



高职高专改革创新示范教材

QICHE SHIYONG YINGYU

汽车

实用英语



广州合赢汽车教学设备有限公司 组织编写

王升平 主 编

朱 军 主 审



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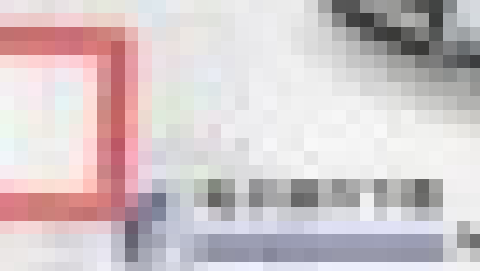
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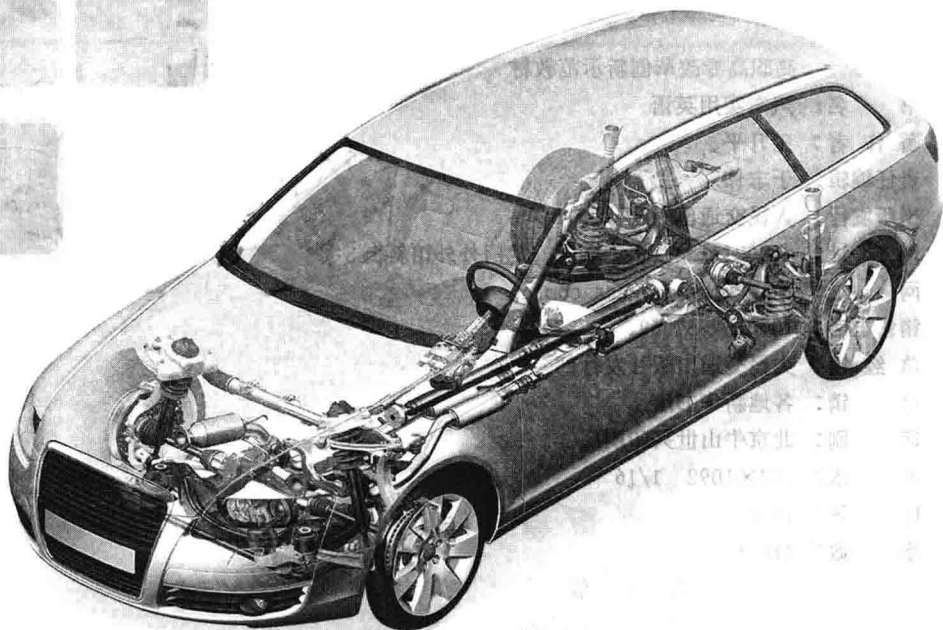
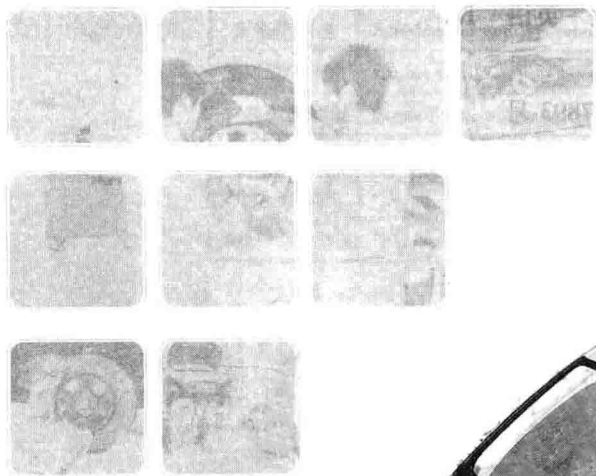
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内 容 提 要

本书是高职高专汽车运用技术专业和汽车检测与维修技术专业改革创新示范教材,以汽车构造为主线,由浅入深地介绍了汽车各主要系统的结构和原理,并将汽车文化、新技术、保险理赔等知识融入其中,能够让学生比较系统地掌握汽车方面的英语知识。

本书适合高职高专汽车运用技术专业和汽车检测与维修技术专业学生使用,还可以作为中职、中专、技工学校等汽车相关专业的教材。

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《国家中长期教育改革和发展规划纲要(2010—2020年)》中提出:大力发展职业教育,把职业教育纳入经济社会发展和产业发展规划,把提高质量作为重点;以服务为宗旨,以就业为导向,推进教育教学改革。实行工学结合、校企合作、顶岗实习的人才培养模式;满足人民群众接受职业教育的需求,满足经济社会对高素质劳动者和技能型人才的需要。

