



21 世纪高职高专规划教材
高等职业教育规划教材编委会专家审定

QICHE ZHUANYE YINGYU

汽车专业英语

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主审 吴宗保



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内 容 提 要

本书是一本图文并茂,以汽车构造和售后服务为主线的专业英语教材,全书共分八章二十四单元。主要包括汽车基础知识、发动机、底盘、车身、电气设备、电控系统、汽车检测、汽车营销、汽车保险等内容。每个单元包括课文、专业词汇、注释、练习、参考译文等。

本书可作为高职高专院校汽车专业教材,也可供汽车维修、汽车营销与保险等方面技术人员参考使用。

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前 言

随着汽车保有量的逐年增加,进口汽车大量涌入国内,国内汽车制造业零部件的本土化比例也在不断提升,汽车技术正在迅速地与国际接轨。汽车专业人员急需掌握大量的汽车英文资料,为此,我们编写了这本《汽车专业英语》。它既可作为高职高专院校汽车专业教材,也可供汽车维修、汽车营销与保险等方面技术人员参考使用。本书中的课文均为汽车专业技术性文章,循序渐进,逐步进入汽车英语氛围的学习,使学生掌握一定数量的专业词汇,提高专业阅读和书写能力。

本书以汽车构造和售后服务为主线,全书共分为八章二十四单元。每个单元包括课文、专业词汇、注释、练习、参考译文等。课文中配有图表,此外,还专门编著了一章阅读材料,以拓展学生的知识面,突出能力的培养。

本书由归艳荣、赵云平主编,吴宗保主审。第一、四、七章由归艳荣、林鹏翔、杨磊编写;第五、六章由赵云平编写;第二、三章由董迪晶编写;第八章由李梦泽编写。全书由归艳荣、赵云平统稿。

本书编写过程中得到天津交通职业学院领导的大力支持,在此表示衷心的感谢。

由于作者水平所限,书中错误和不当之处在所难免,敬请广大读者给予批评指正。

编 者

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Chapter I Automobile Basics

Unit 1 Automobile Performance Parameter

The dimensions of an automobile can make you know the appearance of it. It contains the wheelbase, the track front and rear, the overall length, the overall width, the overall height, overhang front, overhang rear, the angle of approach, the angle of departure, interior length, interior width, interior height, the ground clearance, curb weight, gross vehicle weight, number of the doors, seating capacity and trunk or cargo space, as shown in Fig. 1-1.

