose of the suspension system is to support the weight of the vehicle. The basic job of the suspension system is to absorb the shocks caused by irregular road surfaces, which would otherwise be transmitted to the vehicle and its occupants, thus helping to keep the vehicle on a controlled and level course, regardless of road conditions.

The steering system is used to control the driving direction of the vehicle as it moves. The key components that make up the steering system are the steering wheel, steering shaft, worm, gear sector, pitman arm, drag link, steering knuckle arm, king pin, steering arm, tie rod, front axle and steering knuckle.

The brake system is a balanced set of mechanical and hydraulic devices used to retard the motion of the vehicle by means of friction. Structurally, an automotive brake system contains several major parts like the brake drum, brake shoe, brake lining, etc. Functionally, an automotive brake system can be divided into service brake mechanism and parking brake mechanism.

Bodies

The automobile body provides a protective covering for the engine, passenger and cargo. It is designed to keep the occupants safe and comfortable. The body is generally divided into four sections — the front, the upper or top, the rear and the underbody. These sections can further fall into a lot of assemblies and parts, such as the hood, the fender, the roof panel, the door, the instrument panel, the bumper and the luggage compartment.

Electrical Systems

The electrical system supplies lighting and driving power for the automobile. The electrical system of a modern automobile is composed of four main circuits and a number of branch circuits. The four main circuits are the generating circuit, the starting circuit, the ignition circuit and the lighting circuit. All the main circuits are connected together and linked to the battery which is necessary in electric services on any vehicle.

New Words

structure	['strʌktʃə]	<i>n.</i>	构造
chassis	['ʃæsi]	<i>n.</i>	底盘
cylinder	['silində]	<i>n.</i>	汽缸
convert	[kən'vɜ:t]	<i>v.</i>	转变
propel	[prə'pel]	<i>v.</i>	推进
exhaust	[ig'zɔ:st]	<i>n.</i>	排气, 废气
		<i>v.</i>	排气, 耗尽
lubrication	[,lju:bri'keɪʃən]	<i>n.</i>	润滑
ignition	[ig'niʃən]	<i>n.</i>	点燃, 点火
component	[kəm'pəunənt]	<i>n.</i>	成分, 部件, 零件
ignite	[ig'nait]	<i>v.</i>	点燃, 点火
initiate	[i'niʃieɪt]	<i>v.</i>	发动, 开始
stroke	[strəʊk]	<i>n.</i>	冲程, 行程
assemble	[ə'sembl]	<i>v.</i>	装配, 安装
		<i>n.</i>	组件
suspension	[səs'penʃən]	<i>n.</i>	悬挂
steer	[stiə]	<i>v.</i>	驾驶
		<i>n.</i>	(车辆) 转向机构
brake	[breɪk]	<i>n.</i>	制动器, 刹车
		<i>v.</i>	制动
mechanism	['mekənɪzəm]	<i>n.</i>	机械机构
transmit	[træn'zɪt]	<i>v.</i>	传动, 传送
torque	[tɔ:k]	<i>n.</i>	转矩, 扭矩
magnitude	['mægnɪtju:d]	<i>n.</i>	大小, 数量; (数) 量值
transmission	[træn'zɪʃən]	<i>n.</i>	变速器, 传动装置
clutch	[klʌtʃ]	<i>n.</i>	离合器
differential	[,dɪfə'renʃəl]	<i>n.</i>	差速器
worm	[wɜ:m]	<i>n.</i>	蜗杆
balance	['bæləns]	<i>v.</i>	使平衡
hydraulic	[haɪ'drɔ:lik]	<i>a.</i>	液压的, 水力的
retard	[ri'tɑ:d]	<i>v.</i>	使减速, 阻止, 妨碍
friction	['frɪkʃən]	<i>n.</i>	摩擦, 摩擦力
hood	[hud]	<i>n.</i>	引擎罩, 车篷
fender	['fendə]	<i>n.</i>	挡泥板, 防护物
bumper	['bʌmpə]	<i>n.</i>	汽车保险杠, 缓冲器
circuit	['sɜ:kit]	<i>n.</i>	电路, 线路, 回路
battery	['bætəri]	<i>n.</i>	电池