高等职业教育的发展是国家当前教育发展的战略重点之一。我们认为,当前我国高等职业教育需要解决“三个改革”和“三个建设”两大问题。三个改革,即课程体系改革、教学模式改革和教学内容改革;三个建设,即师资队伍建设和教学设施建设、教材建设。

目前,高等职业院校汽车运用技术专业所使用的教材普遍存在以下几个方面的问题:

- (1)专业定位不明确,受本科教育的影响较大,学生反映难,教师反映不好教;
- (2)职业特征不明显,企业反映脱离实际,与他们的需求距离很大;
- (3)教学方式落后,不适应新一轮教学改革的需要,不利于长远发展;
- (4)立体化程度薄弱,教学资源质量不高,教学方式相对落后。

针对以上问题,结合人民交通出版社汽车类专业教材的出版优势,我们开发了《高职高专改革创新示范教材》。本套教材以“积极探索教学改革思路,提升学生职业素质”的指导思想,采用职教专家、行业一线专家、学校教师、出版社编辑、教学设备研发企业“五结合”的编写模式。教材内容的特点是:明确高等职业教育定位,准确体现职业教育特点(以工作岗位所需的知识和技能为出发点);理论内容“必需、够用”;实训内容贴合工作一线实际;选图讲究,易懂易学。

该套教材将先进的教学内容、教学方法与教学手段有效地结合起来,形成课本、课件(部分课程配)和习题集(部分课程配)三位一体的立体教学模式。

本书由中山职业技术学院王升平担任主编,中山职业技术学院黄韵芝、景玉军、郭美华担任副主编。书中项目3,4,5,6,7,8,9,10由王升平编写,项目1由景玉军编写,项目2由郭美华编写,项目11,12由黄韵芝编写。

限于编者的经历和水平,书中难免有不妥或错误之处,敬请广大读者批评指正,提出修改意见和建议,以便再版修订时改正。

职业教育改革创新示范教材编委会

2011年7月



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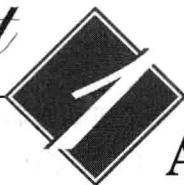
名词缩写

常用名词

参考文献



Project



Automobile overview

知识目标

掌握汽车的分类方法、汽车的总体结构、汽车的技术参数,掌握常用术语(phrases and expressions),了解相关术语(related terms),熟悉世界上知名汽车品牌的商标图案。

能力目标

1. 能读懂汽车总体结构、布局 and 分类方法的相关英文材料,能看懂汽车的技术数据表格,能熟记相关专业词汇;
2. 能写出各种车型的名称;
3. 能读懂汽车知名品牌的图案和英文名称。



Task 1 Automobile structure and layout



任务描述

通过回顾汽车构造和汽车布局方面的背景知识,能够阅读翻译汽车历史、结构、布局方面的课文材料,掌握和熟记相关专业词汇。



知识准备

I. Backgrounds review

一 汽车总体结构

汽车是由数百个总成、上万个零部件装配而成的复杂的机动交通工具,不同车型的结构千差万别,但它们的总体构造都是由发动机、底盘、车身和电气设备组成。发动机是汽车的动力装置,其作用是使供入其中的燃料燃烧而发出动力。动力通过底盘传动系统传给驱动轮驱动汽车行驶。发动机一般是由机体、曲柄连杆机构、配气机构、供给系统、冷却系统、润滑系统、点火系统(汽油发动机采用)、起动系统等部分组成。底盘由以下几部分组成:

传动系统——将发动机的动力传递给驱动车轮。它包括有离合器、变速器、传动轴、驱动桥等部件。

行驶系统——将汽车各总成及部件连成一个整体并对全车起支承作用,以保证汽车正常行驶。行驶系包括车架、前轴、驱动桥的壳体、车轮(包括转向轮和驱动轮)、悬架等部件。

转向系统——保证汽车能按照驾驶员选择的方向行驶,由转向盘的转向器及转向传动装置组成。

制动系统——使汽车减速或停车,并保证驾驶员离开后汽车能可靠地停驻。

车身是驾驶员工作的场所,也是装载乘客和货物的场所。典型车身包括驾驶室、车厢等部件。

电气设备由电源组、发动机起动系和点火系、汽车照明和信号装置等组成。此外,在现代汽车上越来越多地装有各种电子设备:微处理机、中央计算机系统及各种人工智能装置等。

二 汽车布局

为满足不同使用要求,汽车的总体构造和布置形式可以是不同的。按发动机和各个总成相对位置的不同,现代汽车的布置形式通常有如下几种:

发动机前置后轮驱动(FR)——是传统的布置形式。国内外的大多数货车、部分轿车和部分客车都采用这种形式。

发动机前置前轮驱动(FF)——是在轿车上逐渐盛行的布置形式,具有结构紧凑、减小轿车的质量、改善高速时的操纵稳定性等优点。

发动机后置后轮驱动(RR)——是目前大、中型客车盛行的布置形式,具有降低室内噪声、有利于车身内部布置等优点。



发动机中置后轮驱动(MR)——是目前大多数运动型轿车和方程式赛车所采用的布置形式。

汽车的布置形式对于汽车的性能具有重大影响。

II. New words and expressions

layout['leiaut]	<i>n.</i> 布局, 安排
complex['kɒmpleks]	<i>adj.</i> 由许多部分组成的, 复合的, 复杂的; <i>n.</i> 综合体, 集合体
engine['endʒin]	<i>n.</i> 发动机, 引擎
component[kəm'pəʊnənt]	<i>n.</i> 成分, 组成部分, 部件, 元件
overall[,əʊvə'ɔ:l]	<i>adj.</i> 总体的, 全面的, 综合的, 全面考虑的; <i>n.</i> 长罩衣, 工装裤, 工作裤
combust[kəm'bʌst]	<i>v.</i> 消耗, 燃烧
valve[vælv]	<i>n.</i> 阀, 活门, 阀门, 气门
chassis['ʃæsi:]	<i>n.</i> (车辆的) 底盘
lubricate['lu:brikeit]	<i>vt.</i> 加油润滑
lubrication[,lu:bri'keiʃən]	<i>n.</i> 润滑; 加油
ignition[ig'niʃən]	<i>n.</i> (汽油引擎的) 发火装置
skeleton['skelitən]	<i>n.</i> 骨骼, 骷髅, 骨干, 框架, 梗概, 提要
install[in'stɔ:l]	<i>vt.</i> 安装, 安顿, 安置, 使……正式就职
transmit[trænz'mit]	<i>vt. & vi.</i> 发射, 播送, 广播; <i>vt.</i> 传播, 传染, 传导
clutch[klʌtʃ]	<i>n.</i> 控制, 离合器
shaft[ʃɑ:ft]	<i>n.</i> 箭杆, 矛柄, 轴, 烟囱, 通风管道, 升降机井, 光线
axle['æksəl]	<i>n.</i> 轮轴, 车轴
suspension[sə'spenʃən]	<i>n.</i> 悬架, 悬置机构, 悬浮液, 悬, 挂, 吊
hood[hud]	<i>n.</i> (汽车、童车等的) 折合式车篷, 汽车发动机罩
fender['fendə]	<i>n.</i> 壁炉挡板, 挡泥板
panel['pænel]	<i>n.</i> 面, 板, 控制板, 仪表盘
bumper['bʌmpə]	<i>n.</i> (汽车上的) 保险杠, 缓冲器
compartment[kəm'pɑ:tmənt]	<i>n.</i> 间隔
artificial[,ɑ:ti'fiʃəl]	<i>adj.</i> 人造的, 人工的
intelligence[in'telidʒəns]	<i>n.</i> 智力, 智慧
adopt[ə'dɒpt]	<i>vt.</i> 收养, 采用, 采纳, 采取, 正式接受, 通过
stability[ste'biliti]	<i>n.</i> 稳定(性), 稳固
impact['impækt]	<i>n.</i> 影响, 作用, 冲击(力), 碰撞



performance[pe'fɔ:məns]	n. 性能, 工作情况
transverse['trænzvə:s]	adj. 横向的, 横断的, 横切的, <数>横截的; n. 横向物, 横轴, 横断面
spin[spin]	vt. & vi. 使……旋转
be similar to	与……相似
connecting rod	连杆
valve train	配气机构
power train	动力传动系
driving system	驱动系统
steering system	转向系统
braking system	制动系统
front engine, rear-wheel drive (FR)	前置后驱
front engine, front-wheel drive (FF)	前置前驱
rear engine, rear-wheel drive (RR)	后置后驱
mid-engine, rear-wheel drive (MR)	中置后驱