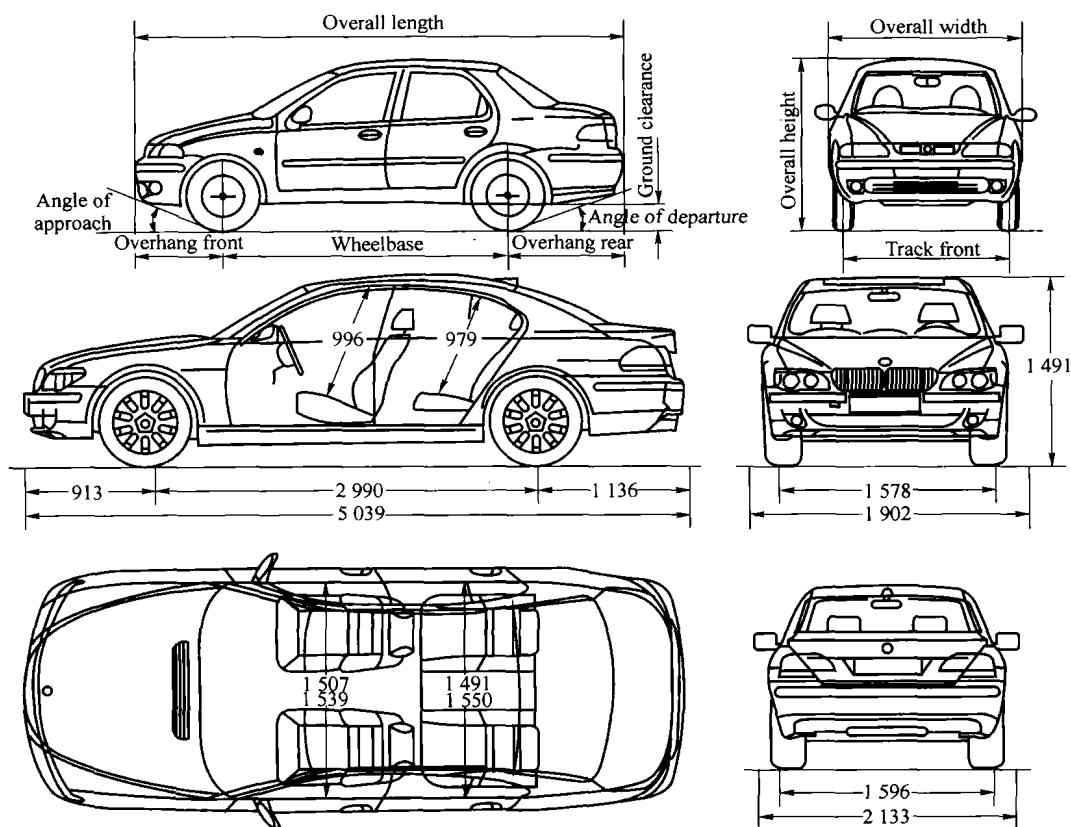


Fig. 1-1 Dimensions of automobile

Whether the performance of an automobile is outstanding depends on its engine and the chassis. And whether the engine is powerful depends on its type, displacement, compression ratio, maximum output and torque. What is more, the advanced suspension system, the brake type, the transmission and the wheels are made up of the tough, durable chassis.

Engine performance parameter includes engine type, bore and stroke, displacement, compression ratio, valve train, power, torque and ignition system type. The diameter of

the cylinder is called the engine bore. Displacement and compression ratio are two frequently used engine specification. Displacement indicates engine size, and compression ratio compares the total cylinder volume to compression chamber volume.¹ Power is defined as the rate at which work is being done. Brake power is defined as the actual power measured at the rear of the engine under normal conditions. Indicated power is defined as theoretical power. It represents the maximum power available from the engine under ideal or perfect conditions. Indicated power is calculated on the basis of engine size, displacement, speed, and the pressure developed theoretically in the cylinder. Frictional power is defined as the power used to overcome internal friction within the engine and the drive train. Sources of frictional power include bearings, pistons sliding inside the cylinder, the compression stroke, the generator, fan, water pump, belts, air conditioner, transmission, drive shaft rear deferential assemblies, and so on.² Road power is the power available at the drive wheels of the vehicle. Torque is one way to measure work and defined as twisting force. This force is produced in an engine because of the combustion of fuel. Combustion pushes the piston down. The piston causes the crankshaft to rotate, producing torque. This force causes the wheels to rotate.

Chassis performance specification includes suspension type, brakes type and size, steering type and turning radius, type and size of tires and wheels and fuel capacities.

New words and Expressions

performance	n. 性能, 特性(曲线), 效能, 运行, 操作	(车)厢, 驾驶室	
parameter	n. 参数	capacity	n. 容量(积), (发动机)排量, (额定)功率
dimensions	n. 尺寸参数, 尺寸	trunk	n. (车辆)行李箱(舱), 后备箱, 干线, 主干道, 中继线
appearance	n. 外观(貌, 形), 外表, 外部特性, 状态, 出现	bore	n. 孔, 孔径, (转子发动机)气缸筒(内壁), 钻孔器, 镗头
wheelbase	n. 轴距	displacement	n. (发动机)排量
track	n. 轮距, 轨迹, 胎面花纹 v. 跟踪, 沿旧辙行驶	volume	n. 体积, 容积, 容量, 总数, 数量, 大小, 声量, 音量
overhang	v. 外(悬)伸, 突出物(部分), 悬臂, (前、后)悬	actual power	有效(实际)功率
approach angle	接近角	indicated power	指示功率
departure angle	离去角	frictional power	摩擦功率
interior	adj. 内部的, 车身内部, 内饰, 客	drive train	传动系

Notes

1. Displacement and compression ratio are two frequently used engine specification. Displacement indicates engine size, and compression ratio compares the total cylinder volume to compression chamber volume.