Phrases and Expressions

electrical system	电器系统
internal combustion engine	内燃发动机
fuel system	燃料系统
exhaust system	排气系统
cooling system	冷却系统
lubrication system	润滑系统
ignition system	点火系统
air-fuel mixture	可燃混合气
power stroke	做功冲程
power train	传动系统
suspension system	悬架系统
steering system	转向系统
brake system	制动系统
propeller shaft	传动轴
rear axle	后桥,后轴
steering wheel	方向盘
steering shaft	转向轴
gear sector	扇形齿轮
pitman arm	转向摇臂
drag link	直拉杆
steering knuckle arm	转向节臂
king pin	主销
steering arm	转向臂
tie rod	转向横拉杆
front axle	前轴
steering knuckle	转向节
by means of	用,依靠
brake drum	制动鼓
brake shoe	制动蹄片
brake lining	制动器摩擦衬片,制动衬片
service brake	行车制动器,主制动器
parking brake	驻车制动器
roof panel	(车身)顶板,顶盖
instrument panel	仪表(安装)板
luggage compartment	行李舱,行李间

Notes to the Text

1. In other words, any automobile is composed of four sections, such as the engine, chassis, body and electrical system.
换言之,任何汽车都是由4部分组成的,如发动机、底盘、车身以及电器系统。
2. All engines have fuel, exhaust, cooling, and lubrication systems. Gasoline engines also have ignition systems.
发动机都有燃料系统、排气系统、冷却系统和润滑系统。汽油发动机还有点火系统。
3. The chassis includes the power train, suspension, steering and brake system.
底盘包括传动系统、悬架系统、转向系统及制动系统。
4. The basic job of the suspension system is to absorb the shocks caused by irregular road surfaces, which would otherwise be transmitted to the vehicle and its occupants, thus helping to keep the vehicle on a controlled and level course, regardless of road conditions.
悬架系统的基本作用是吸收路面不平引起的冲击和振动,使其不会传递给车辆和乘客。这样,不管路况如何,都能使车辆具有可控制的、水平的行驶路线。

Exercises on the Text

I. Answer the following questions according to the text.

1. What are the four basic sections of an automobile?
2. What's the function of the exhaust system?
3. What's the function of the cooling system?
4. What's the function of the power train?
5. What's the function of the electrical system?

II. Fill in the table below (Tab. 1 - 1).

Tab. 1 - 1

English	Chinese
	差速器
propeller shaft	
	方向盘
rear axle	
	离合器
cylinder	
	转矩
internal combustion engine	
	传动系统
power stroke	

III. Fill in the blanks with the words or phrases given below, and change the form where necessary.

conduct	retard	provide	supply
assemble	remove	control	be composed of

1. The fuel system _____ the gasoline to the cylinders of the engine.
2. The cooling system _____ excessive heat from the engine.
3. The exhaust system is used to _____ the burned gases to the rear of a vehicle and into the air.
4. The chassis is a framework used to _____ auto components on it.
5. The brake system is used to _____ the motion of the vehicle by means of friction.
6. The steering system is used to _____ the driving direction of the vehicle as it moves.
7. The automobile body _____ a protective covering for the engine, passenger and cargo.
8. The electrical system of a modern automobile _____ four main circuits and a number of branch circuits.

IV. Reading comprehension: Read the following passage carefully and fill in the blanks with the words given below.

framework	design	case	chassis	requirements
functions	engine	body	forces	engineers

An automobile is composed of four sections such as the engine, 1, body and electrical system. The 2 is the power source of an automobile. The chassis is a 3 on which the body is seated. In the 4 of a collision, the body 5 to provide lifesaving protection. The 6 of an automobile body is therefore governed by various 7 from safety researchers and structural 8. Passenger comfort had always been one of the propelling 9 in the development of the automobile 10. It is expected that future cars will have less interior noise, better vibration isolation and better air-conditioning.