任务实施

I. Read the following passages.

Automobile structure and layout

Automobile is a kind of complex vehicle comprising hundreds of components and thousands of parts. Although automobiles have many kinds of structure and shape, their basic structure is similar to each other, including engine, chassis, body and electrical equipment (shown as Figure 1.1.1). Of course, a special-purpose automobile has some special devices.

The engine is the source of power, and its role is to make the fuel combust and generate power. Power is passed through the chassis to the wheels to drive the vehicle. Engine is normally made up of engine block, connecting rod, valve train, fuel supply system, cooling system, lubrication system, ignition system (gasoline engine) and starting system.

The chassis is the skeleton of a car, which is used to support the whole body and to install all the spare parts. It consists of power train, driving system, steering system and braking system.

Among these systems, the function of the power train is to transmit power to drive the wheels. It comprises clutch, transmission, drive shaft and drive axle.

The driving system's role is to assure a vehicle to run normally. It is made up of drive axle



housing, wheel, suspension and other components.

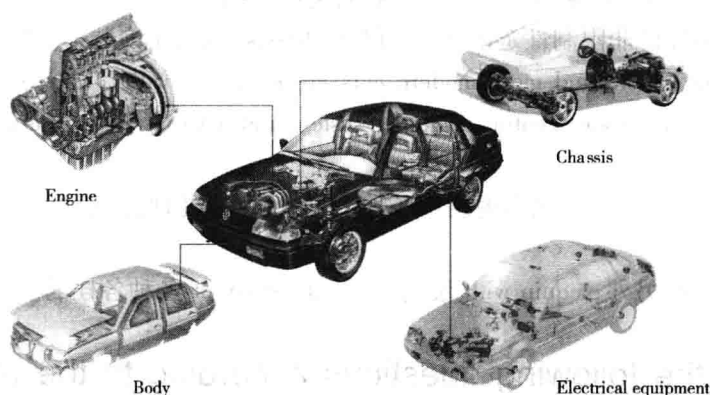


Figure 1.1.1 Automobile basic structure diagram

The steering system is used to ensure that cars can travel under the direction of the driver. It consists of steering wheel, steering gear and other components. The braking system is to make the car slow down or stop.

The body holds the driver and passengers and can load cargos. A typical automobile body is divided into four sections. These sections can be further divided into small units, such as the hood, the fenders, the roof panels, the door, the instrument panel, the bumpers and the luggage compartment.

The electrical equipment is made up of power, engine starting system and ignition system, automotive lighting and signaling devices and other components. In addition, more and more modern cars are equipped with a variety of electronic devices, such as microprocessor, central computer system and a variety of artificial intelligence devices.

Notes on the text

[1] Automobile is a kind of complex vehicle comprising hundreds of components and thousands of parts.

汽车是由数百个总成、上万个零部件装配而成的复杂的机动交通工具。

点拨: comprising 作定语修饰 vehicle。

[2] Although automobiles have many kinds of structure and shape, their basic structure is similar to each other, including engine, chassis, body and electrical equipment.

尽管汽车的结构和形状各种各样,但它们的基本构造是相似的,都是由发动机、底盘、车身和电气设备组成。

点拨: be similar to 与……相似; the same as 与……一样。

[3] The chassis is the skeleton of a car, which is used to support the whole body and to in-



stall all spare parts.

底盘是汽车的骨架, 用来支撑整个车身和安装所有的部件。

点拨: which 引导的非限制性定语从句, 修饰 chassis。Install 安装, 近似于 fix, mount。

[4] In addition, more and more modern cars are equipped with a variety of electronic devices, such as microprocessor, central computer system and a variety of artificial intelligence devices.