译文: 排量和压缩比是发动机常用的参数, 排量表明了发动机的大小, 压缩比是气缸总

容积与燃烧室容积之比。

2. Sources of frictional power include bearings, pistons sliding inside the cylinder, the compression stroke, the generator, fan, water pump, belts, air conditioner, transmission, drive shaft rear deferential assemblies, and so on.

译文:摩擦功率来源于轴承、活塞在气缸内滑动、压缩冲程、发电机、风扇、水泵、皮带、空调、变速器、驱动轴、后差速器总成等。

Exercises

1. What do dimensions of an automobile include?
2. Describe the definition of compression ratio.

Translation

汽车性能参数

通过汽车尺寸参数可以让我们了解汽车的外形。其尺寸参数有轴距(即前桥与后桥之间的距离),总长,总宽,总高,前悬,后悬,接近角,离去角,车厢内部的长、宽、高,最小离地间隙,整备质量,总载重量,车门数,座位数,货厢和行李箱,如图 1-1 所示。

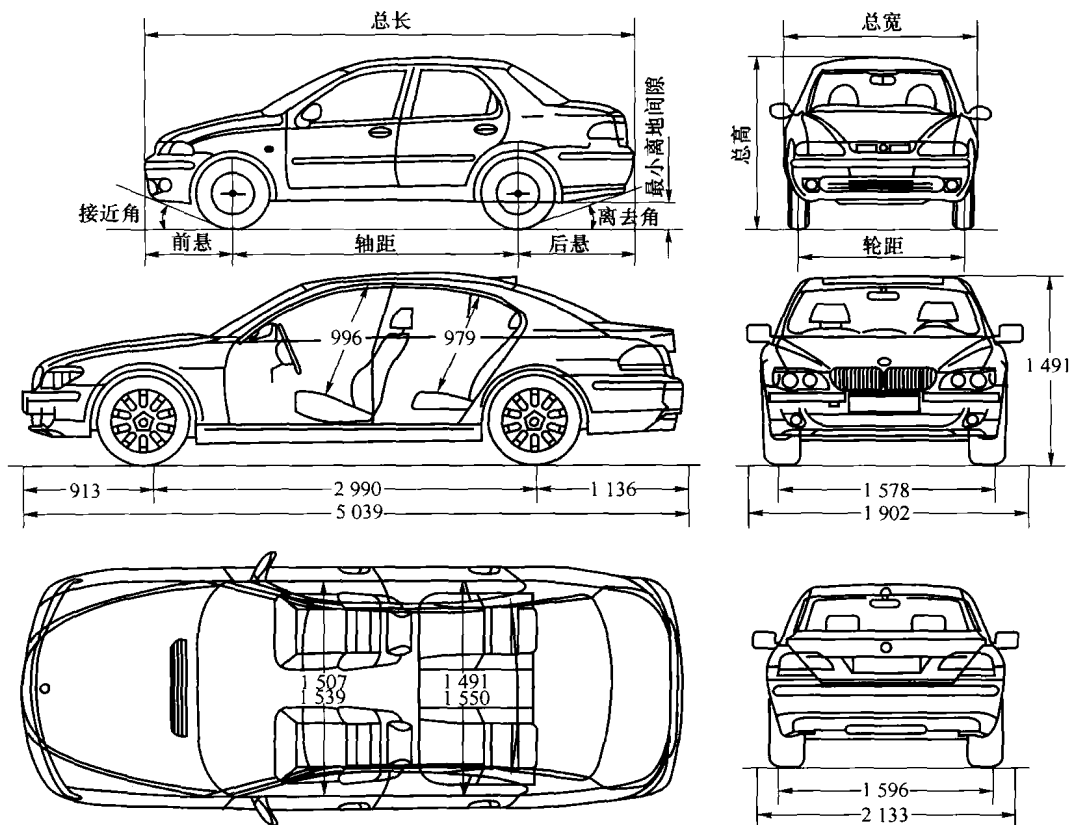


图 1-1 汽车尺寸参数

汽车性能的突出特点取决于发动机和底盘。发动机动力取决于发动机类型、排量、空燃比、最大输出扭矩。此外,还有现代悬架系统、制动类型、变速器和车轮等构成的具有很好韧性并且坚固的底盘。

发动机性能参数包括发动机类型、缸径、冲程、排量、压缩比、气门机构、发动机功率、发动机扭矩及点火方式。气缸的直径称作缸径。排量和压缩比是发动机常用的参数,排量表明了发动机的大小,压缩比是气缸总容积与燃烧室容积之比。功率是指工作比率,制动功率是指在正常条件下的发动机后部测量的有效功率,指示功率是指理论功率,它表示发动机在怠速或良好条件下得到的最大功率。指示功率是基于发动机尺寸、工作容积、速度、气缸压力计算得来的。摩擦功率是指用于克服发动机内部和传动系摩擦的功率。摩擦功率来源于轴承、活塞在气缸内滑动、压缩冲程、发电机、风扇、水泵、皮带、空调、变速器、驱动轴、后差速器总成等。驱动功率是指汽车驱动车轮功率。扭矩是一种测量方法,也定义为扭力。这种力是由发动机内部燃料燃烧产生的,燃烧推动活塞向下运行,引起曲轴旋转,产生扭矩,这个力再带动车轮旋转。

底盘性能参数中含有悬挂类型、制动方式及大小、转向形式、转弯半径、车轮和轮胎类型及大小、油箱容量等。

Unit 2 Structure of Automobile

It is well-known that the automobile is composed of four sections such as engine, chassis, body and electrical system, as shown in Fig. 2-1.¹