V. Translate the following paragraph into Chinese.

The primary purpose of the suspension system is to support the weight of the vehicle. The basic job of the suspension system is to absorb the shocks caused by irregular road surfaces that would otherwise be transmitted to the vehicle and its occupants, thus helping to keep the vehicle on a controlled and level course, regardless of road conditions.

VI. Translate the following sentences into English.

1. 虽然汽车在设计方面有所不同,但在构造上是基本相同的。
2. 发动机的类型有多种,但最常见的是内燃机。

3. 转向系统被用来控制车辆的驾驶方向。
4. 底盘包括传动系统、悬架系统、转向系统以及制动系统。
5. 电器系统向汽车提供照明和驱动的电力。

Section B History of Automobile Industry

It is already over one hundred years since the first automobile was invented in the world. The origin of the automobile cannot be attributed to one person. On January 29, 1886, Karl Benz from Germany applied for a patent for his tricycle. This is officially considered the birth of the first car invented. From then on, the transportation on land shifted from the age of coaches to the age of automobiles.

Soon after the invention of the first automobile, auto manufacturers from other countries immediately made great investments in auto design and production. As a result, the world auto industry has been developed by leaps and bounds.

Germany was the birthplace of the automobiles. Karl Benz, who had experience with railway locomotives, and Gottlieb Daimler, who had been a mechanic with the firm of Otto and Langen, both produced workable gasoline vehicles in 1886 and continued to do so. Daimler's great contribution was to recognize that an internal combustion engine for a motor vehicle had to operate at high speed, at least 1,000 rpm, and he set out to design and build such an engine. Benz introduced spark ignition.

In spite of their priority, neither Daimler nor Benz made cars in any significant numbers for many years. Indeed their companies did not get into large scale production until they were merged to form Daimler-Benz in 1926. Today this corporation enjoys an enviable reputation as the maker of Mercedes-Benz cars. Its undisputed German competitor is BMW (Bavarian Motor Works).

During the first half of the twentieth century, the United States established the leadership position in automobile production because Henry Ford introduced the assembly line of mass production in the automobile industry. The adoption of mass production techniques can be seen as a revolution in car making history.

The massive market of the automobiles in America was dominated by the Big Three motor manufacturers. Up until the 1920s, Ford had been the market leader and owned the prestigious Lincoln marque. By the 1930s, the Big Three were headed by American General Motors with its batch of makes which included the Buick, Chevrolet, Oldsmobile and Cadillac names. Chrysler, the last of the Big Three to be established, had Plymouth as its high volume, low cost arm.

The early 1950s witnessed some development of the motor industry in Japan. Before the war, Japan's carmakers consisted, in essence, of Toyota and Nissan, which produced the Datsun. From 1960, the Nissan name appeared on some models sold on the home market. Those built for export were called Datsun but this practice only lasted until 1983. Since then, the company has only

manufactured Nissan cars. With a great export drive first targeted at America and then Europe, Japan has emerged as the international community's major manufacturing force. Not only are Japan's products seen on almost every road on the globe, but its car makers have also taught the rest of the motoring world how to build its automobiles more cost-effectively.

China was totally an agricultural country with almost no industries before liberation. It was not until the 1900s that the first automobiles were introduced to China. In 1913, the first highway in China was built between Changsha and Xiangtan and the year 1918 witnessed the official issue of the first driving licenses in China. Then, between the 1930s and the 1940s, the auto transportation was somewhat developed but the vehicles driven then were all made in other developed countries. The auto industry in China did not start until the 1950s. In 1956, the No. 1 Auto Plant was established in Changchun, and turned out the first batch of *liberation* automobiles for our country. After that, several other auto plants were set up one after another in Nanjing, Beijing, Jinan and Sichuan. In the early 1980s, the No. 2 Auto Plant designed and equipped by ourselves was put into massive production. In the late 1980s and the late 1990s, the Shanghai Auto Industry Corporation established joint ventures with German Volkswagen and American General Motors, marking a new stage in the development of auto industry in China.

