

<<机械制造专业英语>>

图书基本信息

书名：<<机械制造专业英语>>

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作者：陈金益 主编

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内容概要

本书为高职高专教材，是根据“高职高专机械类专业人才培养目标及基本规格”的要求编写的。全书内容包括纯金属的结构、凝固机理、二相合金、钢及热处理、铸造生产、锻造、冲压和轧制、轴和联轴器、紧固件和弹簧、机械零件的强度、滚动轴承、机构机械设计基础、机械设计概论、材料选择、机床及机械加工、金属切削刀具、钻模与夹具、尺寸公差与表面粗糙、质量与检测、计算机与制造业、计算机辅助编制工艺规程、数字控制、工业机器人及拉伸试验等方面的英文资料。

本书可作为高职、高专、成人高校及本科院校举办的二级职业技术学院机械类专业英语教材，也可作为从事机械设计和机械加工人员的阅读材料。

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书籍目录

Lesson 1 Structure of Pure Metal Crystal Structure of Metals Reading Material:(A)Lattice Parameters
(B)DensityLesson 2 Mechanism of Solidification Reading Material:Solidification of Pure MetalsLesson 3 Two-Phase
Alloys Reading Material:Characteristic Properties of Eutectic-System AlloysLesson 4 Kinds of Steels Reading
Material:Iron and Its ProductionLesson 5 Heat Treatment of Steel Reading Material:Carburizing,Nitriding and
CyanidingLesson 6 Fundamental Foundry Processes Reading Material:Type of MoldesLesson 7 Forging,Stamping
and Rolling Reading Material:Soldieringand WeldingLesson 8 Shafts and Couplings Reading Material:Shaft
DesignLesson 9 Fasteners and Springs Reading Material:Fastening and Joining MethodsLesson 10 The Strength of
Mechanical Elements Reading Material:Failure Analysis of SpringsLesson 11 Rolling Contact Bearings Reading
Material:(A)Journal Bearings and Antifriction Bearings (B)GearsLesson 12 Mechanism Reading
Material:Mechnisms and Machines;Basic ConceptsLesson 13 Fundamentals of Mechanical Design Reading
Material:The Machine Designer's ResponsibilityLesson 14 Introduction to Machine Design Reading
Material:Design Process and StagesLesson 15 Material Selection Reading Material:Selection of Fastener
MaterialsLesson 16 Lathes Reading Material:(A)Drills and Drilling Machines (B)Milling Machines
(C)Shaper and Planer (D)Grinding MachinesLesson 17 Machining Reading Material:Machine
ToolsLesson 18 Metal-Cutting ToolsLesson 19 Jigs and FixtrursLesson 20 Dimensional Tolerances and Surface
Roughness Reading Material:(A)Surface Finish Definitions (B)Fundamentals of Manufacturing
AccuracyLesson 21 Residual Stresses Reading Material:Precision of Machine ToolsLesson 22 Quality and
Inspection Reading Material:Qulity ControlLesson 23 The Computer and Manufacturing Reading
Material:Computer Aided DesignLesson 24 Computer Aided Process Planning Reading Material:Capitalizing on
CAPPLesson 25 Numerical Control Reading Material:Numerical Control of Machine ToolsLesson 26 Industrial
Robots Reading Material:RoboticsLesson 27 Strength and Ductility of Materials Reading Material:(A)Mechanical
Properties of Metals (B)Hardness and Hardness Testing课文参考译文参考文献

章节摘录

Lesson 8 Shafts and Couplings Virtually all machines contain shafts. The most common shape for shafts is circular and the cross section can be either solid or hollow (hollow shafts can result in weight savings). Rectangular shafts are sometimes used, as in screwdriver blades, socket wrenches and control knob stems. A shaft must have adequate torsional strength to transmit torque and not be overstressed. It must also be torsionally stiff enough so that one mounted component does not deviate excessively from its original angular position relative to a second component mounted on the same shaft. Generally speaking, the angle of twist should not exceed one degree in a shaft length equal to 20 times that of the diameter. Shafts are mounted in bearings and transmit power through such devices as gears, pulleys, cams and clutches. These devices introduce forces which attempt to bend the shaft; hence, the shaft must be rigid enough to prevent overloading of the supporting bearings. In general, the bending deflection of a shaft should not exceed 0.01 in. per ft. of length between bearing supports. In addition, the shaft must be able to sustain a combination of bending and torsional loads. Thus an equivalent load must be considered which takes into account both torsion and bending. Also, the allowable stress must contain a factor of safety which includes fatigue, since torsional and bending stress reversals occur.

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