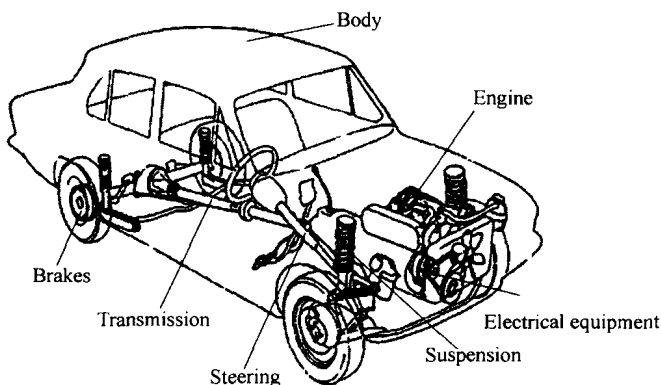


Fig. 2-1 Structure of automobile

The automobile engine can be classified according to: ① number of cylinders; ② arrangement of cylinders; ③ arrangement of valves; ④ type of cooling; ⑤ number of cycles; ⑥ type of fuel burned; ⑦ type of ignition.

Engine is the power source of the automobile. Of all automobile components, engine is the most complicated assembly with dominant effects on the function of automobile. So, the engine is generally called the “heart” of automobile. It includes the fuel, lubricating,

cooling, ignition and starting systems.

The chassis is a framework used to assemble auto components on it. The chassis itself is divided into four systems like power train, suspension system, steering system and brake system.

The automobile body serves the obvious purpose of providing shelter, comfort and protection for the occupants. The body is generally classified into four sections: the front, the rear, the top and the underbody.

The electric system supplies lighting and driving power for the automobile. It cranks the engine for starting. It supplies the high-voltage surges that ignite the compressed air-fuel mixture in the combustion chambers. The electric system includes the battery, generator, starting system, ignition system, lighting system, horn system, radio and other devices.