另外, 在现代汽车上愈来愈多地装备各种电子设备: 微处理器、中央计算机系统及各种人工智能装置。

点拨: in addition 另外; equip with 装备……; a variety of 各种各样的。

II. Answer the following questions according to the text.

1. How many parts are there in an automobile in general?
2. What is an automobile mainly composed of?
3. How does the power train work?
4. What is the electrical equipment made up of?



知识拓展

Automobile layout

To meet the different requirements of applications, the overall structure and layout of vehicle can be different. According to the relative position of the engine and other components, four types of modern cars' layout are usually as follows (see Figure 1.1.2):

Front engine, rear-wheel drive (FR) - is the traditional layout style. The most trucks, cars and buses adopt this type. Rear-wheel drive, the compactness of this layout makes it very popular. Originally introduced for "baby" cars, the advantage associated with the engine being placed across the vehicle, mounted transversely, has spread the use of rear wheel drive to many large cars. For space reasons, the length of the engine is the limiting factor, but the increased use of V-type engines for larger power units has enabled many of these engines to be placed transversely. Accommodating all the main components under the hood in one compartment enables maximum space for passengers.

Front engine, front-wheel drive (FF) - is increasingly popular for its compact structure, which reduces the car's weight and improve its stability.

Rear engine, rear-wheel drive (RR) - is a popular layout for large-and medium-sized passenger cars. This layout helps reduce interior noise and improve interior layout of the body.



Mid-engine , rear-wheel drive (MR) - is mainly applied in sports cars such as Formula 1 racing cars.

Four-wheel drive-this arrangement is safer because it distributes the drive to all four wheels. The sharing of the load between the four wheels during acceleration reduce the risks of wheel spin. Also the positive drive to each wheel during braking minimizes the possibility of wheel lock-up. This layout has a major advantage when driving on slippery surfaces such as icy and muddy roads. When driving on an icy road or cross-country (off-highway) , a two-wheel-drive vehicle could become un-drivable because the lose of grip.

Layout for vehicles has a significant impact on their performance.

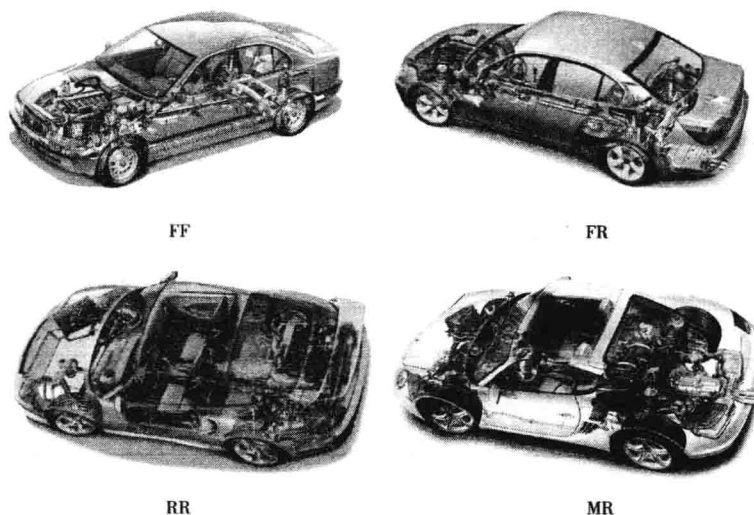


Figure 1.1.2 Automobile layout

自我评价

I . Fill in the blanks with right words according to the text.

1. Although automobiles have many kinds of structure and shape , their basic structure is similar to each other , including engine , _____ , _____ and electrical equipment.

2. Among these systems , the function of the _____ is to transmit power to drive the wheels.

3. The _____ is the source of power , and its role is to make the fuel _____ and generate power.

4. The _____ holds the driver and passengers and load cargos.



5. The _____ is the skeleton of a car, which is used to _____ the whole body and to _____ all the spare parts.

6. The _____ is made up of power, engine starting system and ignition system, automotive lighting and signaling devices and other components.

II. Fill in the table in English or Chinese.

English	Chinese
	配气机构
steering system	
	前置后驱
front engine, front-wheel drive (FF)	
	人工智能
mid-engine, rear-wheel drive (MR)	
	冷却系
connecting rod	
	电气设备
cross-country	

III. Please identify the producers of these vehicles.