Over the ensuing century, the automobile has evolved from a hand-crafted, three-wheeled motorized coach into a high-tech product without which our life would be unimaginable.

New Words

attribute	[ə'tribju(:)t]	v.	把……归因于,认为……是某人所有
Germany	['dʒə:məni]	n.	德国
patent	['peitənt]	n.	专利(权),专利证
		v.	给予……专利证(权),取得……专利证(权)
tricycle	['traisikl]	n.	三轮车
transportation	[,træns'pɔ:t'eɪʃən]	n.	交通
shift	[ʃɪft]	v.	转移,转变
coach	[kəʊtʃ]	n.	(旧时的)四轮大马车,长途公共汽车,(铁路上的)客车
manufacturer	[,mænju'fæktʃərə]	n.	制造商
locomotive	[ləukə'məʊtɪv]	n.	火车头,机车
mechanic	[mi'kænik]	n.	技工,机械工
priority	[praɪ'ɔrɪti]	n.	先,前,优先(权)
merge	[mɜ:dʒ]	v.	使(企业等)合并,使并入
enviable	['enviəbl]	a.	值得羡慕的,引起嫉妒的
competitor	[kəm'petɪtə]	n.	竞争者
dominate	['dɒmineɪt]	v.	支配,统治

marque	[mɑ:k]	n.	汽车的型号或式样
batch	[bætʃ]	n.	一次生产量,一批
witness	[ˈwɪtnɪs]	v.	目睹,目击
ensue	[ɪnˈsju:]	v.	接着而来,接着发生
evolve	[ɪˈvɔ:lv]	v.	使发展,使逐渐形成,使进(演)化
craft	[krɑ:ft]	n.	工艺,手艺
		vt.	(一般以过去分词形式出现)(以手工)精巧地制作
motorized	[ˈməʊtəraɪzd]	a.	摩托化的,机动化的

Phrases and Expressions

Karl Benz	卡尔·本茨(奔驰汽车公司创始人)
apply for	申请
by leaps and bounds	非常迅速地
set out	出发,开始
Henry Ford	亨利·福特(美国福特汽车公司的创始人)
assembly line	装配线,总装线
Ford	(美国)福特汽车公司
Lincoln	林肯
American General Motors	美国通用汽车公司
Buick	别克
Chevrolet	雪佛兰
Oldsmobile	奥兹莫比尔
Cadillac	凯迪拉克
Chrysler	克莱斯勒(美国第三大汽车制造企业)
Plymouth	普利茅斯
in essence	实质上
Toyota	(日本)丰田汽车公司
Nissan	(日本)日产汽车公司
driving license	驾驶执照
No. 1 Auto Plant	第一汽车制造厂
turn out	生产,制造
put into production	投入生产
joint venture	合资企业
German Volkswagen	德国大众汽车公司

Notes to the Text

1. The massive market of the automobiles in America was dominated by the Big Three motor manufacturers.
巨大的美国汽车市场被三大汽车制造商所占据。
2. ... the year 1918 witnessed the official issue of the first driving licenses in China.
……1918 年中国正式发行了第一批驾驶执照。

Exercises

I. Translate the following names of cars into Chinese.

- | | | | |
|----------|-------|---------------|-------|
| 1. Benz | _____ | 2. Volkswagen | _____ |
| 3. Golf | _____ | 4. BMW | _____ |
| 5. Grace | _____ | 6. Porsche | _____ |
| 7. Audi | _____ | 8. Opel | _____ |

II. Translate the following abbreviations into corresponding Chinese terms.

- | | |
|--|-------|
| 1. CYL (cylinder) | _____ |
| 2. ASSY (assembly) | _____ |
| 3. A/C (air conditioning) | _____ |
| 4. ANT (antenna) | _____ |
| 5. DIFF (differential) | _____ |
| 6. VIN (vehicle identification number) | _____ |

Section C Dialogue At the 4S Store

The following dialogues took place at a 4S store (See Fig. 1 -2).



Fig. 1 -2 At the 4S store