The automobile description above seems to conclude that though automobiles are quite different in design, they are basically similar in structure.²

New words and Expressions

structure *n.* 结构,构造,装置 *v.* 构成,配置

engine *n.* 发动机

chassis *n.* 底盘,底板,机架,车架

body *n.* 车身,外壳,支柱,车厢,(活塞)裙部

cylinder *n.* 气缸,液压缸,圆柱

valve *n.* 气门,阀门

cycle *n.* 周期,循环,工序,回路

ignition *n.* 点燃,点火

lubricate *v.* 润滑,加润滑油,注油

framework *n.* 框架,结构,机构

assemble *v.* 装配,安装,总装,组合

suspension *n.* (行驶系)悬架,悬浮,吊,挂

steer *v.* 驾驶,操纵,控制方向,(车轮)转向角

brake *n.* 制动器,测功器 *v.* 制动,(使)减速

shelter *n.* (车站/旅客)站棚

underbody *n.* 车身底部

crank *n.* 曲柄,摇把,支架 *v.* 转动,(发动机)起动

air-fuel mixture 可燃混合气

combustion chamber 燃烧室

generator *n.* (直流)发电机

horn *n.* 号角,喇叭,进气喇叭口,喇叭形物体

Notes

1. It is well-known that the automobile is composed of four sections such as engine, chassis, body and electrical system, as shown in Fig. 2-1.

译文:正如我们大家所了解的,汽车是由四个部分组成:发动机、底盘、车身和电气系统,如图 2-1 所示。

2. The automobile description above seems to conclude that though automobiles are quite different in design, they are basically similar in structure.

译文:通过以上关于汽车的概述可以得出结论:虽然汽车在设计上有所不同,但在结构

上基本相似。

Exercises

1. What are the four sections of an automobile?
2. What does the chassis consist of?

Translation

汽车结构

正如我们大家所了解的,汽车是由四个部分组成:发动机、底盘、车身和电气系统,如图 2-1 所示。

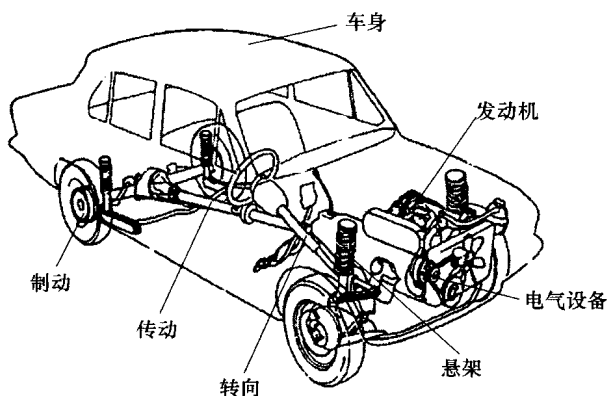


图 2-1 汽车结构

汽车发动机可以按下列方式进行分类:①气缸数;②气缸排列形式;③气门布置形式;④冷却类型;⑤冲程数;⑥燃料类型;⑦点燃方式。

发动机是汽车动力源。在所有汽车零部件中,发动机最复杂但又具有重要功用,因此发动机通常被称为汽车的心脏。它包括燃油供给系统、润滑系统、冷却系统、点火系统和启动系统。

底盘是一个框架,汽车零部件组装在它的上面。底盘分为四个系统,即传动系统、悬架系统、转向系统、制动系统。

车身显而易见的功用是为使用者提供庇护、舒适和保护。车身通常分为四个部分:前部、后部、顶部和车身底部。

电气系统为汽车提供照明和动力。它可以提供高压电来点燃燃烧室内的可燃混合气,使发动机转动以便汽车启动起来。电气系统包括蓄电池、发电机、启动系统、点火系统、照明系统、报警系统、音响以及其他装置。

以上关于汽车的概述可以得出结论:虽然汽车在设计上有所不同,但在结构上基本相似。

Chapter II Automobile Engine

